Board of Governors
PENSION & BENEFITS COMMITTEE
Friday 14 May 2021
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

Time		Item	ACTION
		CONFIDENTIAL SESSION	
9:30	1.	Report from Pension Investment Committee – Termination of Investment Manager +	Recommendation to BOG
		OPEN SESSION	
9:40	2.	Draft Report – Advisory Group on Responsible Investment + [Sheryl Kennedy]	Discussion
	3.	Report of the Pension Investment Committee* [Sheryl Kennedy]	Information
	4.	Approval of the 12 March 2021 Minutes (Open Session)* and Business Arising	Decision
	5.	Execution Against the Work Plan* [Grivicic]	Information
	6.	Update on Government Pension Plan Initiatives [Shapira]	Information
10:15	7.	Annual Audit of the Pension Plan Fund Financial Statements* [Sarah Hadley, Blaine Hertzberger of EY]	Decision
	8.	Previous Years' Fees and Expenses* [Sarah Hadley]	Information
10:45	9.	Draft Actuarial Valuation – 1 January 2021* [Byron, Shapira]	Recommendation to BOG
11:00	10.	Update from Working Group on Definitions in Policy 23, 59	Discussion/ Decision
	11.	Update re: Benefits Plan Implementation a. Planned Marketing of Specific Benefits, including LTD	
	12.	Board-approved 2021-22 Operating Budget* Overview (Rush)	Information
	13.	Other Business	
		CONFIDENTIAL SESSION	
	14.	Approval of the 11 February 2021 Minutes (Confidential)+ and Business Arising	Decision
	15.	Approval of the 12 March 2021 Minutes (Confidential)+ and Business Arising	Decision
	16.	Services Review+	Discussion

Next Meeting: Friday 18 June 2021, 9:30 a.m. – 12:00 noon

*attached
** to be distributed
+ distributed separately

8 May 2021

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

Report to the Pension & Benefits Committee
Pension Investment Committee
14 May 2021

The Pension Investment Committee (PIC) met on 3 May 2021 and agreed to forward the following items to the Committee for information or approval as noted below.

INFORMATION

Asset/Liability Study. As reported previously, PIC (with the support of Pension & Benefits Committee) engaged Aon Hewitt to conduct a new asset-liability study with the goals of revisiting the asset mix and investment philosophy embodied in the Statement of Investment Policies & Procedures (SIPP), and making recommendations re: new investments. Discussions included: the importance of maximizing returns within acceptable risk tolerances; consideration of interest rates and inflation and how those impact both the investment portfolio and the liabilities of the pension plan; allocations to Canadian and global equities and opportunities for responsible investment in those markets; interest in expanding investments in alternative assets while being mindful about transparency, liquidity and valuation concerns with certain asset classes. Following discussion, the committee agreed on the following target asset mix. The recommended asset mix with appropriate ranges will come forward for approval as part of the draft SIPP (see update below) in the Fall.

Asset Class	Proposed Targets	Current Targets (from SIPP)	Current Actual (as at 31 March 2021)
Short-Term and Cash	2.0%	2.0%	1.8%
Universe Bonds	25.0%	33.0%	33.5%
Canadian Equities	5.0%	15.0%	8.4%
Global Equities	48.0%	40.0%	47.3%
Listed Real Estate	5.0%	5.0%	2.9%
Listed Infrastructure	5.0%	5.0%	6.1%
Direct Real Estate	5.0%	0.0%	0.0%
Direct Infrastructure	5.0%	0.0%	0.0%

The committee discussed a potential longer-term objective portfolio that would contemplate moving from universal to long-term bonds, and introduction of direct lending and private equity asset classes. No decision was taken in that regard at this time. The committee also discussed the merits of having an opportunity allocation with a target of 0.0% and a maximum of 5.0% that would provide flexibility in the fund to invest in different types of assets to pursue higher alpha, risk reduction or diversification. Policies, procedures (including guardrails) and necessary resources to pursue these opportunities would need to be in place prior to making any investment of this nature.

SIPP. PIC reviewed the SIPP at its September and November meetings, and an investment philosophy discussion paper at its March meeting. A small working group has been meeting since March to redraft the SIPP with a focus on updating the investment philosophy, streamlining the document by removing duplicative material from other governing documents (e.g. committee terms of reference), and developing complementary procedural documents to enhance oversight activities. The working group plans to bring the draft to the June meeting of PIC and the Fall 2021 meetings of F+I, P+B and the Board of Governors.

Allocations to Mirova Global Equity Fund and RBC Global Equity Focus Fund. At its April meeting, the Board of Governors approved the appointment of Mirova Global Equity Fund (Mirova) and RBC Global Equity Focus Fund (RBC) as investment managers for the registered pension fund. Following conclusion of the asset liability study in May, the PIC has decided to allocate $100 million to each of Mirova and RBC. The funds will be taken from existing investments, moving allocations closer to the proposed targets above. This reallocation is within the current approved SIPP asset mix ranges and represents less than 15% of the Plan's total assets as of the beginning of the calendar year and, therefore, does not need approval by F+I and P+B[1].

Infrastructure Investment Subcommittee. PIC is forming an investment search subcommittee to look at infrastructure investments and managers. The membership includes representatives from the among the Board, external and employee members of PIC, along with support from Aon, Finance and the Secretariat. The terms of reference and workplan will be presented at the June committee meeting.

Sheryl Kennedy
Chair, Pension Investment Committee

[1] https://uwaterloo.ca/secretariat/sites/ca.secretariat/files/uploads/files/pic_tor_approved_2018-10-30.pdf

University of Waterloo
Board of Governors
PENSION & BENEFITS COMMITTEE
Minutes of the 12 March 2021 Meeting
[in agenda order]

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

Consultant: Linda Byron, Allan Shapira

Resources: Sarah Hadley, Lee Hornberger

Guests: Rob Campbell, Sheryl Kennedy (2,3), Samantha Lou, Sue McGrath, Michelle St. Amour

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.

2. UPDATE ON ACTIVITY – ADVISORY GROUP ON RESPONSIBLE INVESTMENT

Kennedy provided an overview of the advisory group, noting the group's mandate, activity to date, and aim to report back to the Board of Governors at the June 2021 meeting. As part of its process, the advisory group expects to consult with this committee at its May meeting.

3. REPORT FROM PENSION INVESTMENT COMMITEE

Kennedy related some of the recent activity at the PIC: in progress to revise the asset-liability study that was completed a number of years ago; examining asset mix for pension investments, and may provide recommendations on this as the work progresses; focusing on risk-adjusted returns with an ESG lens; will be examining leading practices around ESG and responsible investment, and this may result in proposed revisions to investment policies; PIC has met with all investment managers and has reviewed criteria for selection/monitoring/ exit from managers. Members discussed: prospective changes to the SIPP; University Pension Plan is still under development, and with no prospective move to such a plan it is important to focus on risk-adjusted returns; a change to investment philosophy might be forthcoming.

4. APPROVAL OF THE 11 FEBRUARY 2021 MINUTES (OPEN SESSION) AND BUSINESS ARISING

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

5. EXECUTION AGAINST THE WORK PLAN

This item was received for information.

6. UPDATE ON GOVERNMENT PENSION PLAN INITIATIVES

No update provided at this meeting.

7. ACTUARIAL VALUATIONS (RPP AND PPP) AND REVIEW OF CONTRIBUTION AND PROTOCOL CAPS

Byron spoke to the valuation material distributed with the meeting agenda: valuation prepared based on assumptions approved earlier this year; second increase to pension contributions arising from the 2020 plan changes are slated to occur on 1 May of this year; rate of return for 2020 net of expenses and fees is comparable to other large public sector pension plans; discount rate reduced to 5.3% from 5.6%; detail on current service costs and salary assumptions. Members discussed: university current service cost is relatively static compared to 2020, while member current service cost has increased, and this occurred as anticipated from the 2020 plan changes; some gains seen due to retirement experience, though this could reverse in an upcoming year; solvency ratio of 87%, and going concern ratio of 95.1%, and this increases to 96.0% with alternate salary assumption. By consensus, member directed that the consultant prepare a submission for filing of this valuation with the regulator; this will be brought to an upcoming meeting.

8. OVERVIEW OF PENSION PLANS FOR THE U15 RESEARCH-INTENSIVE UNIVERSITIES

Shapira provided an overview. The chair indicated he will convey this to the board chair in response to their query.

9. BENEFITS PLAN PREMIUM RENEWALS

Hornberger provided detail on each of the renewal items, and members obtained clarification on technical details. A motion was heard to approve the continuance of the 20% subsidy for life insurance, while deploying the difference in dollar amount between the 20% and 30% subsidy into the claims fluctuation reserve. Huber and Bleaney. Carried. Members observed with consternation that Canada Life proposed a 97% increase to LTD premiums, and ascertained that with support from Aon that figure was negotiated to a 50% increase. Members discussed the LTD benefit: experience has increased in recent years, and the benefit provided is better than that of comparators; plan design changes could temper increases; coverage of COLA at 5% is noticeably above the recent COLA experience; fixed COLA values are preferred by insurance companies to lend stability to contracts; LTD benefit is 100% employee paid. A motion was heard to approve the 50% increase to LTD premiums, and to proceed with a process to examine market offerings to confirm plan design as well as the current insurer. Bleaney and Vetzal. Carried, with Birmingham and Huber abstaining. Regarding ASO fees and charges, Aon assisted in negotiating a decrease to pooling charges and there is plan to market ASO fees as part of the outcomes of the recent benefits plan changes. A motion was heard to approve ASO fees and charges as presented. Jha and Birmingham. Carried. Following a short review of the budget rates exhibit, a motion was heard to approve budget rates as presented. Huber and Saunders. Carried.

10. MAY 1, 2021 EXTENDED HEALTH PLAN AMENDMENT, IMPLEMENTATION UPDATE

Hornberger indicated that during the process of implementing the recent benefits plan changes it was discovered that some details on a small number of benefits changes will require confirmation by the committee. Members considered the question of whether the annual maximum for continuous glucose monitors should also apply to flash glucose monitors. A motion was heard to approve the applicability of $4000 per year as a combined maximum for continuous glucose monitors and flash glucose monitors together. Bleaney and Jha. Carried. Members ascertained that in vitro fertilization is not necessarily a standard benefit and that the plan design specifics need to be confirmed in that regard. The costed plan design presented is the same design utilized as part of the recent benefits plan changes, and would incur no increment cost. A motion was heard to approve the plan design details for IVF coverage and process for scenarios as presented. Jha and Saunders. Carried. Related to the recent plan changes, members heard that the holistic benefits working group invited the director of the School of Optometry to a recent meeting to discuss potential partnership arrangements.

11. VISION CARE – EYE EXAMS

Hornberger spoke to the exhibit, which arises out of the recent FAUW salary settlement, and members clarified the impact on budget rates and that this change would cover members until 65 at which age a member is covered by the province. A motion was heard to recommend to the Board of Governors the addition of vision care to the employee benefits plan as described in the exhibit. Jha and Bleaney. Carried.

12. PENSION ADMINISTRATION SYSTEM: ARIEL, APS AGREEMENT WITH MORNEAU SHEPELL

Hornberger discussed: this item was explored at the confidential session in February 2021, and is brought to open session at this meeting to confirm the consensus agreement; HR is satisfied with the vendor, and a procurement process would be investigated on renewal. Members voiced that the online self-help tools should include one to provide a commuted value calculation, and Hornberger indicated that the vendor can be engaged on that potential addition.

13. UPDATE FROM WORKING GROUP ON DEFINITIONS IN POLICY 23, 59

No update provided at this meeting.

14. INVESTMENT UPDATE, Q4 2020

Huber provided a short overview, and one member inquired as to whether longer term reporting (e.g. 15 years) could be provided. This item was received for information.

15. ANNUAL COMMITTEE SELF-ASSESSMENT

The secretary noted that this process helps to regularly assess the functioning of the committee, and that forms will be circulated electronically following the meeting.

16. OTHER BUSINESS

There was no other business.

NEXT MEETING

The next regular meeting is scheduled for Friday 14 May 2021, 9:30 a.m. – 12:00 noon.

27 April 2021

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 May 2020**	**12 June 2020**	**18 Sept 2020**	**16 Oct 2020**	**20 Nov 2020**	**15 Dec 2020**	**15 Jan 2021**	**11 Feb 2021**	**12 Mar 2021**	**14 May 2021**
Approval of Actuarial Valuation Assumptions	Annual (Jan)							✓			
Investment Status of PPP	Annual (Feb)								✓		
Cost-of-living Increase for Pensioners	Annual (Feb)								✓		
Pensions for Deferred Members	Annual (Feb)								✓		
Salaries for Pension Purposes for Individuals on Long-term Disability	Annual (Feb)								✓		
Actuarial Valuations (RPP and PPP), with posting to website once approved	Annual (Mar)									✓	
Review of Contribution and Protocol Caps (RPP and PPP)	Annual (Mar)									✓	
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 May 2020	12 June 2020	18 Sept 2020	16 Oct 2020	20 Nov 2020	15 Dec 2020	15 Jan 2021	11 Feb 2021	12 Mar 2021	14 May 2021
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, 2021 (tbd)											

The University of Waterloo Pension Plan for Faculty and Staff

December 31, 2020

Building a better working world

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Members of the Pension & Benefits Committee of
The University of Waterloo Pension Plan for Faculty and Staff

May 7, 2021

We are pleased to provide the required communications related to our audit of the pension plan of the University of Waterloo Pension Plan for Faculty and Staff (the Plan).

Our audit was designed to express an opinion on the statement of net assets available for benefits and the statement of changes in net assets available for benefits as at December 31, 2020 and for the year then ended. We received the full support and assistance of your personnel in conducting our audit. Open and candid dialogue with you is a critical step in the audit process and in the overall governance process and we appreciate this opportunity to share the insights from our audit with you.

This report is intended solely for the information and use of the Pension & Benefit Committee and management. It is not intended to be, and should not be, used by anyone other than these specified parties. We disclaim any responsibility to any third party who may rely on it. Further, this report is a by-product of our audit and indicates matters identified during the course of our audit. Our audit did not necessarily identify all matters that may be of interest to the Pension & Benefits Committee in fulfilling its responsibilities.

If you have any questions or comments, please do not hesitate to contact us.

Sincerely

Ernst & Young LLP

Chartered Professional Accountants
Licensed Public Accountants

Blaine Hertzberger, CPA, CA, LPA
Partner
519 571 3339

EY services

Our primary deliverable was to express an opinion on the statement of net assets available for benefits and the statement of changes in net assets available for benefits of the Plan. We have completed substantially all of our audit procedures and expect to issue an unqualified audit opinion upon finalization of the following matters:

- ► Receipt of signed letter of representation from management
- ► Approval of the financial statements by the Pension & Benefits Committee

Auditor's responsibility under Canadian Auditing Standards (CAS)

The financial statements are the responsibility of management. Our audit is designed in accordance with the CAS to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement.

Independence

We confirm our independence to management and the Pension & Benefits Committee pursuant to CAS 260. We are not aware of any relationships that may reasonably be thought to bear on our independence, and we reconfirm our independence up to the date of this report.

Summary of the audit approach

For the purpose of the audit of the financial statements, our audit plan is developed after considering the inherent risks and control risks and the effectiveness of the internal controls related to the Plan. A variety of factors are considered when establishing the audit scope including size, specific risks, the volumes and types of transactions processed, changes in the business environment, and other factors. Our audit strategy focuses on those financial statement items that may be more vulnerable to material misstatement, including the risk of fraud. Our procedures for your Plan were primarily of a substantive nature.

Our principal areas of focus were:

- ► Completeness and measurement of pension contributions
- ► Measurement and occurrence of benefit payments
- ► Completeness and occurrence of investment income, and
- ► Valuation of investments

At the conclusion of the audit, we formulate our opinion on the financial statements of the Fund as to their fair presentation in all material respects. Our estimation of materiality requires professional judgment and necessarily takes into account qualitative as well as quantitative considerations. Materiality for net assets can be set at 1-2%. Materiality for the 2020 audit was set at approximately 1.7% (2019 – 1.8%) of net assets, or $36,000,000 (2019 - $34,000,000).

Critical policies, estimates, areas of audit emphasis, and significant risks

Disclosure requirements

There were no changes made to the disclosure requirements in fiscal 2020.

Auditing the valuation of fixed income investments

Canadian auditing standards require us to perform additional procedures to audit the valuation of investments with higher valuation risk or measurement uncertainty risk by performing the following:

- ► Document an understanding of management's investment strategy
- ► Understand how the investment portfolio is priced and which pricing sources are used
- ► Understand the types of securities that compose the portfolio and evaluate them to determine the appropriate classification as higher or lower estimation uncertainty, and
- ► For securities classified as higher uncertainty estimation, if applicable, perform additional procedures to gain comfort over the appropriateness of the valuations.

EY reviewed the individual fixed income securities held in the plans for any that may be considered to have higher estimation uncertainty and performed additional procedures where necessary. Based on procedures performed in 2020, there were no fixed income investments identified that exhibited higher estimation uncertainty. The bonds and short-term investments held by the Plan are valued based on quoted bids from recognized investment dealers and therefore, are classified as level 2. We did not identify any issues with the valuation of fixed income investments.

Auditing the valuation of equity investments

We updated our understanding of how the fair values of the Plan's investments have been determined. As part of this update of our understanding, we obtained the CIBC Mellon and BNY Mellon Service Organization Control reports. We confirmed all investments held at year-end with the custodian (CIBC Mellon) and respective investment managers.

On a sample basis, we tested the market values of equity investments held by the Plan. EY noted no issues with the investment valuation when compared to independent market information. The equity investments held by the Plan are lower estimation uncertainty since they are exchange traded or there is daily pricing and therefore, they are classified as level 1 in the fair value hierarchy disclosure. All pooled fund investments held by the Plan are valued based on inputs that have observable market data and are classified as Level 2. We obtain fund manager statements to support the market value of the pooled funds. As a result of the procedures performed, we did not identify any issues with the valuation of equity or pooled fund investments.

Employer contributions

We updated our understanding of the employer contributions process. With reference to the latest actuarial funding valuation report as of January 1, 2020 we verified that the employer contributions made by the Plan were in accordance with the recommendations of the actuary.

We tested and recalculated on a sample basis the employee and employer contributions. No issues were noted.

Benefit payments

We confirmed our understanding of the benefit payments process and examined, on a test basis, benefit payments to verify they were accurately processed. We performed an analytical review of benefit payments and investigated variances from the prior year. In addition, we confirmed that members who withdrew from the pension plan in the current year but had not yet received payment were properly accrued for at year-end. No issues were noted.

Accounting estimates

There are no significant judgments or estimates required to prepare the financial statements where actual amounts are likely to be significantly different from the estimates.

Fraud considerations and the risk of management override

We are responsible for planning and performing our audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether caused by error or by fraud (CAS 240, *The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements*).

Our audit procedures encompassed the requirements of CAS 240: brainstorming, gathering information to facilitate the identification of and response to fraud risks and performing certain procedures to address the risk of management override, including examining journal entries, reviewing accounting estimates and evaluating the business rationale of significant unusual transactions.

We are not aware of any fraud or non-compliance with laws and regulations involving senior management or any fraud or non-compliance with laws and regulations that could cause a material misstatement of the financial statements.

Summary of audit differences (SAD)

During the course of our audit, we accumulate differences between amounts and disclosures recorded by the Plan and amounts and disclosures that we believe are required to be recorded under Canadian accounting standards for pension plans. In fiscal 2020, no audit adjustments were identified during the audit.

Summary of significant disclosure deficiencies

During the course of our audit, we identify those significant disclosures required in the financial statements of the Plan that we believe were not adequately reflected. We did not identify any significant disclosure deficiencies.

Other required communications

- There were no major issues discussed with the Pension & Benefits Committee or those charged with governance in connection with our initial or recurring retention as the auditors, including, among other matters, any discussions regarding the application of accounting principles and auditing standards, the scope of the audit, financial statement disclosures and the wording of the auditors' report.
- There were no disagreements with management about matters that individually or in the aggregate could be significant to the Plan's financial statements or the auditors' report.
- We are not aware of any instances where management consulted with other accountants about auditing or accounting matters.
- There were no serious difficulties encountered in dealing with management related to the performance of the audit.
- We are not aware of any significant unusual transactions recorded by the Fund or of any significant accounting policies used by the Plan related to controversial or emerging areas for which there is a lack of authoritative guidance.
- We are not aware of any related party transactions that are not in the normal course of operations and that involve significant judgments made by management concerning measurement or disclosure.
- There were no material alternative accounting treatments that have been discussed with management during the current audit period.
- There were no significant matters arising during the audit in connection with the Plan's related parties.
- There are no other findings or issues arising from the audit that are, in our judgment, significant and relevant to those charged with governance regarding the oversight of the financial reporting process.
- Based on our inquiries of management and those charged with governance, we are not aware of any subsequent events which might affect the financial statements.

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University of Waterloo Pension Plan for Faculty and Staff

[Ontario Registration Number 0310565]

Financial Statements

December 31, 2020

Independent auditors' report

To the Pension and Benefits Committee of the
University of Waterloo

Opinion

We have audited the accompanying financial statements of the **University of Waterloo Pension Plan for Faculty and Staff** [the "Plan"] [Ontario Registration Number 0310565], which comprise the statement of net assets available for benefits as at December 31, 2020, and the statement of changes in net assets available for benefits for the year then ended, and notes to the financial statements, including a summary of significant account policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the net assets available for benefits of the Plan as at December 31, 2020, and the changes in its net assets available for benefits for the year then ended. The financial statements have been prepared by management based on the financial reporting provisions of Regulation 909, Section 76 of the *Pension Benefits Act* (Ontario).

Basis for opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of our report. We are independent of the Plan in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of matter – Basis of accounting and restriction on use

Without modifying our opinion, we draw attention to note 1 to the financial statements, which describes the basis of accounting. The financial statements are prepared to assist the Pension and Benefits Committee to meet the requirements of the Financial Services Regulatory Authority of Ontario. As a result, the financial statements may not be suitable for another purpose. Our report is intended solely for the Pension and Benefits Committee and the Financial Services Regulatory Authority of Ontario and should not be used by parties other than the Pension and Benefits Committee or the Financial Services Regulatory Authority of Ontario.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with the financial reporting provisions of Regulation 909, Section 76 of the *Pension Benefits Act* (Ontario), and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Plan's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Plan or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Plan's financial reporting process.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Plan's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Plan to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Waterloo, Canada
May 14, 2021

Statement of net assets available for benefits

As at December 31

	2020	**2019**
	$	$
Assets		
Investment income receivable	**3,377,637**	3,936,893
HST receivable	**—**	286,881
Investments, at fair value *[note 4[a]]*	**2,104,840,179**	1,936,865,955
Total assets	**2,108,217,816**	1,941,089,729
Liabilities		
Benefits payable		
Retirement	**48,995**	211,909
Termination	**1,437,141**	11,116
Management and administrative fees payable *[note 7[b]]*	**1,252,207**	2,364,823
Total liabilities	**2,738,343**	2,587,848
Net assets available for benefits	**2,105,479,473**	1,938,501,881

See accompanying notes

University of Waterloo Pension Plan for Faculty and Staff

Statement of changes in net assets available for benefits

Year ended December 31

	2020	2019
	$	$
Increase in net assets		
Employee contributions		
Required	**39,033,019**	35,175,455
Employer contributions		
Current service	**49,634,000**	43,799,000
Special	**12,156,240**	15,628,379
Transfers from other plans *[note 8]*	**221,750**	1,696,800
Interest income *[note 4[d]]*	**21,585,286**	23,975,600
Dividend income *[note 4[d]]*	**29,364,504**	24,266,185
Realized gains on investments	**43,417,202**	40,443,207
Unrealized gains on investments	**89,280,789**	143,144,887
Total increase in net assets	**284,692,790**	328,129,513
Decrease in net assets		
Benefit expenses		
Retirement benefits	**67,845,837**	64,355,003
Terminations benefits	**6,937,117**	8,567,056
Death benefits	**2,549,470**	1,839,652
Unrealized foreign exchange losses	**35,812,722**	3,553,254
Management and administrative expenses *[note 7[a]]*	**4,570,052**	3,947,211
Total decrease in net assets	**117,715,198**	82,262,176
Net increase in net assets for the year	**166,977,592**	245,867,337
Net assets available for benefits, beginning of year	**1,938,501,881**	1,692,634,544
Net assets available for benefits, end of year	**2,105,479,473**	1,938,501,881

See accompanying notes

Notes to financial statements

December 31, 2020

1. Basis of presentation

These financial statements of the University of Waterloo Pension Plan for Faculty and Staff [the "Plan"] have been prepared on a going concern basis and in accordance with the significant accounting policies set out below that comply with the financial reporting provisions of the Financial Services Regulatory Authority of Ontario as prescribed by the Financial Services Commission of Ontario for financial statements under Regulation 909, Section 76 of the *Pension Benefits Act* (Ontario). The basis of accounting used in these financial statements materially differs from Canadian accounting standards for pension plans in Section 4600, *Pension Plans*, in Part IV of the *CPA Canada Handbook* in part because it excludes the Plan's pension obligations and related disclosures. Consequently, these pension fund financial statements do not purport to show the adequacy of the Plan's assets to meet its pension obligations. These financial statements present the information of the Plan as a separate reporting entity independent of the Sponsor and Plan participants.

In accordance with Section 4600, Canadian accounting standards for private enterprises in Part II of the *CPA Canada Handbook* have been adopted for policies that do not relate to the Plan's investment portfolio to the extent that those standards do not conflict with the requirements of Section 4600.

2. Description of the plan

The Plan is a contributory defined benefit pension plan covering employees of the University of Waterloo [the "University" or the "Sponsor"]. The Board of Governors of the University is the administrator of the Plan [the "Administrator"]. The University's Pension and Benefits Committee has been appointed by the Board of Governors to administer the Plan. CIBC Mellon Trust Company is the custodian and trustee of the Plan. The assets of the Plan are held "in trust" within CIBC Mellon Trust Company. Aon has served as the actuary of the Plan during 2020. The Plan is registered under the *Pension Benefits Act* (Ontario) under Registration Number 0310565.

Funding policy

The Plan is open to all full-time and part-time salaried employees who meet certain eligibility requirements. Under the terms of the Plan, the employees are required to contribute 6.95% of base earnings up to the Canada Pension Plan's Yearly Maximum Pensionable Earnings ["YMPE"] limit plus 9.95% of base earnings exceeding the YMPE and up to two times the YMPE, plus 9.95% of base earnings exceeding two times the YMPE [refer to note 10 for scheduled increases in employee contribution rates]. The University contributes the balance of the cost required to fund the Plan, as determined by an actuarial valuation of the Plan.

Funding valuation

The most recent actuarial valuation, filed with the Financial Services Commission of Ontario, was as of January 1, 2020 and was prepared by Aon. The rate of compensation increase used was 4.00% per year and the discount rate was 5.6%. The next required actuarial valuation is as of January 1, 2023.

Benefits

On the normal retirement date, a member is entitled to an annual pension equal to 1.4% of his or her Final Average Earnings ["FAE"] up to the YMPE average, plus 2.0% of his or her FAE in excess of the YMPE average multiplied by his or her years of credited service. FAE is the member's average annual base earnings during the averaging period's continuous months of highest earnings during the member's last 10 years of employment at the University. The averaging period for FAE is a 60-month averaging period. The YMPE average is determined by averaging the YMPE in the year of retirement plus the YMPE in the four preceding years.

Effective May 1, 2014, the Plan adjusted its guaranteed indexation related to post-retirement cost of living adjustments. Any pension benefits earned as at December 31, 2013 will be indexed at 100% of the Consumer Price Index ["CPI"] to a maximum of 5%, and any pension benefit earned as of an employee's date of retirement less the pension benefit earned as at December 31, 2013 will be indexed at 75% of CPI to a maximum of 5%.

Vested retirement benefits of the Plan are payable upon satisfaction of early retirement eligibility requirements [as early as age 55] and prior to the member's normal retirement date [age 65]. Vested retirement benefits are also payable in the case of termination of employment prior to retirement. A death benefit is payable to the beneficiary of a member as designated.

Income taxes

The Plan is a Registered Pension Trust as defined in the *Income Tax Act* (Canada) and, as such, is not subject to income taxes.

3. Summary of significant accounting policies

Recognition of contributions and benefits

All contributions from the Sponsor and the Plan participants are reflected in the year of the related participant's earnings.

Contributions and benefits payable are recognized on the accrual basis of accounting. Termination benefits payable consist of amounts owing but not yet paid to employees who were terminated from the Plan before the year end. Retirement benefits payable consist of amounts owing but not yet paid to employees who retired before the year end.

Lump-sum payments or transfers out of the Plan are accounted for in the period in which the election to affect such payment or transfer is made.

Investments

Investments are recorded at fair market value on the statement of net assets available for benefits.

Fair value is the amount of consideration that would be agreed upon in an arm's length transaction between knowledgeable, willing parties who are under no compulsion to act. The fair value of investment assets is determined as follows:

[a] Cash and short-term deposits are valued at amortized cost which approximates fair value.
[b] Bonds, debentures, equities, preferred shares and derivative financial instruments are valued by reference to quoted market prices.
[c] Investments in pooled funds are valued based on fair value information provided by the fund managers.

Notes to financial statements

December 31, 2020

Investment liabilities are stated at fair value and represent liabilities that are incurred by the Plan in investment related activities. These may include, but are not limited to, derivatives in a liability position, repurchase agreements, financial instruments sold but not yet purchased, and cash collateral received from counterparties.

Net realized gains or losses on disposal and unrealized changes in fair value for the year are recognized in the statement of changes in net assets available for benefits. Interest earned on investments is recorded on an accrual basis. Dividend income is recorded on the ex-dividend date. Transaction costs are expensed as incurred.

Foreign currency translation

Investments denominated in foreign currencies are translated into Canadian dollars at rates of exchange as at the year-end date. Transactions of investments denominated in foreign currencies are translated into Canadian dollars at rates of exchange applicable on the transaction dates.

Use of estimates

The preparation of financial statements requires the Plan's Administrator to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingencies as at the date of the financial statements, and the reported amounts of increases and decreases in net assets available for benefits during the reporting period. Actual results could differ from those estimates.

4. Investments

[a] Summary of investments

Investments are comprised of the following:

	2020		2019	
	Fair value	**Cost**	**Fair value**	**Cost**
	$	$	$	$
Equities				
Canadian companies	**287,122,319**	**195,707,878**	283,194,312	195,187,467
Canadian equity pooled funds	**40,615,506**	**38,621,717**	—	—
Foreign equity pooled funds	**955,594,279**	**735,277,560**	757,289,579	554,482,525
	1,283,332,104	**969,607,155**	1,040,483,891	749,669,992
Bonds, cash and short-term deposits				
Canadian fixed term bonds	**365,724,112**	**352,292,837**	329,857,064	328,248,731
Bond pooled funds	**366,691,449**	**331,175,253**	338,116,553	321,325,399
Cash and short-term deposits	**89,092,514**	**89,092,519**	228,408,447	228,408,352
	821,508,075	**772,560,609**	896,382,064	877,982,482
	2,104,840,179	**1,742,167,764**	1,936,865,955	1,627,652,474

[b] Investment managers

The investments are managed by the following investment managers:

	2020		2019	
	Fair value $	Cost $	Fair value $	Cost $
TD Asset Management				
Bonds				
Canadian fixed term bonds	**365,724,112**	**352,292,837**	329,857,064	328,248,731
Bond pooled funds	**366,691,449**	**331,175,253**	338,116,553	321,325,399
Canadian equity pooled funds	**40,615,506**	**38,621,717**	—	—
Foreign equity pooled funds	**563,500,071**	**506,185,127**	260,227,049	246,829,122
Cash and short-term deposits	**2,579,475**	**2,579,475**	12,451,846	12,451,846
	1,339,110,613	**1,230,854,409**	940,652,512	908,855,098
University of Waterloo Managed Fund				
Equities				
Canadian equities [infrastructure and real estate]	**179,543,268**	**97,484,345**	173,755,480	94,505,166
Cash and short-term deposits	**68,669,957**	**68,669,961**	190,355,803	190,355,559
	248,213,225	**166,154,306**	364,111,283	284,860,725
Sionna				
Equities				
Canadian Companies	**107,579,051**	**98,223,533**	109,438,832	100,682,301
Cash and short-term deposits	**3,039,179**	**3,039,179**	4,039,115	4,039,115
	110,618,230	**101,262,712**	113,477,947	104,721,416
Oldfield Partners				
Equities				
Foreign equity pooled funds	**—**	**—**	165,270,155	83,265,421
Walter Scott & Partners				
Equities				
Foreign equity pooled funds	**392,094,208**	**229,092,433**	331,792,375	224,387,982
Operating fund at CIBC Mellon Trust Company				
Cash and short-term deposits	**14,803,903**	**14,803,903**	21,561,683	21,561,832
Total investments	**2,104,840,179**	**1,742,167,763**	1,936,865,955	1,627,652,474

Notes to financial statements

December 31, 2020

[c] Significant investments

The Plan contains the following individual investments, which exceed 1% of the cost or market value of the total investments as at December 31, 2020:

	Fair value $	Cost $
Short-term deposits		
Royal Bank BA .18% due January 15, 2021	**68,549,402**	**68,549,402**
Pooled funds		
Walter Scott & Partners Global Equity Fund	**392,094,208**	**229,092,432**
TD Emerald Canadian Bond Index Fund	**366,691,449**	**331,175,253**
TD Emerald Pooled US Equity Fund	**348,425,164**	**303,064,451**
TD Emerald International Equity Fund	**215,074,907**	**203,120,676**
TD Emerald Canadian Equity	**40,615,506**	**38,621,717**
Canadian equities		
Brookfield Infrastructure Partners (BIP.UN)	**108,060,643**	**35,968,114**
Ishares S&P/TSX Capped REIT	**56,099,181**	**59,292,817**

[d] Investment income by type

	2020 $	2019 $
Dividend income		
Canadian equities	**10,319,631**	7,692,592
Foreign pooled funds	**19,044,873**	16,573,593
	29,364,504	24,266,185
Interest income		
Bonds, cash and short-term deposits	**1,567,648**	3,935,279
Canadian fixed term bonds	**10,167,512**	10,243,603
Pooled funds	**9,850,126**	9,796,718
	21,585,286	23,975,600

[e] Forward foreign exchange contracts

There were no forward foreign exchange contracts as at December 31, 2020 or December 31, 2019.

Notes to financial statements

December 31, 2020

5. Fair value measurements

Canadian accounting standards for pension plans require disclosure of a three-level hierarchy for fair value measurements based on the transparency of inputs to the valuation of an asset or liability as at the financial statement date. The three levels are defined as follows:

Level 1: Fair value is based on quoted market prices in active markets for identical assets or liabilities. Level 1 assets and liabilities generally include equity securities traded in an active exchange market.

Level 2: Fair value is based on observable inputs other than Level 1 prices, such as quoted market prices for similar [but not identical] assets or liabilities in active markets, quoted market prices for identical assets or liabilities in markets that are not active, and other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 2 assets and liabilities include debt securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts whose value is determined using a pricing model with inputs that are observable in the market or can be derived principally from or corroborated by observable market data. This category generally includes pooled funds, hedge funds, Government of Canada, provincial and other government bonds, Canadian corporate bonds, and certain derivative contracts.

Level 3: Fair value is based on non-observable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This category generally includes private equity investments and securities that have liquidity restrictions.

	2020			
	Level 1	**Level 2**	**Level 3**	**Total**
	$	$	$	$
Assets				
Cash and short-term deposits	**—**	**89,092,514**	**—**	**89,092,514**
Equities	**287,122,319**	**—**	**—**	**287,122,319**
Pooled funds	**—**	**1,362,901,234**	**—**	**1,362,901,234**
Bonds	**—**	**365,724,112**	**—**	**365,724,112**
	287,122,319	**1,817,717,860**	**—**	**2,104,840,179**

	2019			
	Level 1	**Level 2**	**Level 3**	**Total**
	$	$	$	$
Assets				
Cash and short-term deposits	—	228,408,446	—	228,408,446
Equities	283,194,312	—	—	283,194,312
Pooled funds	—	1,095,406,133	—	1,095,406,133
Bonds	—	329,857,064	—	329,857,064
	283,194,312	1,653,671,643	—	1,936,865,955

6. Financial instruments and risk management

The Plan's investment performance is subject to financial risks as a result of its investing activities. These financial risks could impact net assets available for benefits. These financial risks include credit risk, liquidity risk, interest rate risk, other price risk and foreign exchange risk. The Administrator manages these risks in accordance with the Statement of Investment Policies and Procedures [the "SIPP"]. The SIPP includes aggregate investment limits by asset class in order to achieve the Plan's investment objectives at an acceptable level of risk. In addition, the SIPP outlines individual investment limits and diversification objectives within different asset classes and permitted investment categories within the asset classes. The Administrator monitors adherence to the policy and the performance of investment managers relative to the applicable benchmarks and action is taken as deemed necessary.

Credit risk

Credit risk relates to the potential exposure that the other party to a financial instrument will fail to discharge an obligation and cause the Plan to incur a financial loss. Concentration of credit risk exists when a significant proportion of the portfolio is invested in securities with similar characteristics or subject to similar economic, political or other conditions.

The SIPP restrictions require Canadian bonds or debentures to be rated a minimum of BBB or equivalent, establishes a cap of US denominated fixed income securities, and bans the purchase of foreign currency fixed income securities. In addition, the SIPP states that no single investment holding shall represent more than 10% of the market value of the Plan's assets.

All of the Plan's fixed term investments are invested in Canadian short-term bonds. The credit risk of the Canadian short-term bonds as at December 31, 2020 and as at December 31, 2019 are detailed in the following chart:

Credit ratings	**AAA**	**AA**	**A**	**BBB**	**Total**
As at December 31 2020	**0.4%**	**14.5%**	**43.8%**	**41.3%**	**100%**
As at December 31 2019	2.3%	20.8%	39.0%	37.9%	100%

Liquidity risk

Liquidity risk is the risk that the Plan may be unable to meet pension payment obligations as they come due. The SIPP requires that all investments should be reasonably liquid so that they can be converted into cash on short notice. As such, the Plan's exposure to liquidity risk is considered negligible.

The following is a maturity analysis of the fixed-term bonds held by the plan:

	2020	**2019**
	$	$
Less than 1 year	**20,176,328**	1,612,145
1 – 5 years	**259,991,646**	257,522,989
5 – 10 years	**84,543,789**	68,058,377
Greater than 10 years	**1,012,349**	2,663,553
Total	**365,724,112**	329,857,064

Interest rate risk

Interest rate risk refers to the adverse consequences of interest rate changes on the Plan's net assets available for benefits and changes in net assets available for benefits. This risk arises as changes in market interest rates affect the fair market value of the Plan's assets as well as the returns that the plan can earn. The SIPP outlines a range of 20% – 45% for fixed income securities. The Administrator adjusts the investment mix in the portfolio in response to changes in market interest rates.

The following analysis summarizes the impact on the Plan's net assets available for benefits, following reasonably possible changes in interest rates to each bond category to which the Plan has a significant exposure.

	Impact of change in interest rates	
	-1%	**+1%**
Canadian fixed term bonds	10,240,275	(10,240,275)
Bond pooled funds	30,802,082	(30,802,082)
	41,042,357	(41,042,357)

Other price risk

Other price risk is the risk that the value of the investments will fluctuate as a result of changes in market prices. As the Plan records all investments at fair value, investment values reflected in the statement of net assets available for benefits represent the maximum exposure to market risk. The SIPP outlines a range of 45% – 70% for equities. The Administrator adjusts the investment mix in the portfolio in response to changes in market conditions.

Foreign exchange risk

The Plan is exposed to foreign currency fluctuations to the extent that its foreign investments are denominated in foreign currencies. Fluctuations in the value of the Canadian dollar against foreign currencies can have an impact on the fair value of foreign investments. The SIPP allows for hedging of portfolio assets denominated in foreign currencies into Canadian dollars as a strategy to mitigate foreign exchange risk.

Notes to financial statements

December 31, 2020

The following sensitivity analysis summarizes the impact on the Plan's net assets available for benefits, following reasonably possible changes in foreign currency exchange rates, for each currency to which the Plan has a significant exposure.

	Impact of change in exchange rates	
	+5%	-5%
Euro [€]	5,188,863	(5,188,863)
United States Dollar [$]	28,985,733	(28,985,733)
British Pound Sterling [£]	2,290,785	(2,290,785)
Japanese Yen [¥]	4,584,019	(4,584,019)
Swiss Francs [₣]	2,450,267	(2,450,267)

Market risk for equity investments

The table below demonstrates the sensitivity of the fair value of the Plan's investments in equities to a possible change of 10% in the relevant equity indices. The beta of each equity mandate, a measure of volatility, has been applied in estimating this sensitivity.

	Fluctuation of	Impact of % change in fair value on net assets	Sensitivity $
Equities			
Canadian	Stock Market Indices	+10%	30,341,406
		-10%	(30,341,406)
Pooled Funds	Stock Market Indices	+10%	92,053,112
		-10%	(92,053,112)

7. Management and administrative expenses

[a] Management and administrative expenses

Management and administrative expenses consist of the following:

	2020 $	2019 $
Investment management	**2,867,249**	2,418,538
Custodial	**239,331**	222,408
Actuarial	**307,200**	306,678
Administration	**642,666**	721,895
Audit	**19,126**	18,448
Non-recoverable Harmonized Sales Tax	**494,480**	259,244

Notes to financial statements

December 31, 2020

	4,570,052	3,947,211

[b] Management and administrative fees payable

Management and administrative fees payable consist of the following:

	2020 $	**2019** $
Investment management	**826,452**	961,798
Custodial	**44,421**	21,767
Actuarial	**94,209**	127,830
Administration	**265,542**	720,969
Audit	**21,583**	21,357
HST	**—**	511,102
	1,252,207	2,364,823

[c] Contributions

There were no required contributions past due at December 31, 2020.

8. Transfers from other plans

Transfers from other plans represent transfers into the Plan from external pension plans of a previous employer.

9. Capital management

The capital of the Plan is represented by the net assets available for benefits. The Plan's objectives when managing its capital are to: [i] safeguard its ability to continue as a going concern including compliance with regulatory requirements under the *Pension Benefits Act* (Ontario), and [ii] satisfy its obligations to pay benefits to the Plan participants. In meeting these objectives, the Sponsor periodically reviews the funding and investment policies of the Plan, the results of the actuarial funding valuation and the level of benefits provided to participants.

The Administrator has adopted a SIPP which states investment objectives, guidelines and benchmarks used in investing the capital of the Plan, permitted categories of investments, asset mix diversification and rate of return expectations. The SIPP was last updated effective November 1, 2020. The amendments to the SIPP reflect updated asset mix allocation ranges.

The portfolio return expectations for the Plan per the SIPP is that the annualized rate of return of the Plan must exceed the annualized rate of increase in the CPI by at least 360 basis points ["bps"], net of the associated investment management fees over any 10-year period. Reporting from the actuary of the Plan as at December 31, 2020 shows a return of 7.57% on the total pension fund, excluding a currency overlay, for the last 10-year period. The Bank of Canada reports total average annual CPI of 1.58% for the relevant 10-year period. The return on the total pension fund for the last 10-year period achieves the portfolio return expectations for the Plan per the SIPP.

Notes to financial statements

December 31, 2020

The SIPP prescribes asset categories that the Plan can invest in along with a targeted asset allocation for each of these categories. The following table presents the asset categories, the permitted asset mix allocation, and the asset mix allocation as at December 31, 2020.

Asset categories	**Asset mix allocation**	**Asset mix allocation as at December 31, 2020**
Cash	**0-5%**	**4%**
Fixed income	**20-45%**	**35%**
Total fixed income	**20-45%**	
Canadian equity	**5-15%**	
Global equity	**30-55%**	
Total equity	**45-70%**	**52%**
Infrastructure	**0-10%**	
Real estate	**0-10%**	
Total alternatives [infrastructure and real estate equity]	**0-20%**	**9%**
		100%

The investments fell within the targeted asset mix ranges as specified in the SIPP at December 31, 2020.

10. Subsequent events

Changes to employee contribution rates were approved, effective May 1, 2020, to be phased in through May 1, 2022.

Portion of salary	**May 1, 2019**	**May 1, 2020**	**May 1, 2021**	**May 1, 2022**
Less than 1x YMPE	6.25%	6.95%	7.40%	7.80%
Between 1x and 2x YMPE	8.95%	9.95%	10.60%	11.20%
Greater than 2x YMPE	9.95%	9.95%	10.60%	11.20%

11. Measurement uncertainty [COVID-19]

On March 11, 2020, the World Health Organization characterized the outbreak of a strain of the novel coronavirus ["COVID-19"] as a pandemic. COVID-19 has caused significant disruption, resulting in a global economic slowdown with governments around the world taking actions to curtail the spread of the disease. Global equity and fixed income markets have experienced significant uncertainty and volatility. The duration and magnitude of the impact of the COVID-19 outbreak and the impact on the economy and the financial effect on the Plan and the sponsor are not known at this time. These impacts could include decreased values in the investment portfolio, changes in funding, and declines in investment performance.

Pension Plan Management and Administrative Fees Incurred in 2020[1]
with 4 prior years of comparative information

Expense Category	2020 ('000s)	2019 ('000s)	2018 ('000s)	2017 ('000s)	2016 ('000s)
Investment Management Fees					
TD Asset Management	559	500	598	504	504
Walter Scott and Partners Ltd.	1843	1648	1555	1411	1254
Sionna Investment Managers[2]	317	270	216	209	185
Oldfield[3]	933	1315	1157	1072	876
Trilogy Global Advisors[4]	-160	0	672	1023	856
Total Investment Management Fees	**$3,492**	**$3,733**	**$4,198**	**$4,219**	**$3,675**
Custodian Fees	239	222	273	211	213
Aon	307	307	235	280	301
Administration Fees	643	722	692	663	850
Ernst & Young - Audit Fees	19	19	19	20	20
Total Pre-Tax Management and Administrative Fees	**$4,700**	**$5,003**	**$5,417**	**$5,393**	**$5,059**
HST[5]	**494**	**259**	**696**	**554**	**398**
Total Management and Administrative Fees[6]	**$5,194**	**$5,262**	**$6,113**	**$5,947**	**$5,457**

1 Amounts from the audited annual financial statements

2 The amount invested with Sionna was increased by $43m (from available cash within the pension) in September 2019

3 Oldfield investment liquidated August 2020 and proceeds reinvested in TDAM mandates. Fees include monthly management fees and termination fees.

4 Trilogy investment liquidated August 2018 and proceeds reinvested in TDAM mandates. 2020 reversal of fees amount is an accounting correction that should have been recorded in 2019 upon conclusion of the Trilogy relationship.

5 UW recovers HST paid by the pension fund where possible through HST rebates. HST recoveries are recorded when the returns are filed.

6 Total exceeds the total management and administrative expenses in the financial statements due to Oldfield monthly management fees, which are deducted directly from the investment pool and this presentation (netting against investment income) is followed in the financial statements.

Actuarial Valuation as at January 1, 2021 for University of Waterloo Pension Plan

Canada Revenue Agency Registration Number: 0310565

June 2021

DRAFT

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Executive Summary

An actuarial valuation has been prepared for the University of Waterloo Pension Plan (the "Plan") as at January 1, 2021 for the primary purpose of establishing a funding range in accordance with legislative requirements for the Plan until the next actuarial valuation is performed. This section provides an overview of the important results and the key valuation assumptions which have had a bearing on these results. The next actuarial valuation for the purposes of developing funding requirements should be performed no later than as at January 1, 2024.

Summary of Principal Results

Financial Position

	January 1, 2021	January 1, 2020
Going Concern		
Assets	$ 2,105,435,000	$ 1,938,502,000
Liabilities	2,036,523,000	1,868,707,000
Financial Position	$ 68,912,000	$ 69,795,000
Adjustments[1]	(158,269,000)	(145,837,000)
Surplus/(Unfunded Liability)	**$ (89,357,000)**	**$ (76,042,000)**
Solvency		
Assets[2]	$ 2,104,935,000	$ 1,938,002,000
Liabilities	2,423,689,000	2,146,037,000
Financial Position	$ (318,754,000)	$ (208,035,000)
Adjustments[1]	59,453,000	50,680,000
Surplus/(Unfunded Liability)	**$ (259,301,000)**	**$ (157,355,000)**
Hypothetical Wind Up		
Assets[2]	$ 2,104,935,000	$ 1,938,002,000
Liabilities	3,247,257,000	2,909,749,000
Surplus/(Unfunded Liability)	**$ (1,142,322,000)**	**$ (971,747,000)**

Legislative Ratios

	January 1, 2021	January 1, 2020
Funded ratio[3]	1.03	1.04
Solvency ratio	0.87	0.90
Transfer ratio	0.65	0.67

[1] Adjustments include Provision for Adverse Deviation (PfAD), prior year credit balance, and all solvency liability and solvency asset adjustments, where applicable
[2] Net of estimated wind up expenses
[3] Before application of PfAD

Normal Cost

	January 1, 2021	January 1, 2020
Normal cost	$ 89,236,000	$ 81,378,000
Required member contributions	(44,027,000)	(39,855,000)
Provision for non-investment expenses	1,560,000	1,500,000
PfAD	7,223,000	6,611,000
University Normal Cost	**$ 53,992,000**	**$ 49,634,000**
As a % of pensionable earnings	10.30%	9.82%
As a % of member contributions	122.6%	124.5%

Minimum Contribution Requirements

Considering the funding and solvency status of the Plan, the minimum University contributions for the period from January 1, 2021 to December 31, 2023 in accordance with legislative requirements, are as follows:

	January 1, 2021 to December 31, 2021	January 1, 2022 to December 31, 2022	January 1, 2023 to December 31, 2023
Normal cost	$ 89,236,000	$ 91,913,000	$ 94,670,000
Required member contributions[1]	(44,027,000)	(47,749,000)	(49,969,000)
Provision for non-investment expenses	1,560,000	1,607,000	1,655,000
PfAD	7,223,000	7,440,000	7,663,000
University normal cost	$ 53,992,000	$ 53,211,000	$ 54,019,000
Special payments toward amortizing unfunded liability	9,264,000	10,860,000	10,860,000
Adjustments	-	-	-
Minimum Required University Contribution	**$ 63,256,000**	**$ 64,071,000**	**$ 64,879,000**
Additional contribution to bring University contribution to Funding Commitment	2,033,000	3,176,000	4,386,000
Total Required University Contribution under University Funding Commitment[2]	**$ 65,289,000**	**$ 67,247,000**	**$ 69,265,000**
As a % of required member contributions	148.3%	140.8%	138.6%

[1] Reflects increases in required member contributions coming into effect May 1, 2021 and May 1, 2022

[2] The University has committed to maintaining a contribution of 12.45% of pensionable earnings throughout valuation period

Membership Data

	January 1, 2021	January 1, 2020
Active members	4,905	4,891
Disabled members	104	90
Suspended members	1	2
Retired members and beneficiaries	2,176	2,092
Deferred vested members	632	586
Total	**7,818**	**7,661**

Key Assumptions

The principal assumptions to which the valuation results are most sensitive are outlined in the following table.

Going Concern	**January 1, 2021**	**January 1, 2020**
Discount rate	5.30% per year	5.60% per year
Provision for adverse deviation	9.00% of non-indexed liabilities and normal cost	Same
Inflation rate	2.00% per year	Same
Increase in pensionable earnings	3.00% per year for 3 years; 4.00% per year thereafter	4.00% per year
Mortality table	2014 Canadian Pensioners' Public Sector Mortality ("CPM2014Public") Table with mortality improvement Scale MI-2017	Same
Increase in Year's Maximum Pensionable Earnings	2.75% per year	Same
Increase in maximum pension	$3,245.56 in 2021; increased after 2021 at 2.75% per year subject to a dollar cap of $3,400 which increases at 0.92% per year beginning in 2022	Same

Solvency/ Hypothetical Wind Up	**January 1, 2021**	**January 1, 2020**
Discount rate - Solvency	Annuity purchases: 2.50% per year Transfers: 1.20% per year for 10 years, 2.80% per year thereafter	Annuity purchases: 2.96% per year Transfers: 2.50% per year for 10 years, 2.60% per year thereafter
Discount rate – Hypothetical Wind Up (Pre-2014 Accrued Pension)	Annuity purchases: -0.78% per year Transfers: 0.60% per year for 10 years, 0.80% per year thereafter	Annuity purchases: -0.29% per year Transfers: 1.20% per year for 10 years, 1.20% per year thereafter
Discount rate – Hypothetical Wind Up (Post-2013 Accrued Pension)	Annuity purchases: 0.04% per year Transfers: 0.80% per year for 10 years, 1.30% per year thereafter	Annuity purchases: 0.52% per year Transfers: 1.50% per year for 10 years, 1.60% per year thereafter
Mortality table	2014 Canadian Pensioners' Combined Mortality ("CPM2014") Table with mortality improvement Scale CPM-B	Same

Section 1: Introduction

Purpose and Terms of Engagement

We have been engaged by the University of Waterloo (the "University") Pension and Benefits Committee (the "Committee"), to conduct an actuarial valuation of the Plan, registered in Ontario, as at January 1, 2021 for the general purpose of determining the minimum and maximum funding contributions required by pension standards, based on the actuarial assumptions and methods summarized herein. Specifically, the purposes of the valuation are to:

- Determine the financial position of the Plan on a going concern basis as at January 1, 2021;
- Determine the financial position of the Plan as at January 1, 2021 on a solvency and hypothetical wind up basis;
- Determine the funding requirements of the Plan as at January 1, 2021; and
- Provide the necessary actuarial certification required under the *Pension Benefits Act (Ontario)* (the "*Act*") and the *Income Tax Act.*

The results of this report may not be appropriate for accounting purposes or any other purposes not listed above.

The next required valuation will be as at January 1, 2024.

Summary of Changes Since the Last Valuation

The last such actuarial valuation in respect of the Plan was performed as at January 1, 2020. Since the time of the last valuation, we note the following changes have occurred:

- As reported in the January 1, 2020 actuarial valuation, the Plan was amended May 1, 2020 to increase required member contributions and to increase the hard dollar pension cap. The impact of these amendments was included in the January 1, 2020 valuation and continues to be included in this valuation report. In accordance with the amendment, required member contributions will increase as follows over the period covered by this valuation report:

Effective Date	Not in Excess of Year's Maximum Pensionable Earnings (YMPE)	In Excess of YMPE
May 1, 2020	6.95%	9.95%
May 1, 2021	7.40%	10.60%
May 1, 2022	7.80%	11.20%

- The Canadian Institute of Actuaries has amended the Standards of Practice related to pension plans effective December 1, 2020. In particular, the amended Standards of Practice revise the way that commuted values are determined. The changes impact the interest rates and the retirement age assumption used in the determination of commuted values. The changes are included in this valuation report.

University Information and Inputs

In order to prepare our valuation, we have relied upon the following information:

- A copy of the previous valuation report as at January 1, 2020;
- A copy of the Statement of Investment Policies and Procedures for the Plan;
- Membership data compiled as at January 1, 2021 by the University;
- Asset data taken from the Plan's unaudited and audited financial statements ; and
- A copy of the latest Plan text and amendments up to and including January 1, 2021.

Furthermore, our actuarial assumptions and methods have been chosen to reflect our understanding of the University's desired funding objectives with due respect to accepted actuarial practice and regulatory constraints.

Subsequent Events

As of the date of this report, we have not been made aware of any subsequent events which would have an effect on the results of this valuation. However, the following points should be noted in this regard:

- Actual experience deviating from expected after January 1, 2021 will result in gains or losses which will be reflected in the next actuarial valuation report.
- To the best of our knowledge, the results contained in this report are based on the regulatory and legal environment in effect at the date of this report and do not take into consideration any potential changes that may be currently under review. To the extent that actual changes in the regulatory and legal environment transpire, any financial impact on the Plan as a result of such changes will be reflected in future valuations.

Section 2: Going Concern Valuation Results

Going Concern Financial Position of the Plan

The going concern valuation provides an assessment of the Plan's financial position at the valuation date on the premise that the Plan continues on into the future indefinitely.

The selection of the applicable actuarial assumptions and methods reflect the Plan's funding objectives, as communicated by the University, actuarial standards of practice, and pension standards.

On the basis of the Plan provisions, membership data, going concern assumptions and methods, and asset information described in the Appendices, the going concern financial position of the Plan as at January 1, 2021 is shown in the following table. The results as at January 1, 2020 are also shown for comparison purposes.

Going Concern Financial Position

	January 1, 2021	January 1, 2020
Actuarial Value of Assets	**$ 2,105,435,000**	**$ 1,938,502,000**
Going Concern Liabilities		
Active members	$ 1,117,509,000	$ 1,014,559,000
Disabled and suspended members	24,076,000	17,412,000
Retired members and beneficiaries	840,980,000	779,799,000
Deferred vested members	46,683,000	40,261,000
Additional voluntary contribution balances	413,000	491,000
Member flex contributions	811,000	967,000
Cost of living increase effective May 1st	6,051,000	15,218,000
Total Liabilities	**$ 2,036,523,000**	**$ 1,868,707,000**
Going Concern Position	**$ 68,912,000**	**$ 69,795,000**
Additional liabilities due to PfAD	158,269,000	145,837,000
Prior year credit balance	-	-
Surplus/(Unfunded Liability)	**$ (89,357,000)**	**$ (76,042,000)**
Funded Ratio (Before PfAD)	**1.03**	**1.04**
Funded Ratio (After PfAD)	**0.96**	**0.96**

The PfAD is not required to be applied to the liabilities in respect of post retirement indexation of $277,978,000 as at January 1, 2021 and $248,299,000 as at January 1, 2020.

Going Concern Normal Cost

On the basis of the Plan provisions, membership data, going concern assumptions and methods, asset information and legislative requirement described in the Appendices, the going concern normal cost of the Plan as at January 1, 2021 is shown in the following table. The normal cost as at January 1, 2020 is also shown for comparison purposes.

	January 1, 2021	January 1, 2020
Normal Cost		
Normal cost	$ 89,236,000	$ 81,378,000
Provision for non-investment expenses	1,560,000	1,500,000
Additional normal cost due to PfAD	7,223,000	6,611,000
Total Normal Cost	**$ 98,019,000**	**$ 89,489,000**
Required member contributions	(44,027,000)	(39,855,000)
University Normal Cost	**$ 53,992,000**	**$ 49,634,000**
Total pensionable earnings (in year following valuation date)	$ 524,407,000	$ 505,660,000
University Normal Cost		
As a % of total pensionable earnings	10.30%	9.82%
As a % of member contributions	122.6%	124.5%

The PfAD is not required to be applied to the normal cost in respect of post retirement indexation of $10,551,000 as at January 1, 2021 and $9,426,000 as at January 1, 2020.

Change in Financial Position

The major components of the change in the Surplus/(Unfunded Liability)[1] for the period from January 1, 2020 to January 1, 2021 are summarized in the following table.

	January 1, 2020 to January 1, 2021
Surplus/(Unfunded Liability) as at Beginning of Plan Year	**$ (76,042,000)**
Total normal cost in inter-valuation period	(87,989,000)
Member contributions in inter-valuation period	39,033,000
University contributions in inter-valuation period	61,791,000
Expected interest on surplus (unfunded liability)	(3,904,000)
Surplus/(Unfunded Liability) as at End of Plan Year	**$ (67,111,000)**
Change in Liabilities Due to Experience Gains/(Losses)	
Return on investment earnings greater/lower than expected	34,329,000
Increase in salaries	2,870,000
Increase in ITA maximum pension	(3,190,000)
Increase in YMPE	1,894,000
Indexation experience	10,463,000
Retirement experience	5,006,000
Mortality experience	(2,386,000)
Termination experience	(2,859,000)
Data adjustments / article 12 transfers	(197,000)
Additional year of deferred COLA	(594,000)
Net gain/(loss) due to other experience and miscellaneous items	1,608,000
Going Concern Position After Experience Gains/(Losses) as at End of Plan year	**$ (20,167,000)**
Change in discount rate	(89,363,000)
Change in salary increase rate	20,173,000
Surplus/(Unfunded Liability) as at End of Plan Year	**$ (89,357,000)**

[1] Prior to the application of the Prior Year Credit Balance

Discussion of Changes in Assumptions

Economic Assumptions

- The following economic assumptions were changed effective January 1, 2021:
  - Discount rate was changed from 5.60% per year to 5.30% per year; and
  - Salary increase rate was changed from 4.00% per year to 3.00% per year for the first three years and 4.00% per year thereafter.

These changes in economic assumptions increased the going concern liabilities by $69,190,000 and the University normal cost by $4,927,000.

Going Concern Valuation Sensitivity Results

In accordance with the CIA Standards of Practice specific to pension plans, the table below presents the sensitivity of the going concern liabilities and the total normal cost (prior to the application of the Provision for Adverse Deviation) of using a discount rate 1% lower and 1% higher than that used for the going concern valuation.

		Effect	
January 1, 2021		**$**	**%**
Going concern liabilities	$ 2,036,523,000		
Going concern liabilities (discount rate – 1%)	$ 2,365,454,000	$ 328,931,000	16.2%
Going concern liabilities (discount rate + 1%)	$ 1,776,033,000	$ (260,490,000)	(12.8)%
Normal cost	$ 89,236,000		
Normal cost (discount rate – 1%)	$ 111,900,000	$ 22,664,000	25.4%
Normal cost (discount rate + 1%)	$ 72,424,000	$ (16,812,000)	(18.8)%

Plausible Adverse Scenarios

In accordance with the Canadian Institute of Actuaries Standards of Practice specific to pension plans, below is summarized scenarios of adverse but plausible assumptions, relative to the best estimate assumptions otherwise selected for the valuation.

Interest Rate Sensitivity

The table below presents the sensitivity of the going concern position and the total normal cost of using interest rates 1% lower than the current level. In order to calculate the impact on the Actuarial Value of Assets, the decrease in interest rates only impacts fixed income assets (35.0% of total assets) and an assumed duration of 8.48 for overall domestic bond index was considered.

	Base Scenario	Adverse Scenario	Impact ($)
Actuarial value of assets	$ 2,105,435,000	$ 2,167,993,000	$ 62,558,000
Going concern liabilities	2,036,523,000	2,365,454,000	328,931,000
Going concern position	$ 68,912,000	$ (197,461,000)	$ (266,373,000)
Additional liabilities due to PfAD	158,269,000	181,965,000	23,696,000
Surplus/(Unfunded Liability)	**$ (89,357,000)**	**$ (379,426,000)**	**$ (290,069,000)**
Total Normal Cost (including PfAD)			
January 1, 2021 to December 31, 2021	$ 98,019,000	$ 122,383,000	$ 24,364,000

Deterioration in Asset Value

Considering that the asset allocation as of December 31, 2020 is 4.0% cash, 35.0% fixed income, and 61.0% non-fixed income, for the deterioration in asset value we estimate that the adverse scenario is related to a 20% reduction in the non-fixed income asset values and assume no change in future return expectations.

The table below presents the sensitivity of the going concern position of using the assets with a 20% reduction in non-fixed income asset values.

	Base Scenario	Adverse Scenario	Impact ($)
Actuarial value of assets	$ 2,105,435,000	$ 1,848,030,000	$ (257,405,000)
Going concern liabilities	2,036,523,000	2,036,523,000	-
Going concern position	$ 68,912,000	$ (188,493,000)	$ (257,405,000)
Additional liabilities due to PfAD	158,269,000	158,269,000	-
Surplus/(Unfunded Liability)	**$ (89,357,000)**	**$ (346,762,000)**	**$ (257,405,000)**
Total Normal Cost (including PfAD)			
January 1, 2021 to December 31, 2021	$ 98,019,000	$ 98,019,000	$ -

Mortality Sensitivity

The table below presents the sensitivity of the going concern position and the total normal cost of using a mortality assumption with a 10% improvement to the base mortality rates rather than that used for the going concern valuation, thereby 90% of 2014 Canadian Pensioners Public Sector Mortality Table with improvements under Scale MI-2017.

	Base Scenario	Adverse Scenario	Impact ($)
Actuarial value of assets	$ 2,105,435,000	$ 2,105,435,000	$ -
Going concern liabilities	2,036,523,000	2,083,172,000	46,649,000
Going concern position	$ 68,912,000	$ 22,263,000	$ (46,649,000)
Additional liabilities due to PfAD	158,269,000	161,220,000	2,951,000
Surplus/(Unfunded Liability)	**$ (89,357,000)**	**$ (138,957,000)**	**$ (49,600,000)**
Total Normal Cost (including PfAD)			
January 1, 2021 to December 31, 2021	$ 98,019,000	$ 99,514,000	$ 1,495,000

Section 3: Solvency Valuation Results

Solvency Financial Position of the Plan

The solvency valuation is a financial assessment of the Plan that is required by the *Act* and is performed in accordance with requirements prescribed by that legislation. It is intended to provide an assessment of the Plan's financial position at the valuation date on the premise that certain obligations as prescribed by the *Act* are settled on the valuation date for all members. The liabilities must be calculated based on a postulated scenario that maximizes liabilities on wind up of the Plan. Contingent benefits are included in the liabilities that would be payable under the postulated scenario, unless permitted to be omitted under the definition of solvency liabilities under the Regulations to the *Act.* All assumptions for the solvency valuation are listed in Appendix D.

On the basis of the Plan provisions, membership data, solvency assumptions and methods and asset information described in the Appendices, as well as the requirements of the *Act*, the solvency financial position of the Plan as at January 1, 2021 is shown in the following table. The solvency financial position of the Plan as at January 1, 2020 is shown for comparison purposes.

Solvency Financial Position

	January 1, 2021	January 1, 2020
Assets		
Solvency assets	$ 2,105,435,000	$ 1,938,502,000
Estimated wind up expenses	(500,000)	(500,000)
Total Assets	**$ 2,104,935,000**	**$ 1,938,002,000**
Solvency Liabilities		
Active members	$ 1,413,850,000	$ 1,235,747,000
Disabled and suspended members	32,542,000	23,248,000
Retired members and beneficiaries	911,935,000	831,844,000
Deferred vested members	64,138,000	53,740,000
Additional voluntary contribution balances	413,000	491,000
Member flex contributions	811,000	967,000
Total Liabilities	**$ 2,423,689,000**	**$ 2,146,037,000**
Solvency Position	**$ (318,754,000)**	**$ (208,035,000)**
Prior year credit balance	-	-
Present value of special payments	59,453,000	50,680,000
Solvency Surplus/(Deficiency)	**$ (259,301,000)**	**$ (157,355,000)**
Solvency Ratio[1]	**0.87**	**0.90**

[1] Solvency Assets divided by Solvency Liabilities

Solvency Asset Adjustment

The present value of scheduled special payments for solvency valuation purposes has been calculated by discounting the annual special payments to be remitted up to the end of their amortization period (to a maximum of six years, at the weighted solvency discount rate of 2.20% per year compounded monthly in arrears, which was determined proportionately by the solvency discount rates used to determine the solvency liabilities.

Nature of Deficiency	Effective Date	End Date	Months Included	Annual Special Payment	Present Value as of January 1, 2021
Going concern	January 1, 2021	December 31, 2021	12	$ 9,264,000	$ 9,156,000
Going concern	January 1, 2022	December 31, 2031	60	10,860,000	50,297,000
Present Value of Special Payments					**$ 59,453,000**

Statutory Solvency Financial Position

The minimum funding requirements under the Regulation are based on the statutory solvency financial position as at the valuation date. In calculating the statutory solvency financial position, various adjustments can be made including solvency funding of a reduced solvency deficiency effective for valuations filed after December 31, 2017. The reduced solvency deficiency is based upon 0.85 of the solvency liabilities and 0.85 of the solvency liability adjustment.

	January 1, 2021	January 1, 2020
The amount by which the sum of:		
85% of solvency liabilities	$ 2,060,136,000	$ 1,824,131,000
85% of solvency liability adjustment	0	0
Prior year credit balance	0	0
	$ 2,060,136,000	$ 1,824,131,000
Exceeds the sum of:		
Solvency assets net of wind-up expenses	$ 2,104,935,000	$ 1,938,002,000
Solvency asset adjustment	59,453,000	50,680,000
	$ 2,164,388,000	$ 1,988,682,000
Reduced Solvency Deficiency	**$ Nil**	**$ Nil**

Solvency Concerns

A report indicates solvency concerns under the *Act* if the ratio of the solvency assets to solvency liabilities is less than 0.85.

Where a report indicates solvency concerns, the effective date of the next valuation that needs to be filed under the *Act* is one year from the valuation date of the valuation that gave rise to the solvency concerns.

Since the ratio of solvency assets to solvency liabilities is equal to 0.87, this report does not indicate solvency concerns.

Solvency Valuation Sensitivity Results

In accordance with the CIA Standards of Practice specific to pension plans, the table below presents the sensitivity of the solvency liabilities to using a discount rate of 1% lower and 1% higher than that used for the solvency valuation.

		Effect	
January 1, 2021		**$**	**%**
Solvency liabilities	$ 2,423,689,000		
Solvency liabilities (discount rate – 1%)	$ 2,843,322,000	$ 419,633,000	17.3%
Solvency liabilities (discount rate + 1%)	$ 2,102,316,000	$ (321,373,000)	(13.3)%

Incremental Cost on a Solvency Basis

The incremental cost on a solvency basis represents the present value at January 1, 2021 of the expected aggregate change in the solvency liabilities between January 1, 2021 and the next calculation date, that is January 1, 2024. Appendix D gives more details on the calculation methodology and on assumptions.

Based on this methodology and on these assumptions, the incremental cost on a solvency basis can be found in the following table.

	January 1, 2021 to December 31, 2021	**January 1, 2022 to December 31, 2022**	**January 1, 2023 to December 31, 2023**
Incremental cost on a solvency basis	$ 135,129,000	$ 151,811,000	$ 149,490,000

Pension Benefits Guarantee Fund ("PBGF")

The development of the PBGF Assessment Base is as follows:

PBGF Assessment Base	**January 1, 2021**
(1) Solvency assets	$ 2,105,435,000
(2) PBGF liabilities	$ 2,423,689,000
(3) Solvency liabilities	$ 2,423,689,000
(4) Ontario asset ratio: [(2) divided by (3)]	1.0000
(5) Ontario portion of fund: [(1) multiplied by the ratio in (4)]	$ 2,105,435,000
PBGF Assessment Base: [(2) subtract (5); if negative, enter zero]	**$ 318,254,000**

Section 4: Hypothetical Wind Up Valuation Results

Hypothetical Wind Up Financial Position of the Plan

A hypothetical wind up valuation is performed to determine the financial position of the Plan as at the valuation date on a wind up basis, reflecting market settlement rates as of the valuation date. Unlike the solvency valuation, all benefits are included that would be payable under the postulated scenario that would maximize benefits. The hypothetical wind up valuation is determined using benefit entitlements on the assumption that the Plan has neither a surplus nor a deficit. Contingent benefits are included in the liabilities that would be payable under the postulated scenario. Assets are set equal to market value net of estimated wind up expenses. All assumptions for the hypothetical wind up valuation are listed in Appendix D.

On the basis of Plan provisions, membership data, hypothetical wind up assumptions and methods, and asset information described in the Appendices, as well as the requirements of the *Act*, the hypothetical wind up financial position of the Plan as at January 1, 2021 is shown in the following table. The hypothetical wind up financial position of the Plan as at January 1, 2020 is shown for comparison purposes.

Hypothetical Wind Up Financial Position

	January 1, 2021	January 1, 2020
Assets		
Hypothetical wind up assets	$ 2,105,435,000	$ 1,938,502,000
Estimated wind up expenses	(500,000)	(500,000)
Total Assets	**$ 2,104,935,000**	**$ 1,938,002,000**
Hypothetical Wind Up Liabilities		
Active members	$ 1,836,115,000	$ 1,651,387,000
Disabled and suspended members	42,911,000	32,039,000
Retired members and beneficiaries	1,245,784,000	1,124,826,000
Deferred vested members	121,223,000	100,039,000
Additional voluntary contribution balances	413,000	491,000
Member flex contributions	811,000	967,000
Total Liabilities	**$ 3,247,257,000**	**$ 2,909,749,000**
Hypothetical Wind Up Surplus/(Deficiency)	**$ (1,142,322,000)**	**$ (971,747,000)**

Transfer Ratio

The transfer ratio is determined as follows:

			January 1, 2021	January 1, 2020
(1)	Hypothetical wind up assets		$ 2,105,435,000	$ 1,938,502,000
	Prior year credit balance	(A)	$ -	$ -
	Total University normal cost and required special payments until next mandated valuation	(B)	$ 192,206,000	$ 174,061,000
(2)	Asset adjustment	Lesser of (A) and (B)	$ -	$ -
(3)	Hypothetical wind up liabilities		$ 3,247,257,000	$ 2,909,749,000
Transfer Ratio [(1)-(2)] / (3)			**0.65**	**0.67**

Section 5: Contribution Requirements

Contribution Requirements in Respect of the Normal Cost

The annual going concern cost of benefits in respect of service accruing after the valuation date is known as the normal cost. The following table sets out:

- The development of the rule to determine the normal cost;
- An estimate of the normal cost for the 3 years following the valuation date; and
- The portion of the going concern normal cost that is to be paid by the members.

	January 1, 2021 to December 31, 2021	January 1, 2022 to December 31, 2022	January 1, 2023 to December 31, 2023
Normal Cost			
Normal cost	$ 89,236,000	$ 91,913,000	$ 94,670,000
Required member contributions	(44,027,000)	(47,749,000)	(49,969,000)
Provision for non-investment expenses	1,560,000	1,607,000	1,655,000
Additional normal cost due to PfAD	7,223,000	7,440,000	7,663,000
University Normal Cost	**$ 53,992,000**	**$ 53,211,000**	**$ 54,019,000**
Total pensionable earnings	$ 524,407,000	$ 540,139,000	$ 556,343,000
University Normal Cost			
As a % of pensionable earnings	10.30%	9.85%	9.71%
As a % of member contributions	122.63%	111.44%	108.11%

In the event an updated funding range in accordance with legislative requirements is not certified before January 1, 2024, the rule for determining the University normal cost contributions outlined in the above table will continue to be appropriate for the plan year commencing on the next valuation date of January 1, 2024. Adjustment to the University contributions may be required once the next actuarial funding range in accordance with legislative requirements is certified.

Development of Special Payments

The following table summarizes previously established amortization schedules of special payments before adjustment to reflect any gains or losses due to the going concern and solvency valuation results.

Nature of Deficiency	Effective Date	End Date	Annual Special Payment
Going concern	January 1, 2021	December 31, 2030	$ 9,264,000
			$ 9,264,000

The following table summarizes the amortization schedules of special payments after adjustment to reflect any gains or losses due to the going concern and solvency valuation results. In accordance with Regulation, the University has decided to defer all new going concern and solvency special payments established as at January 1, 2021 by 12 months. The following table summarizes the amortization schedules of special payments after the aforementioned adjustments.

				Present Value as of January 1, 2021	
Nature of Deficiency	Effective Date	Revised End Date	Revised Annual Special Payment	For Going Concern Valuation[1]	For Solvency Valuation[2]
Going concern	January 1, 2021	December 31, 2021	$ 9,264,000	$ 9,009,000	$ 9,156,000
Going concern	January 1, 2022	December 31, 2031	10,860,000	80,348,000	50,297,000
				$ 89,357,000	**$ 59,453,000**

[1] The values in the table were developed using the going concern discount rate compounded monthly in arrears.
[2] The values in the table were developed using the weighted average solvency discount rate compounded monthly in arrears.

Prior Year Credit Balance ("PYCB")

The Plan has no PYCB as at January 1, 2021.

Available Actuarial Surplus

As at January 1, 2021 the Available Actuarial Surplus is calculated as follows:

Going Concern Basis		
(A)	Total assets	$ 2,105,435,000
(B)	Total liabilities	2,036,523,000
(C)	Additional liabilities due to PfAD	158,269,000
(D)	Prior year credit balance	-
(E)	**Available Surplus: Maximum (A – B – C – D); 0)**	**$ -**
Hypothetical Wind-Up Basis		
(F)	**Assets In Excess of a Transfer Ratio of 105%**	**$ -**
(G)	**Available Actuarial Surplus: Minimum (E; F)**	**$ -**

Excess Surplus

The *Income Tax Act* requires that any excess surplus first be applied to reduce or eliminate the University contribution requirements. Excess surplus is defined in Section 147.2(2)(d) of the *Income Tax Act*, as the portion of surplus (if any) that exceeds 25% of the going concern liabilities.

As of the valuation date there is no excess surplus.

Development of Minimum Required University Contribution

The table below presents the development of the minimum required University contribution for each of the plan years covered by this report.

While we have shown a fixed University normal cost in the table below, the University may actually fund the normal cost as a percentage of member contributions.

	January 1, 2021 to December 31, 2021	**January 1, 2022 to December 31, 2022**	**January 1, 2023 to December 31, 2023**
University normal cost	$ 53,992,000	$ 53,211,000	$ 54,019,000
Special payments toward amortizing unfunded liability	9,264,000	10,860,000	10,860,000
Special payments toward amortizing solvency deficiency	-	-	-
Required application of excess surplus	-	-	-
Permitted application of available actuarial surplus	-	-	-
Minimum Required University Contribution	**$ 63,256,000**	**$ 64,071,000**	**$ 64,879,000**
Additional contribution to bring University contribution to Funding Commitment	2,033,000	3,176,000	4,386,000
Minimum Required University Contribution	**$ 65,289,000**	**$ 67,247,000**	**$ 69,265,000**
As a % of required member contributions	148.3%	140.8%	138.6%
As a % of pensionable earnings	12.45%	12.45%	12.45%

Development of Maximum Eligible University Contribution

The table below presents the development of the maximum eligible University contribution for each of the plan years covered by this report.

The maximum eligible University contribution presented in the table below for a given plan year is calculated assuming that the University makes the maximum eligible University contribution in the first plan year covered by this report.

While we have shown a fixed University normal cost in the table below, the University may actually fund the normal cost as a percentage of required member contributions.

	January 1, 2021 to December 31, 2021	January 1, 2021 to December 31, 2021	January 1, 2021 to December 31, 2021
University normal cost	$ 53,992,000	$ 53,211,000	$ 54,019,000
Greater of the Unfunded liability and the hypothetical wind up deficiency/Solvency deficiency	1,142,322,000	-	-
Required application of excess surplus	-	-	-
Maximum Eligible University Contribution	**$ 1,196,314,000**	**$ 53,211,000**	**$ 54,019,000**

If the University wishes to make the maximum eligible University contribution, it is advisable to contact the Plan's actuary before making such contribution to ensure that the contribution will be permissible and eligible and that any regulatory requirements are considered.

Section 6: Actuarial Certificate

Actuarial Opinion, Advice and Certification for the University of Waterloo Pension Plan

Canada Revenue Agency Registration Number: 0310565

Opinion

This actuarial certification forms an integral part of the actuarial valuation report for the Plan as at January 1, 2021. We confirm that we have prepared an actuarial valuation of the Plan as at January 1, 2021 for the purposes outlined in the Introduction section to this report and consequently:

Our advice on funding is the following:

- The University should contribute the amounts within the range of minimum and maximum contribution amounts as outlined in Section 5 of this report, in accordance with legislative requirements.
- The next actuarial valuation for the purpose of developing funding requirements should be performed no later than as at January 1, 2024.

We hereby certify that, in our opinion:

- The contribution range as outlined in this report is expected to be sufficient to satisfy the Plan's funding requirements.
- The University contribution range outlined in this report qualifies as eligible contributions under Section 147.2(2) of the *Income Tax Act.*
- The pre-1990 maximum pension restrictions in Subsection 8504(6) of the Regulations to the *Income Tax Act* do not apply to any members of the Plan.
- For the purposes of the valuation:
  - The data on which this valuation is based are sufficient and reliable;
  - The assumptions used are appropriate; and
  - The actuarial cost methods and the asset valuation methods used are appropriate.
- This report and its associated work have been prepared, and our opinion given, in accordance with accepted actuarial practice in Canada and in compliance with the requirements outlined in subparagraphs 147.2(2)(a)(iii) and (iv) of the *Income Tax Act*.

- Notwithstanding the above certifications, emerging experience differing from the assumptions will result in gains or losses that will be revealed in subsequent valuations.

Linda M. Byron, FCIA, FSA
Senior Partner

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June 2021

Appendix A: Assets

Asset Data

The Plan's assets are held by CIBC Mellon. The asset information presented in this report is based on the financial statements of the pension fund prepared by CIBC Mellon and statements audited by Ernst & Young.

Tests of the sufficiency and reliability of the asset data were performed and the results were satisfactory. The tests included:

- A reconciliation of actual cash flow with expected cash flow from the previous actuarial report; and
- A reconciliation of any anticipated benefit payments (for retirees, terminated, or deceased members) against the financial statements of the pension fund for confirmation of payments.

Market Value of Assets

The following is a summary of the composition of the Plan's assets by asset type as reported by CIBC Mellon as at January 1, 2021. For comparison purposes, the composition at the previous valuation date of January 1, 2020 is also shown.

	January 1, 2021	**January 1, 2020**
Canadian equities	7.2%	5.9%
Global equities	45.2%	39.0%
Fixed-income	35.0%	35.2%
Cash	4.0%	10.9%
Real estate	2.7%	3.4%
Infrastructure	5.9%	5.6%
Total Invested Assets	**100.0%**	**100.0%**

Target Asset Mix

The target asset mix of the Plan is contained in the Plan's Statement of Investment Policies and Procedures and is as follows:

	Target
Canadian equities	15.0%
Global equities	40.0%
Fixed-income	33.0%
Cash	2.0%
Real estate	5.0%
Infrastructure	5.0%
	100.0%

Reconciliation of Changes in Market Value of Assets

The table below reconciles changes in the market value of assets between January 1, 2020 and January 1, 2021.

		January 1, 2020 to December 31, 2020
Market Value of Assets, Beginning of Plan Year	**$**	**1,940,803,000**
Contributions During Plan Year		
Member	$	39,033,000
University normal cost		49,634,000
University special payments		8,772,000
University transfer deficiency payments		3,384,000
University ongoing expenses		-
Interest on contributions		-
Total	**$**	**100,823,000**
Benefit Payments During Plan Year		
Non-retired members[1]	$	8,261,000
Retired members		67,808,000
Total	**$**	**76,069,000**
Transfers During Plan Year		
Into plan	$	222,000
Out of plan		-
Total	**$**	**222,000**
Fees/Expenses		
Investment fees/expenses	$	3,003,000
Non-investment fees/expenses		2,393,000
Total	**$**	**5,396,000**
Investment Income	**$**	**147,835,000**
Market Value of Assets, End of Plan Year	**$**	**2,108,218,000**
Rate of Return, Net of Fees/Expenses		**7.29%**

[1] Includes members who have terminated employment or died

Development of Adjusted Market Value of Assets

The adjusted market value of assets is equal to the market value of assets adjusted to reflect any contributions, benefit payments, transfers and fees/expenses in-transit as of the valuation date. The development of the adjusted market value of assets is shown below.

	January 1, 2020	January 1, 2021
Market Value of Assets	**$ 1,940,803,000**	**$ 2,108,218,000**
Contributions receivable	-	-
Benefits payable	(223,000)	(1,531,000)
Transfers (payable)/receivable	-	-
Fees/expenses payable	(2,078,000)	(1,252,000)
Adjusted Market Value of Assets	**$ 1,938,502,000**	**$ 2,105,435,000**[1]

Development of Actuarial Value of Assets

The actuarial value of assets is equal to the adjusted market value of assets.

[1] Calculated as $2,105,706,000 as per audited statements, less $271,000 of in-transit benefit payments that for valuation purposes are excluded from the liabilities

Appendix B: Membership Data

Source of Data

This valuation was based on member data provided by the University as of January 1, 2021. Tests of the sufficiency and reliability of the member data were performed and the results were satisfactory. The tests included:

- A reconciliation of membership status against the membership status at the last valuation. This test was performed to ensure that all members were accounted for. A summary of this reconciliation follows on the next page;
- A reconciliation of birth, hire, and participation dates against the corresponding dates provided for the last valuation to ensure consistency of data;
- A reconciliation of credited service against the corresponding amount provided for the last valuation to ensure that no member accrued more than 1 year of credited service from January 1, 2020. This test also revealed any members who accrued less than 1 year of credited service;
- A reconciliation of pensionable earnings against the corresponding amounts provided for the last valuation to identify any unusual increases or decreases;
- A reconciliation of accrued benefits against the corresponding amounts provided for the last valuation to identify any unusual benefit accruals;
- A reconciliation of any stated benefit payments since January 1, 2020 (for retired, terminated, or deceased members) against the financial statements of the pension fund for confirmation of the payments; and
- A reconciliation of inactive member benefit amounts against the corresponding amounts provided for the last valuation to ensure consistency of data.

There was no information missing from the data, so no assumptions were required with respect to such data.

A copy of the administrator certification certifying the accuracy and completeness of the member data (and the Plan provisions summarized in this report) is included in Appendix F of this report.

Membership Summary

The table below reconciles the number of members as of January 1, 2021 with the number of members as of January 1, 2020 and the changes due to experience in the period.

	Active	Disabled	Suspended	Retired and Beneficiaries	Deferred Vested	MMO Deferred	Total
Members, January 1, 2020	**4,891**	**90**	**2**	**2,092**	**584**	**2**	**7,661**
Changes due to:							
New entrants	342	-	-	-	-	-	342
Termination							
Non-vested	-		-	-	-	-	-
Deferred vested	(82)	(1)	-	(1)	84	-	-
Lump sum	(102)	(2)		-	(26)	-	(130)
Death							
No further benefits	(6)	(1)	-	(47)		-	(54)
Remaining guarantee	-	-	-	-	-	-	-
Surviving beneficiary	(2)	(1)	-	(17)	-	-	(20)
New beneficiary	-	-	-	20	-	-	20
Retirement	(115)	(4)	-	130	(11)		-
Disability	(32)	32	-	-	-	-	-
Return from Disability	9	(9)	-	-	-	-	-
Transfer to Suspended	-	-	-	-	-	-	-
Re-Entry into Plan	2		(1)	-	(1)	-	-
New Certain Only beneficiary							
Certain Only Payments Ceased				(1)			(1)
Data correction	-	-	-	-	-	-	-
Net change	14	14	(1)	84	46		157
Members, January 1, 2021	**4,905**	**104**	**1**	**2,176**	**630**	**2**	**7,818**

Active and Transferred Members

	January 1, 2021	January 1, 2020
Number	4,905	4,891
Average age	47.1	46.8
Average Credited Service	10.2	9.9
Average Pensionable Earnings	$ 105,460	$ 102,157
Proportion female	52.3%	52.6%

Disabled Members

	January 1, 2021	January 1, 2020
Number	104	90
Average age	55.5	55.4
Average Credited Service	17.7	16.9
Average Pensionable Earnings	$ 68,518	$ 66,791
Proportion female	73.1%	73.3%

Suspended Members

	January 1, 2021	January 1, 2020
Number	1	2
Average age	33.9	34.4
Average Credited Service	3.1	3.0

Deferred Vested Members - Eligible for COLA on All Service

	January 1, 2021	January 1, 2020
Number	321	305
Average age	58.5	57.8
Average Annual Pension	$ 8,651	$ 8,056
Total Annual Pension	$ 2,776,970	$ 2,457,031

Deferred Vested Members - Eligible for COLA on Pre-2008 Service

	January 1, 2021	January 1, 2020
Number	105	115
Average age	46.9	46.9
Average Annual Pension	$ 9,078	$ 9,575
Total Annual Pension	$ 953,149	$ 1,101,035

Deferred Vested Members - Not Eligible for COLA

	January 1, 2021	January 1, 2020
Number	204	164
Average age	41.4	40.4
Average Annual Pension	$ 4,073	$ 4,262
Total Annual Pension	$ 830,922	$ 699,034

Retired Members and beneficiaries

	January 1, 2021	January 1, 2020
Number	2,176	2,092
Average age	74.7	74.6
Average Annual Pension	$ 32,149	$ 31,643
Total Annual Pension	$ 69,955,961	$ 66,196,903

Active/Disabled Membership Distribution

The following table provides a detailed summary of the active/disabled membership at the valuation date by years of credited service and by age group. For privacy reasons, average pensionable earnings is not shown for groups with two or less members.

Age	< 5	5–10	10–15	15–20	20–25	25–30	>=30	Total
< 30	239	9						248
	$ 60,235	$ 72,208	$	$	$	$	$	$ 60,670
30–35	373	135	6					514
	$ 75,759	$ 77,410	$ 82,273	$	$	$	$	$ 76,269
35–40	425	221	78	5				729
	$ 82,192	$ 96,524	$ 85,681	$ 75,593	$	$	$	$ 86,865
40–45	258	280	115	54	7			714
	$ 81,450	$ 106,856	$ 119,551	$ 109,149	$ 79,843	$	$	$ 99,629
45–50	172	174	172	125	50	1		694
	$ 81,766	$ 100,420	$ 128,708	$ 138,454	$ 105,884	$ *	$	$ 110,006
50–55	126	143	116	143	97	17	2	644
	$ 85,011	$ 97,405	$ 110,336	$ 125,281	$ 126,287	$ 95,387	$ 88,807	$ 107,769
55–60	111	106	91	155	203	53	17	736
	$ 84,757	$ 94,561	$ 102,160	$ 115,886	$ 122,621	$ 126,041	$ 99,094	$ 108,624
60–65	51	69	90	74	84	154	43	565
	$ 93,827	$ 90,488	$ 120,724	$ 113,069	$ 130,357	$ 124,732	$ 145,278	$ 117,994
>=65	15	20	16	22	27	14	52	166
	$ 86,385	$ 131,254	$ 108,313	$ 126,015	$ 128,515	$ 144,188	$ 182,058	$ 140,854
Total								
Count	**1,770**	**1,157**	**684**	**578**	**468**	**239**	**114**	**5,010**
Average 2020 Pensionable Earnings	**$ 78,454**	**$ 97,360**	**$ 113,679**	**$ 122,138**	**$ 122,681**	**$ 123,840**	**$ 154,177**	**$ 100,689**

Deferred Vested/Retired Membership Distribution

The following table provides a detailed summary of the deferred vested/retired membership at the valuation date by age group. For privacy reasons, average pensions are not shown for groups with two or less members.

Age			Deferred Vested Members		Retired Members and Beneficiaries
< 50	Count		299		
	Average Monthly Lifetime Pension	$	397		
50–55	Count		99		1
	Average Monthly Lifetime Pension	$	786	$	*
55–60	Count		100		29
	Average Monthly Lifetime Pension	$	812	$	1,465
60–65	Count		90		181
	Average Monthly Lifetime Pension	$	989	$	2,129
65[1]–70	Count		21		494
	Average Monthly Lifetime Pension	$	408	$	2,265
70–75	Count		14		515
	Average Monthly Lifetime Pension	$	287	$	2,934
75–80	Count		4		410
	Average Monthly Lifetime Pension	$	103	$	3,152
>=80	Count		3		541
	Average Monthly Lifetime Pension	$	105	$	2,712
Total					
Count			**630**		**2,176**
Average Monthly Lifetime Pension		**$**	**603**	**$**	**2,679**

[1] Includes all deferred vested members over age 65

Appendix C: Going Concern Assumptions and Methods

Assumptions and Methods

A member's entitlements under a pension plan are generally funded during the period over which service is accrued by the member. The cost of each member's benefits is allocated in some fashion over the member's service. An actuarial valuation provides an assessment of the extent to which allocations relating to periods prior to a valuation date (often referred to as the actuarial liabilities) are covered by the plan's assets.

The going concern valuation provides an assessment of a pension plan on the premise that the plan continues on into the future indefinitely based on assumptions in respect of future events upon which a plan's benefits are contingent and methods that effectively determine the way in which a plan's costs will be allocated over the members' service. The true cost of a plan, however, will emerge only as experience develops, investment earnings are received, and benefit payments are made.

This appendix summarizes the going concern assumptions and methods that have been used for the going concern valuation of the Plan at the valuation date. The going concern assumptions and methods have been chosen to reflect our understanding of the Plan's funding objectives with due respect to accepted actuarial practice and regulatory constraints. For purposes of this valuation, the going concern methods and assumptions were reviewed and changes as indicated were made.

The actuarial assumptions and methods used in the current and previous valuations are summarized below and described on the following pages.

	January 1, 2021	January 1, 2020
Economic Assumptions		
Discount rate	5.30% per year	5.60% per year
Inflation rate	2.00% per year	Same
Post-retirement indexation		
Pre-2014 accrued pensions	2.00% per year	Same
Post-2013 accrued pensions	1.50% per year	Same
Increases in pensionable earnings		
Active members	3.00% per year for 3 years; 4.00% per year thereafter	4.00% per year
Disabled members	2.00% per year	Same
Increases in year's maximum pensionable earnings (“YMPE”)	2.75% per year	Same
Increases in maximum pension limit	\$3,245.56 in 2021; increased after 2021 at 2.75% per year subject to a dollar cap of \$3,400 which increases at 0.92% per year beginning in 2022	\$3,092.22 in 2020; increased after 2020 at 2.75% per year subject to a dollar cap of \$3,400 which increases at 0.92% per year beginning in 2022
Interest on member contributions	2.50% per year	3.00% per year
Interest rate used to calculate 50% rule	0.60% per year for 10 years; 0.80% per year thereafter	1.20% per year for 10 years; 1.20% per year thereafter
Investment expenses	Discount rate is net of investment expenses	Same
Non-investment expenses	\$1,560,000 (increased at 3% per year) is added to the University normal cost to cover non-investment expenses	\$1,500,000 (increased at 4% per year) is added to the University normal cost to cover non-investment expenses
PfAD	9.00% of non-indexed liabilities and normal cost (including provisions for expenses)	Same

	January 1, 2021	January 1, 2020
Demographic Assumptions		
Mortality table	2014 Canadian Pensioners' Public Sector Mortality ("CPM2014 Public") Table with mortality improvement Scale MI-2017	Same
Retirement rates	Variable by age (Table A following)	Same
Termination rates	Variable by age (Table B following)	Same
Election on termination	All terminating members are assumed to elect a deferred pension	Same
Disability rates	None	Same

Methods		
Actuarial cost method	Projected unit credit	Same
Asset valuation method	Market value of assets adjusted to reflect contributions, benefit payments, transfers and fees/expenses in transit as of the valuation date	Same

Table A—Retirement Rates

Sample retirement rates per 1,000 are shown in the following table:

Age	Rates per 100
60	5
61	5
62	25
63	10
64	10
65	50
66	25
67	25
68	25
69	50
70	100

Table B—Termination Rates

Sample rates used in this valuation are shown as rates per 100 lives in the following table:

Age	Male and Female
20	10.0
25	10.0
30	5.6
35	3.2
40	2.2
45	1.7
50	1.2
55	0.7
60	0.2
65	0.0

:

Justification of Actuarial Assumptions and Methods

Margins for Adverse Deviations

The actuary has discussed the Plan's experience with the University and compared it to the expected experience. This review indicates that the use of the PfAD achieves the University's desire to maintain safety cushions; therefore the decision was made to not include any additional margins for conservatism. The Provisions for PfAD that is required by Ontario Regulation is discussed later in this section.

Economic Assumptions

Discount Rate

The overall expected return ("best-estimate") of 5.30% was developed based on an inflation rate of 2.00% per year, using best-estimate returns for each major asset class in which the pension fund is invested. A Monte Carlo simulation is performed over 30 years where the portfolio returns are projected assuming annual rebalancing. The average of the 30-year geometric return is used to develop an overall best-estimate rate of return for the entire pension fund. Gains from rebalancing and diversification are implicit to this return.

The following table lays out the adjustments that have been made to the overall expected rate of return in order to arrive at our going concern discount rate assumption:

Development of Discount Rate	
Overall expected return	5.34%
Non-investment expenses	0.00%
Passive Investment expenses	(0.07)%
Additional returns due to active management	0.00%
Unrounded Discount Rate	**5.27%**
Discount Rate	**5.30%**

Inflation Rate

The inflation rate assumption reflects our best estimate of future inflation considering current economic and financial market conditions, and reflects the mid-point of Bank of Canada target inflation

Productivity Increases

The productivity increase assumption reflects our best estimate of future increases considering current economic and financial market conditions, and is consistent with historical real economic growth.

Increases in Pensionable Earnings

The assumption for increases in pensionable earnings reflects the assumed rate of inflation, plus allowances for the effect of productivity growth, individual employee merit and promotion. In the near-term, it reflects the anticipated impact of Ontario Bill 124 which limits wage increases in the broader public sector.

Increases in YMPE

As the benefits paid to a member from the Plan are dependent on the future YMPE, it is necessary to make an assumption regarding the future increases in the YMPE.

The assumed increase in the YMPE reflects the assumed rate of inflation plus the productivity increase assumption.

Increases in the Maximum Pension Limit

Pensions are limited to the maximum limits under the *Income Tax Act*. The *Income Tax Act* specifies both a dollar limit, and in addition pensions cannot exceed 2% of indexed highest average compensation per year of credited service. The assumed increase in the dollar limit reflects the assumed rate of inflation plus the productivity increase assumption.

Interest on Member Contributions

Interest is credited on member contributions with the rate credited by chartered banks on five-year personal fixed term deposits. The assumption for interest on member contributions reflects our expected increase in these rates, and is consistent with historical rates.

Expenses

Since the discount rate has been established net of investment expenses, no explicit assumption is required for investment expenses.

An explicit provision for non-investment expenses has been included in the normal cost.

Provision for Adverse Deviation

For the purpose of this valuation, the PfAD is established based on the target asset allocation for each category of investments set out in the Statement of Investment Policies and Procedures (SIPP) in effect at the date of this report.

Asset Mix Component	Investment Categorization under Regulation 76 (12)	Categorization under Regulation 11.2 (8)[1]	Target Asset Allocation (%)
Cash and short term	4	Fixed Income ("L")	2.0%
Fixed-income	15	Fixed Income ("L")	33.0%
Canadian equities	13	Non-Fixed Income	15.0%
Global equities	14	Non-Fixed Income	40.0%
Real Estate (REIT)	7	Non-Fixed Income	5.0%
Infrastructure (Listed)	17	Non-Fixed Income	5.0%
			100.0%
Fixed income ("L")			35%
Alternative Investment ("M")			0%
(a) Percentage of fixed income for PfAD ["L" + 50%* "M"]			35.00%
(b) Percentage of non-fixed income for PfAD [100%-(a)]			65.00%
(c) Asset mix component (see table below) [2]			5.00%

Percent of Non-Fixed Income Assets	PfAD for Closed Plans	PfAD for Open Plans
0%	0%	0%
20%	2%	1%
40%	4%	2%
50%	5%	3%
60%	7%	4%
70%	11%	6%
80%	15%	8%
100%	23%	12%

[1] The fixed income investments satisfy the minimum credit rating requirements prescribed by the Regulation.
[2] Based on linear interpolation.

Benchmark Discount Rate (BDR)

(d) V39056 rate at the valuation date	1.21%
(e) BDR [(d)+1.5%*(a)+5.0%*(b)+0.5%]	5.49%
(f) Best estimate discount rate[1]	5.37%
(g) Plan duration	14.97

PfAD is Determined as Follows:

Fixed component (open 4% or closed 5%)	4.00%
Asset mix component	5.00%
BDR component [Max [0, (g)*((f)-(e))]]	0.00%
Total	**9.00%**

[1] Gross of non-investment expenses and passive investment management fees.

Demographic Assumptions

Mortality

At the current valuation, we are using the 2014 Canadian Pensioners' Public Sector Mortality Table with mortality improvements in accordance with MI-2017.

In 2017, the CIA released a research paper introducing a new Mortality Improvement Scale (MI-2017) and subsequently published an Education Note stating that both the MI-2017 and CPM-B Scales "constitute broad and relevant mortality improvement studies for the Canadian population." We have continued to use MI-2017 projection scale for the purposes of this valuation since this scale takes into account a broader thinking on mortality improvements.

Retirement

The rates of retirement vary by age. The rates of retirement have been developed as our expectation of the best-estimate rates of retirement based on the Plan provisions and a review of retirement experience over the 10 year period ending in 2019. We have been using this table since 2020. We compare actual experience to this assumption with each valuation to monitor its continued appropriateness.

Termination of Employment

The rates of termination of employment before retirement represent a best estimate of termination rates for a plan of this size and workforce characteristics of the Plan. Table A was developed by a previous actuary for the Plan. We have been using this table as our assumption since our first valuation in 2005. The resulting gains and losses have been relatively small. Therefore, we continue to find this table appropriate.

Option Elections on Termination

We have assumed all members will elect a deferred annuity on termination.

Disability

If an active Plan member becomes disabled, contributory service continues to accrue until unreduced pension commencement age, but employee contributions are waived. Since this benefit is substantially the same as the benefit that accrues to an active member, no disability assumption was used. Use of an actual disability assumption in this case would reduce liabilities slightly, so a nil disability incidence assumption represents a small element of conservatism. The disability assumption has very little impact on the valuation results.

Proportion of Members with Spouses and Spousal Age Differential

There is no percent married assumption or age difference assumption required since the Plan does not offer a subsidized joint and survivor pension at retirement, nor any specific preretirement death benefit for a spouse that is not offered to any other beneficiary.

Other

Actuarial Cost Method

An actuarial cost method is a technique used to allocate in a systematic and consistent manner the expected cost of a pension plan over the years of service during which Plan members earn benefits under the Plan. By funding the cost of a pension plan in an orderly and rational manner, the security of benefits provided under the terms of the Plan in respect of service that has already been rendered is significantly enhanced.

The projected unit credit actuarial cost method has been used for this valuation. Under this method, the actuarial present value of benefits in respect of service prior to the valuation date, but based on pensionable earnings projected to retirement, is compared with the actuarial asset value, revealing either a surplus or an unfunded actuarial liability.

With respect to service after the valuation date, the expected value of benefits for service in the year following the valuation date (i.e., the normal cost) net of any required employee contributions is expressed as a percentage of the expected value of participating payroll for that year. The employer normal cost contributions are determined each year by applying this percentage to the actual participating payroll for the year.

When calculating the actuarial present value of benefits at the valuation date, the present value of all retirement, withdrawal and preretirement death benefits are included. For each member, the retirement, withdrawal and preretirement death benefits for a particular period of service are first projected each year into the future taking into account future vesting, early retirement entitlements and minimum pension/value entitlements. These projected benefits for each future year are then capitalized, multiplied by the probability of the member leaving the Plan in that year and discounted with interest and survivorship to the valuation date. The actuarial present value of benefits for the particular period of service is then determined by summing the present values of these projected benefits.

The pattern of future contributions necessary to pre fund future benefit accruals for any one particular individual will increase gradually as a percentage of their pensionable earnings as the individual approaches retirement. For a stable population (i.e., one where the demographics of the group remain constant from year to year), the normal cost will remain relatively level as a percentage of payroll. The projected unit credit actuarial cost method therefore allocates contributions among different periods in an orderly and rational manner for a stable population group.

In the event of future adverse experience, contributions in addition to the normal cost calculated under the projected unit credit actuarial cost method may be required to ensure that the Plan's assets are adequate to provide the benefits. Conversely, favourable experience may generate surplus which may serve to reduce future contribution requirements.

Asset Valuation Method

The asset valuation method for this valuation is market value of assets. All other gains and losses have been fully recognized.

Appendix D: Solvency and Hypothetical Wind Up Assumptions and Methods

Valuation Assumptions

	January 1, 2021	January 1, 2020
Economic Assumptions		
Discount Rates—Solvency		
Transfer value basis	1.20% per year for 10 years; 2.80% per year thereafter	2.50% per year for 10 years; 2.60% per year thereafter
Annuity purchase basis	2.50% per year	2.96% per year
Duration used to determine annuity purchase basis	11.63	11.25
Blended rates used to determine solvency special payments	2.20%	2.80%
Discount Rates—Hypothetical Wind-Up		
Transfer value basis		
100% CPI Indexed	0.60% per year for 10 years; 0.80% per year thereafter	1.20% per year for 10 years; 1.20% per year thereafter
75% CPI Indexed	0.80% per year for 10 years; 1.30% per year thereafter	1.50% per year for 10 years; 1.60% per year thereafter
Annuity purchase basis		
100% CPI Indexed	-0.78% per year	-0.29% per year
75% CPI Indexed	0.04% per year	0.52% per year

Demographic Assumptions		
Mortality table	2014 Canadian Pensioners' Combined Mortality ("CPM2014") Table with mortality improvement Scale CPM-B[1]	Same
Termination rates	Immediate	Same
Retirement age	50% at age between 55 and 65 that produces highest value and 50% at unreduced age 62	Age between 55 and 65 that produces highest value

[1] No preretirement mortality was applied

	January 1, 2021	January 1, 2020
Other		
Wind up expenses	$500,000	Same
Actuarial cost method	Unit credit	Same
Asset valuation method	Market value of assets adjusted to reflect contributions, benefit payments, transfers and fees/expenses in transit as of the valuation date	Same
Incremental Cost		
The assumptions for the expected benefit payments and decrement probabilities, service accruals, and projected changes in benefits and/or pensionable earnings	Same as going concern	Same

Based on the CIA's Guidance and information such as pension legislation, Plan provisions and Plan experience, we have made the following assumptions regarding how the Plan's benefits would be settled on Plan wind up:

	Percent of Liability Assumed to be Settled By Purchase of Annuities	Percent of Liability Assumed to be Settled By Lump-Sum Transfer
Active Members		
Not retirement eligible	0%	100%
Retirement eligible	100%	0%
Deferred Vested Members		
Not retirement eligible	100%	0%
Retirement eligible	100%	0%
Retired Members and Beneficiaries	100%	0%

Postulated Scenario

The postulated scenario is the assumption of immediate termination of employment for the active group at the valuation date. Therefore, no allowance for future salary increases or demographic experience are reflected.

Benefits Valued

	Solvency Valuation	**Hypothetical Wind Up Valuation**
Vesting	We have treated all accrued benefits as vested on Plan wind up.	We have treated all accrued benefits as vested on Plan wind up.
Consent Benefits	None.	None.
Grow-in Benefits	Active members with 55 age-plus-continuous service points as of the valuation date are assumed to grow into the enhanced early retirement reductions of the Plan.	Active members with 55 age-plus-continuous service points as of the valuation date are assumed to grow into the enhanced early retirement reductions of the Plan.
Exclusions	In accordance with the *Pension Benefits Act* (Ontario), the solvency liability excludes the value of future escalated adjustments (future indexation) for both the preretirement and postretirement period.	None.
Post-Valuation Date Benefit Increases	Not applicable	Not applicable
Indexing	Excluded	Included

Justification for Valuation Assumptions

We have set the aforementioned assumptions based on guidance prepared by the CIA Committee on Pension Plan Financial Reporting ("PPFRC") in Educational Note – Assumptions for Hypothetical Wind-Up and Solvency Valuations with Effective Dates between December 31, 2020 and December 30, 2021 ("CIA Guidance") released on January 22, 2021.

For benefit entitlements that are expected to be settled by lump-sum transfer, we based the assumptions on Section 3500 (Pension Commuted Values) of the CIA Standards of Practice, using rates corresponding to a valuation date of January 1, 2021.

For benefit entitlements that are expected to be settled by purchase of annuities, we based the assumptions on information compiled by the PPFRC from insurance companies active in the group annuity market as described in the educational note.

Non-Indexed Rates

Solvency lump-sum discount rate for 10 years	= V122542[1] + 74 bps = 0.48% + 0.74% **= 1.22% (rounded to 1.20%) per year**
Solvency lump-sum discount rate thereafter	= V122544[30]+ 0.5 x (V122544[1] – V122542[1]) + 119 bps = 1.24% + 0.5 x (1.24% – 0.48%) + 1.19% **= 2.81% (rounded to 2.80%) per year**
Solvency annuity purchase discount rate	= V39062 + Duration Adjustment = 1.10% +1.40% **= 2.50% per year**

[1] CANSIM Series (annualized)

Indexed Rates

Theoretical Yield on 7-year RRGCB (r_7)
= V122553[1] x (V122542[1] / V122544[1])
= -0.24% x (0.48%/1.24%)
= -0.09% per year

Fully indexed lump-sum discount rate for 10 years ($r_{1\text{-}10}$)
= $[(1 + i_{1\text{-}10})/ (1+ 1 \times c_{1\text{-}10})] - 1$
= [(1 + 1.22%) / (1+ 1 x 0.57%)] - 1
= 0.64% (rounded to 0.60%) per year

Fully indexed lump-sum discount rate thereafter (r_{10+})
= $[(1 + i_{10+})/ (1+ 1 * c_{10+})] - 1$

= [(1 + 2.81%) / (1+ 1 x 1.95%)] - 1
= 0.84% (rounded to 0.80%) per year

Full indexed annuity purchase discount rate
= V39057 – 50 bps
= -0.28% - 0.50%
= -0.78% per year

Implied 100% CPI for 10 years ($c_{1\text{-}10}$)
= $[(1 + i_7) / (1 + r_7)] - 1$
= [(1 + 0.48%) / (1 + -0.09%)] - 1
= 0.57% per year

Implied 100% CPI for 10 years (c_{10+})
= $[(1+i_L+0.5x(i_L-i_7)/(1+r_L+0.5x(r_L - r_7)] - 1$
= 1.95% per year

Partially indexed (75% CPI) lump-sum discount rate for 10 years = $[(1 + i_{1\text{-}10}) / (1 + 0.75 \times c_{1\text{-}10})] - 1$

= [(1 + 1.22%) / (1 + 0.75 x 0.57%)] - 1
= 0.79% (rounded to 0.80%) per year

Partially indexed (75% CPI) lump-sum discount rate thereafter = $[(1 + i_{10+}) / (1 + 0.75 \times c_{10+})] - 1$

= (1 + 2.81%) / (1 + 0.75 x 1.95%) - 1
= 1.33% (rounded to 1.30%) per year

Partially indexed (75% CPI) annuity purchase discount rate =

0.25 x Solvency annuity purchase discount rate + 0.75 x Full indexed annuity purchase discount rate
= 0.25 x 2.50% + 0.75 x -0.78%
= 0.04% per year

Mortality Table

The derivation of the discount rate above is in conjunction with CPM2014 in accordance with the CIA Guidance

Preretirement Mortality

We have made no allowance for preretirement mortality. The impact of including such an assumption would not have a material impact on the valuation, since the value of the death benefit is approximately equal to the value of the accrued pension.

Assumptions Not Needed

The following are not relevant to the solvency or hypothetical wind up valuation:

- Increases in pensionable earnings;
- Termination of employment rates; and
- Increases in YMPE.

Estimated Wind Up Expenses

Plan wind up expenses would normally include such items as fees related to preparation of the actuarial wind up report, fees imposed by a pension supervisory authority, legal fees, administration, custodial and investment management expenses. We calculated this as a flat $500,000. We have not made an allowance for expenses related to surplus or deficit resolution. We have assumed that the University will still be solvent on the wind up of the Plan.

Calculation of Special Solvency Payments

To calculate the special payments necessary to liquidate the Solvency deficiency we used a weighted average of the solvency discount rates based on the relative proportions of benefit entitlements that are expected to be settled by purchase of annuities and lump-sum transfer.

Unisex Assumption

The liabilities are valued on a sex-distinct basis. The determination of the unisex percentage used in the payment of commuted values to members eligible for portability is based on the proportion of active and deferred vested liabilities for males and females. As such, the determination of commuted value liabilities on a sex-distinct basis in the solvency/hypothetical wind-up valuation is appropriate.

Actuarial Cost Methods

Unit credit (accrued benefit) cost method as prescribed.

Asset Valuation Method Considerations

Assets for solvency purposes have been determined using market value.

Incremental Cost

The incremental cost represents the present value, at the calculation date (time 0), of the expected aggregate change in the liabilities between time 0 and the next calculation date (time t), adjusted upwards for expected benefit payments between time 0 and time t.

An educational note was published in December 2010 by the CIA Committee on PPFRC to provide guidance for actuaries on the calculation of this new information.

The calculation methodology can be summarized as follows:

- The present value at time 0 of expected benefit payments between time 0 and time t, discounted to time 0,

  plus

- Projected liabilities at time t, discounted to time 0, allowing for, if applicable to the pension plan being valued:
  - expected decrements and related changes in membership status between time 0 and time t,
  - accrual of service to time t,
  - expected changes in benefits to time t,
  - a projection of pensionable earnings to time t,

  minus

- The liabilities at time 0.

The projection calculations take into account the following assumptions and additional considerations:

The assumptions for the expected benefit payments and decrement probabilities, service accruals, and projected changes in benefits and/or pensionable earnings would be consistent with the assumptions used in the pension plan's going concern valuation.

The assumptions used to calculate the projected liability at time t are consistent with the assumptions for the liabilities at time 0, assuming that interest rates remain at the levels applicable at time 0, that the select period is reset at time t for interest rate assumptions that are select and ultimate and that the Standards of Practice for the calculation of commuted values and the guidance for estimated annuity purchase costs in effect at time 0 remain in effect at time t.

- Active and inactive Plan members as of time 0 are considered in calculating the incremental cost.

Appendix E: Summary of Plan Provisions

This funding valuation was based on Plan design information provided by the University as of January 1, 2021. The following is a summary of the main provisions of the Plan.

Plan Provisions—DB Provision

Effective Date	January 1, 2011 (last restatement of the Plan document and as subsequently amended).
Jurisdiction of Registration	Ontario
Eligibility for Membership	Faculty and Staff Employees are eligible to join the Plan on the first day of any month coincident with or next following the date of employment with the University. An eligible Employee must join the Plan no later than the first day of the calendar year coincident with or next following attainment of age 35, or their appointment (if already age 35). Faculty Employees employed as lecturers may elect not to join the Plan. However, a lecturer who has attained age 35 must join the Plan on the first day of the month coincident with or next following the earlier of promotion to a higher rank or completion of five years of service with the University. Any Employee who has either earned at least 35% of the Year's Maximum Pensionable Earnings (YMPE) under the Canada Pension Plan or worked at least 700 hours in each of the two immediately preceding calendar years, shall be eligible to join the Plan on the first day of any month coincident with or next following the date on which such conditions are satisfied.
Normal Retirement	
Eligibility	First day of the month coincident with or next following attainment of age 65.
Benefit	Effective May 1, 1998 on retirement, a member receives an annual pension equal to the sum of the following: 1.4% of Final Average Earnings up to the Average Year's Maximum Pensionable Earnings, plus, 2.0% of Final Average Earnings in excess of the Average Year's Maximum Pensionable Earnings for each year and completed month of Credited Service under the Plan.

The Final Average Earnings is determined based on 36 consecutive months of earnings for retirements on or before January 1, 2014. The averaging period is increased by one month for each month in 2014 and 2015 so that the averaging period is 60 consecutive months for all retirements after December 31, 2015. The Average Year's Maximum Pensionable Earnings is determined over a five-year period.

On retirement prior to May 1, 1998, a member received an annual pension equal to the sum of the following:

1.3% of Final Three-Year Average Earnings up to the Average Year's Maximum Pensionable Earnings, plus,

2.0% of Final Three-Year Average Earnings in excess of the Average Year's Maximum Pensionable Earnings.

for each year and completed month of Credited Service under the Plan.

The Average Year's Maximum Pensionable Earnings was determined over a three-year period.

Maximum Pension

The annual benefit payable in the Normal Form under the Plan for a member determined at the time of pension commencement cannot exceed the lesser of:

- the lesser of (a) and (b):
  - (a) the defined benefit limit for the year as defined in the *Income Tax Act*; and
  - (b) $3,200.00 prior to January 1, 2021 or $3,400.00 effective January 1, 2021, increased thereafter each calendar year commencing January 1, 2022 by one-third (1/3) of the percentage increase in the Average Industrial Wage, calculated on an annual basis.

times the Member's Credited Service; and

- 2.0% of the Member's highest indexed compensation times Credited Service.

For service prior to January 1, 1992, a member's Credited Service shall not exceed 35 years.

Regulation 8504(6) imposes a lower maximum benefit limit in respect of any pre-1990 service that is granted after June 8, 1990 (e.g., buy-back or granting of years of pre-1990 service that was not previously counted as Credited Service).

Early Retirement

Eligibility	Within ten years of normal retirement date and retire from active service.
Benefit	For Members who retired on an early retirement date prior to May 1, 2000, the pension payable on early retirement is reduced by ⅓ of 1% for each of the first 60 complete months by which early retirement precedes the normal retirement date plus ½ of 1% for each additional complete month. For Members who retire on an early retirement date on or after May 1, 2000, the pension payable on early retirement is reduced by 1/2 of 1% for each complete month by which early retirement date precedes the first day of the month coincident with or next following age 62. In any event, the reduced pension cannot be less than the actuarial equivalent of the Member's accrued pension.

Postponed Retirement

Eligibility	Any age after normal retirement date; pension commencement under the Plan may not be postponed beyond the end of the calendar year in which the Member attains age 71.
Benefit	The Member continues to make required contributions, his or her service continues to accrue and the Member will receive a pension on his or her postponed retirement date based on Credited Service, Final Average Earnings and Average Year's Maximum Pensionable Earnings at that date, subject to the paragraphs below. A Member who is a Faculty Employee employed by the University since prior to January 1, 1969 is permitted, if he or she elects on or before normal retirement date to postpone retirement by no more than three years following the first of the month coincident with or next following the end of the contract year during which he or she attains age 65, to elect on or before normal retirement date to cease making any further contributions to the Plan. Such Member shall receive a pension equal to the actuarial equivalent of the pension they would have received at normal retirement date. A Member who is a non-union Staff Employee employed by the University since prior to January 1, 1969 is permitted, if he or she elects on or before normal retirement date to postpone retirement by no more than three years following the first of the month coincident with or next following the normal retirement date, to elect on or before normal retirement date to cease making any further contributions to the Plan. Such Member shall receive a pension equal to the actuarial equivalent of the pension they would have received at normal retirement date.

Termination Benefits	
Eligibility	Immediate (prior to early retirement date)
Benefit	A Member whose service terminates is entitled to a locked-in fully vested deferred pension commencing at his normal retirement date. The early retirement reduction applicable if the former Member commences receipt of the pension prior to normal retirement date, on or after early retirement date, is equal to 1/3 of 1% for each of the first 60 complete months by which early retirement precedes the normal retirement date plus ½ of 1% for each additional complete month. A Member who terminates employment and is entitled to a locked-in vested deferred pension may request that an amount equal to the commuted value of the deferred pension entitlement be transferred to another registered pension plan, to a prescribed locked-in retirement savings arrangement or to an insurance University for the purchase of a life annuity that will not commence benefit payments prior to the Member's early retirement date. Different provisions applied for those members who terminated employment prior to July 1, 2012
Death Benefits	
Eligibility	Immediate
Benefit	On the death of a Member while in the service of the University, a refund of the commuted value of the accrued pension, subject to the 50% minimum employer cost rule plus any additional voluntary contributions, are paid to the Member's spouse, or if no spouse, the Member's designated beneficiary or estate. Different pensions applied prior to July 1, 2012.
Disability	
Eligibility	Immediate (prior to age 65)
Benefit	Members who are in receipt of income disability benefits under the long-term disability insurance plan of the University cease to contribute while disabled but continue to accrue Credited Service for pension purposes. Accrued pensions for LTD Members are based on pensionable earnings, to date of disability, increased each year by a percentage which is determined annually by the Committee.
Normal Form of Payment	The normal form of pension payable to a Member is a life annuity with a ten-year guarantee period. For Members who terminated prior to May 1, 1998 and are entitled to a deferred pension under the Plan, the normal form is a life annuity with a five-year guarantee period.

Cost-of-Living Adjustments

The pension of each Member receiving pension payments on May 1 of any year shall be adjusted by the Postretirement Cost-of-Living Factor for each year, provided that the Member has received at least one regular pension payment prior to May 1.

For any pension benefits accrued prior to January 1, 2014, this factor is obtained by dividing the average Consumer Price Index for the preceding calendar year by the average index for the next preceding calendar year. In the first year of retirement, the increase will be provided on a pro rata basis subject to the *Income Tax Act* rules. However, if this factor exceeds 105% and if the financial position of the Plan is not sufficient to provide for this increase, the factor may be reduced, within certain limits, to maintain the solvency of the Plan.

For any pension benefits accrued on and after January 1, 2014 this factor is obtained by dividing the average Consumer Price Index from the preceding calendar year by the average index for next preceding calendar year, and then multiplying the result by 0.75. However, if this factor exceeds 103.75% and if the financial position of the plan is not sufficient to period for this increase, the factor may be reduced, within certain limits, to maintain the solvency of the Plan.

In 2009, the date of the annual adjustment changed from July 1 to May 1, with the first such adjustment as of May 1, 2009 prorated to reflect the ten-month period since the prior adjustment.

All terminated Members who are entitled to a terminated vested pension except for those who terminated between July 1, 1977 and December 31, 1986 shall have their terminated vested pensions adjusted on May 1 (July 1 prior to 2009) of each year by a cost-of-living factor to be determined annually by the Committee, subject to the *Income Tax Act* Rules. Notwithstanding the foregoing, if a Member terminates employment on or after January 1, 2008 and is not within ten years of his or her Normal Retirement Date, or has not completed 20 years or more of continuous employment, the Cost of Living Factor shall only apply to the terminated vested member's pension earned in respect of Credited Service prior to January 1, 2008.

Increases in the Consumer Price Index and the corresponding postretirement cost-of-living factors for 2017 and the previous years are shown below[1]:

[1] Cost of living factors only shown for pre-2014 accrued benefits

Year	Increase in Prior Year Consumer Price Index (%)	Postretirement Cost-of-Living Factor (%)
1968	-	2.50
1969	-	3.00
1970	4.50	4.50
1971	3.30	2.00
1972	2.90	2.30
1973	4.80	4.80
1974	7.70	6.40
1975	10.90	10.90
1976	10.80	10.80
1977	7.50	7.50
1978	7.99	5.00
1979	8.91	8.91
1980	9.15	9.15
1981	10.16	10.16
1982	12.49	10.00
1983	10.76	10.76
1984	5.83	5.83
1985	4.35	4.35
1986	3.96	3.96
1987	4.17	4.17
1988	4.37	4.37
1989	4.04	4.04
1990	4.97	4.97
1991	4.76	4.76
1992	5.64	5.64
1993	1.49	1.49
1994	1.84	1.84
1995	0.19	0.19
1996	2.17	2.17
1997	1.56	1.56
1998	1.63	1.63
1999	0.97	0.97
2000	1.74	1.74
2001	2.68	2.68
2002	2.56	2.56
2003	2.23	2.23
2004	2.77	2.77
2005	1.88	1.88
2006	2.17	2.17
2007	2.04	2.04
2008	2.20	2.20
2009[1]	1.94	1.94
2010	0.29	0.29
2011	1.78	1.78
2012	2.91	2.91
2013	1.52	1.52
2014	0.94	0.94
2015[2]	1.91	1.91
2016	1.13	1.13
2017	1.43	1.43
2018	1.60	1.60
2019	2.27	2.27
2020	1.95	1.95
2021	0.72	0.72

[1] Effective May 1, 2009 the indexation date was changed from July 1 to May 1. Therefore, the indexation adjustment made in 2009 is prorated for ten months since the prior adjustment

[2] Pensions earned up to December 31, 2013 are indexed annually at 100% of the postretirement cost-of-living factor; pensions earned on and after January 1, 2014 are indexed at 75% of the postretirement cost-of-living factor

Member Contributions

Effective May 1, 2020, Members are required to contribute to the Plan in accordance with the following table:

	Contribution Rate on Earnings	
Effective Date	**Not in Excess of Year's Maximum Pensionable Earnings**	**In Excess of Year's Maximum Pensionable Earnings**
May 1, 2020	6.95%	9.95%
May 1, 2021	7.40%	10.60%
May 1, 2022	7.80%	11.20%

Effective January 1, 2013, members are required to contribute 6.25% of annual earnings up to the YMPE, 8.95% of annual earnings that exceed the YMPE but are less than two times the YMPE, and 9.95% of annual earnings in excess of two times the YMPE, subject to the amount permitted under the *Income Tax Act* for the year.

Effective May 1, 2009, Members were required to contribute 5.80% of annual Earnings up to the YMPE, 8.30% of annual Earnings that exceed the YMPE but are less than two times the YMPE, and 9.65% of annual Earnings in excess of two times the YMPE, subject to the amount permitted under the *Income Tax Act* for the year.

Effective July 1, 2008, Members were required to contribute 5.05% of annual Earnings up to the YMPE, 7.85% of annual Earnings that exceed the YMPE but are less than two times the YMPE, and 9.20% of annual Earnings in excess of two times the YMPE, subject to the maximum amount permitted under the *Income Tax Act* for the year.

Effective July 1, 2007, Members were required to contribute 4.80% of annual Earnings up to the YMPE, 7.175% of annual Earnings that exceeds the YMPE but are less than two times the YMPE, and 7.85% of annual Earnings in excess of two times the YMPE, subject to the maximum amount permitted under the *Income Tax Act* for the year.

For the period January 1, 2003 to June 30, 2007, Members were required to contribute 4.55% of annual Earnings up to the YMPE and 6.50% of the excess of Earnings above the YMPE, subject to the maximum amount permitted under the *Income Tax Act* for the year.

Prior to May 1, 1998, Members were required to contribute 4.875% of annual Earnings up to the YMPE and 6.50% of the excess of annual Earnings above the YMPE, subject to the maximum amount permitted under the *Income Tax Act* for the year. Between May 1, 1998 and January 1, 2003, there were temporary reductions in these member contribution rates.

Prior to January 1, 2012, these contributions were credited with interest each year at the four-year arithmetical average rate of return on the pension fund, excluding real return bonds, calculated at December 31st of the prior year. Effective January 1, 2012, the interest credit is the CANSIM rate.

Member Flexible Pension Plan Contributions

Prior to January 1, 2014, members are permitted to make additional flexible Pension Plan contributions on December 31st of each year up to the maximum deductible contribution permitted by the *Income Tax Act*.

On retirement or termination of membership, a Member's flexible Pension Plan contribution balance may be used to purchase additional ancillary benefits under the Pension Plan, up to the maximum ancillary benefits permitted by the *Income Tax Act*.

Flexible contributions that cannot be used to purchase ancillary benefits will be forfeited by the Member.

Transfers to the Pension Fund

A new Member may transfer the value of his or her benefits earned under the registered pension plan of a previous employer into the pension fund. The terms and conditions of such transfer and the benefits that will be payable are determined in accordance with Article 12 of the Plan, as amended from time to time.

Definitions

Pensionable earnings	**Staff Employees** Base salary, excluding overtime pay, reimbursement for expenses, special payments, shift premiums, week-end provisions, special allowances and other like payments. **Faculty Employees** Base salary, excluding reimbursement for expenses, administrative stipends, faculty research fellowships, seasonal stipends, summer teaching stipends, special payments, special allowances and other like payments.
Credited service	Member's years and completed months of continuous employment with the University while a member in the Plan. For service of a member employed on a part-time basis, the period of service is multiplied by the proportion the member's reduced workload bears to a regular full-time workload.

A copy of a letter from the University certifying the accuracy and completeness of the Plan provisions summarized in this report is included in Appendix F of this report.

Appendix F: Administrator Certification

With respect to the University of Waterloo Pension Plan, forming part of the actuarial report as at January 1, 2021, I hereby certify that, to the best of my knowledge and belief:

- The asset data provided or made available to the actuary is complete and accurate;
- The membership data and subsequent query answers provided or made available to the actuary are complete and accurate for all persons who are entitled to benefits under the terms of the Plan in respect of service up to the date of the valuation;
- The Plan provisions provided or made available to the actuary are complete and accurate;
- The actuary has been notified of all relevant events subsequent to the valuation measurement date; and
- The terms of engagement contained in Section 1 of this report are accurate and reflect the plan administrator's direction.

Name (print) of Authorized Signatory	Title
Signature	Date

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UNIVERSITY OF WATERLOO
2021/22 Operating Income Budget (in thousands)

Board of Governors
April 6, 2021

	2020/21 Base Budget	Increase / (Decrease) $	Increase / (Decrease) %	2021/22 Base Budget	Notes
INCOME					
Operating Grant					
Enrolment	186,669	(23,966)	-12.8%	162,703	
SMA3 Performance Outcomes	63,954	23,966	37.5%	87,920	
Special Purpose	5,416	(27)	-0.5%	5,389	
International Student Recovery	(6,439)	763	-11.8%	(5,676)	
Transfers to AFIW	(13,496)	692	-5.1%	(12,804)	
	236,104	1,428	0.6%	237,532	Note 1
Tuition					
Domestic - Undergraduate	236,156	(3,927)	-1.7%	232,229	Note 2
Domestic - Graduate	29,289	322	1.1%	29,611	
International - Undergraduate	240,643	21,290	8.8%	261,933	Note 3
International - Graduate	46,121	2,029	4.4%	48,150	Note 4
Transfers to AFIW	(19,656)	(866)	4.4%	(20,522)	
	532,553	18,848	3.5%	551,401	
Other Revenue					
Co-op Recovery	23,734	782	3.3%	24,516	
Student Services Fee	14,364	1,261	8.8%	15,625	Note 5
Research Overhead	9,128	1,479	16.2%	10,607	
Interest	11,100	(1,500)	-13.5%	9,600	Note 6
Services to AFIW	3,891	18	0.5%	3,909	
Miscellaneous Income	9,672	(2)	0.0%	9,670	
	71,889	2,038	2.8%	73,927	
Non-recurring Operating Income budget	16,200	(16,200)	-100.0%	0	Note 7
Total Income	856,746	6,114	0.7%	862,860	

Note 1 - Under the Strategic Mandate Agreement (SMA3, effective 2020/21 - 2024/25), the Ministry of Colleges and Universities (MCU) is annually increasing the share of total grant funding contingent upon performance outcomes.

Note 2 - The projected decrease in Domestic Undergraduate tuition revenue represents a return to expected new enrolments in 2021/22 after significantly exceeding 2020/21 new enrolment targets. The Board of Governors approved a 0% tuition rate increase consistent with 2020/21 rates at their February meeting in the absence of a provincial tuition framework.

Note 3 – The increase in International Undergraduate tuition revenue is consistent with tuition rate increases approved by the Board of Governors in its February 2021 meeting, partially offset by a projected decrease in international undergraduate new enrolments. 2021/22 figures represent a return to expected new enrolments after significantly exceeding 2020/21 new enrolments targets.

Note 4 - The increase in International Graduate tuition revenue is driven by international tuition rate increases approved by Board in its February 2021 meeting as well as a slight projected increase in overall international graduate enrolment.

Note 5 - The increase in the student services fee revenue relates mainly to decisions of the Student Services Advisory Committee to provide funding for designated student services.

Note 6 - The investment income earned on operational funds is based on current and forecasted cash management and investment plans. The decrease relates to declining interest rates as fixed income investments mature.

Note 7 - Non-recurring income budget was included in the 2020/21 operating budget to reflect various tuition income and other revenue increases and decreases in 2020/21 related to the financial and operational impacts of COVID-19, such as additional revenue related to accelerated academic terms and course enrolment by co-op students and student service fees for Athletics being waived for some terms. While some of these revenue impacts may extend into the current year, these impacts are not expected to continue on an ongoing basis. Although uncertainties remain relating to the impact of COVID-19, any non-recurring impact to operating income in 2021/22 is expected to be small. This will be reassessed for consideration in the 2021/22 budget update.

UNIVERSITY OF WATERLOO

2021/22 Operating Expense Budget (in thousands)

Board of Governors
April 6, 2021

	2020/21 Base Budget	Increase / (Decrease) $	Increase / (Decrease) %	2021/22 Base Budget	2021/22 Base Budget as % of Income	Notes
EXPENSES						
Salary and Wages						
Current salaries and wages	476,032	14,700	3.1%	490,732	56.9%	Note 1
Benefits						
Current benefits	108,347	5,753	5.3%	114,100	13.2%	
Faculty professional expense reimbursement plan	2,742	50	1.8%	2,792	0.3%	
Parental leave supplement	2,000	500	25.0%	2,500	0.3%	
Total benefits	113,089	6,303	5.6%	119,392	13.8%	Note 2
Total salaries and benefits	589,121	21,003	3.6%	610,124	70.7%	
Student Support	54,673	1,794	3.3%	56,467	6.5%	Note 3
Other						
Accessibility fund for students with disabilities	1,051	244	23.2%	1,295	0.2%	
Capital Project Financing	0	2,000	100.0%	2,000	0.2%	Note 4
Insurance	2,500	500	20.0%	3,000	0.3%	
Library acquisitions	8,519	-	0.0%	8,519	1.0%	
Municipal taxes	3,050	-	0.0%	3,050	0.4%	
University Fund	41,000	2,100	5.1%	43,100	5.0%	Note 5
Utilities	22,925	-	0.0%	22,925	2.7%	
Total other	79,045	4,844	6.1%	83,889	9.7%	
Supplies and expenses	129,642	(5,043)	-3.9%	124,599	14.4%	Note 6
Gross expenses	852,481	22,598	2.7%	875,079	101.4%	
Cost recoveries	(12,720)	1,200	-9.4%	(11,520)	-1.3%	Note 7
Net additional non-recurring expenses not covered by budgets above	15,000	(15,000)	-100.0%	0	0%	Note 8
Estimated net expenses	854,761	8,798	1.0%	863,559	100.1%	
Estimated income	856,746			862,860		
Surplus (Unfunded deficit)	1,985			(699)		

Note 1 - This reflects estimated May 1, 2021 salary increases as well as a small increase for potential new positions.

Note 2 - This reflects increases in benefits costs related to a number of factors including changes as a result of salary increases, rate/premium increases and a small increase for potential new positions. The increase in Parental Leave Supplement reflects increased usage of parental leave benefits.

Note 3 - Student Support includes Tuition Set Aside (TSA), as well as graduate support and undergraduate scholarships and bursaries. The TSA amount (approximately $25 million) is calculated based on a formula mandated by the Ministry of Colleges and Universities. It is to be used for needs based student support programs.

Note 4 - This ongoing budget is being established to support central funding of internally financed capital projects.

Note 5 - The University Fund is used for funding the University's strategic priorities and managing risk.

Note 6 - Supplies and expenses reflects the budget for a variety of non-salary operating expenses of the faculties and academic support units such as supplies, enterprise software, maintenance, professional services, etc. The overall decrease is result of a small reallocation of budget to salaries for potential new positions, net of other various small non-salary budget increases and decreases.

Note 7 - Chargeouts and cost recoveries primarily include recoveries from Ancillary Enterprises (Housing, Food Services, Print & Retail Solutions, Watcard and Parking) for space charges and administrative support. The decrease relates to a decrease in recoveries from ancillary enterprises for chargeouts that are based on their revenues.

Note 8 - Non-recurring expense budget was included in the 2020/21 operating budget to reflect various costs related to non-recurring operating expenses included in that year's operating budget, including financial and operational impacts of COVID-19 such as additional student support, transition to online learning and work, enhanced cleaning and updates to physical space etc. not covered by existing budgets. While some of these costs may extend into the current year, they are not expected to continue on an ongoing basis beyond what can be incorporated into ongoing budgets. Although uncertainties remain relating to the impact of COVID-19, any non recurring impact to operating expenses in 2021/22 is expected to be small. This will be reassessed for consideration in the 2021/22 budget update.

Report of PB Working Group re: Definitions under Policies 23 and 59

Mandate

In response to the joint memo to the Pension & Benefits Committee (PB) dated 28 August 2020 from the provost and the president of FAUW, PB struck a working group to address the main request of the memo:

> *"…We request that the Committee make interpretation decisions to precisely define the following service quantities for faculty and staff:*
> - *Policy 23 – Eligibility for Pension and Insured Benefits: definition of "continuous University of Waterloo service";*
> - *Policy 59 – Reduced Workload to Retirement: definition of "uninterrupted regular full-time service"; and*
> - *Any related items to clarify interpretation."*

Recommendation

The working group recommends that PB:

1. Agree that the interpretation of the ten-year eligibility criteria is such that the ten-year period shall be deemed to have commenced on the earlier of the start date of the regular ongoing appointment or with the start of participation in the temporary benefits program[1] (for those not having a regular ongoing appointment). This interpretation would apply to both Policy 23 and Policy 59 wording as defined in the group's mandate.
2. Agree that eligibility for the full benefits program (including but not limited to LTD and dental benefits) is achieved as follows: (a) at the start date for regular ongoing positions; (b) at the start date for a contract with an initial appointment of two years; or (c) once two years of service is accumulated for consecutive contracts (with a one year minimum since contracts of a lesser duration do not attract benefits).
3. Provide direction to Human Resources to appropriately adjust operational practices to align with the interpretation in (1) and (2) on a reasonable timeline.
4. Affirm the necessity of changes to Policy 23 and Policy 59 to be clear and congruent with the agreed-upon interpretations.
5. Provide the recommended direction in (1) through (4) subject to the receipt of a satisfactory legal opinion, particularly with regard to the impact of Bill 124 compensation restrictions during the 1 May 2021 – 30 April 2024 "moderation period".

Implementation

Contingent upon the legal opinion in (5) supporting the implementation of these changes during the moderation period, the working group recommends the following considerations for implementation:

- Immediate application of the proposed interpretations might not be viewed favourably by all affected employees e.g., addition of mandatory deductions for LTD premiums as part of benefits program where those did not exist currently, which impacts employees' net pay. As such, the working group proposes that the change is applied on a go forward and staggered basis, as follows:

[1] Employees with a definite term/temporary contract of at least one year and a minimum of 33% Full Time Equivalency (FTE) are eligible for the temporary benefits program which includes up to 6 sick days, eligibility for the extended health plan and life insurance with coverage in the amount of one times earnings.

    - Mandatory participation in the full benefits program upon achievement of eligibility as contracts are initiated, extended, and/or renewed on or after July 1, 2021. The effective date for full benefits coverage could occur midway through such a contract.
    - Optional participation in the full benefits program during an existing contract upon achievement of eligibility on or after July 1, 2021 (one-time option). Following notification to HR, the eligible employee would be enrolled in the full benefits program and provide authorization of corresponding payroll deductions.

    [The committee observes that this change impacts temporary staff employees on contract only; definite term appointments and other temporary academic contracts already attract benefits with an initial appointment of two years or consecutive contracts (with a one year minimum) once two years of service is accumulated.]

- It is likely that the changes to the ten-year rule interpretation would be viewed favourably by all employees since it would reduce the waiting period for eligibility for those who do not commence their career with the University in a regular and ongoing position. The working group proposes that even though the change will be applied on a go-forward basis, a review should be conducted by Human Resources to determine whether any cases have occurred since January 1, 2021 that would have benefited from these recommendations.

Financial Implications

The working group estimates the annual financial impact of administering benefits as outlined in Policy 23 is as follows:

- $168,000 per year to the University for the extension of the dental benefit with the assumption that these members claim the same as the average members in the current employee population
    - This estimate cannot be guaranteed, and the ultimate cost to the University could be higher or lower due to the underwriting arrangement in place.
- $120,000 per year for the employees for the extension of the long-term disability benefit, with an average premium deduction of $76.02 monthly
    - Although the premium required for the LTD benefit is fully paid for by the employee, if an employee becomes disabled and qualifies for LTD benefit payments, the University bears the costs associated with continuing to provide pension accrual and ongoing benefits coverage while the employee has LTD status.
- Estimated $200,000 per year on non-cash basis to the University for the extension of post-retirement health benefit eligibility utilizing contract and regular service in the ten-year service definition.

Background Material

Procedure

The working group educated themselves on the situation by reviewing the existing policy language; understanding how the policy language interacts with existing systems and procedures to support policy application; and, considering a variety of hypothetical cases to give attention to “edge case” scenarios where interpretation may not be easily carried out.

For maximum clarity in this report, the definitions in question are included here and are situated in context with the relevant policy language:

Policy 23, section 2(D) Retirees Receiving a Monthly UW Pension

"To be eligible for post-retirement benefits, retirees must have at least 10 years of continuous University of Waterloo service, followed by immediate receipt of a monthly UW pension."

Policy 59, section 2, Reduced Workload to Retirement

"Faculty and staff members who are at least 45 years of age with completion of at least 10 years of uninterrupted regular full-time service immediately prior to the commencement of the arrangement, may request a reduction of their daily, weekly, monthly or annual period of work to as low as 50% of that required for a full-time position. Salary is adjusted proportionately to reflect reduction of work. Leaves of absence, temporary reduced workloads, maternity/parental leaves and sick leaves/LTD are not deemed as interruptions in service for purposes of this policy."

General Findings

The working group discovered two main confounding factors which make the application of the existing policy language difficult:

1. Service criteria wording is different between the two policies (i.e., continuous vs uninterrupted regular full-time) but the same proxy within existing systems has governed application consistently (i.e., 10 years of participation in the full benefits program)
2. Differences exist between faculty and staff due to the application of the eligibility criteria for the benefits program for active employees; currently, the two-year provision to qualify for the full benefits program applies to academic appointments only

Analysis

The working group discussed and explored the costs associated with several scenarios, including the following:

1. Reduce the 10-year eligibility rule to promote simplicity;
   however, this would be considered an expansion of the university's total compensation and it is our understanding that the provisions of Bill 124 would not allow this
2. Revise the eligibility criteria in the Policy to align with the practice in place;
   however, this is seen to be problematic based on differential treatment across faculty and staff populations for benefit eligibility for active employees
3. Align eligibility for post-retirement benefits and the reduced workload to retirement with achievement of 10 years of credited service through the pension plan;
   however, this would be problematic due to the transfer in privilege, bridging periods of service together, and extending eligibility to employee populations currently ineligible for non-pension benefits
4. Adjust the practice in place for benefits eligibility for active employees to align with Policy 23 (thus enabling consistency across all employees) and adjust the application of Policy 23 and 59 to reflect the interpretation that the 10-year eligibility criteria commences on the earlier of the start date of the regular ongoing appointment or with the start of participation in the temporary benefits program (for those not having a regular ongoing appointment).

Appendix

Proposed policy text for future consideration

The current policy wording is not sufficiently clear for its purposes; therefore the working group proposes for consideration the following amendments to clarify on service definitions:

Policy 23, section 2(D) Retirees Receiving a Monthly UW Pension

> *"To be eligible for post-retirement benefits, retirees must have at least 10 years of continuous University of Waterloo service in a* ***[regular]*** *ongoing position, in definite term/temporary consecutive contracts whose lengths are a minimum of one year, or a combination thereof, followed by immediate receipt of a monthly UW pension. Approved leaves of absence, temporary reduced workloads, maternity/parental leaves and sick leaves/LTD are not deemed as interruptions in service for purposes of this policy.*

Policy 59, section 2, Reduced Workload to Retirement

> *"To be eligible to request a reduced workload to retirement arrangement, employees must be at least 45 years of age with completion of at least 10 years of continuous University of Waterloo service in a full-time* ***[regular]*** *ongoing position, in definite term/temporary consecutive contracts whose lengths are a minimum of one year, or a combination thereof, prior to the commencement of the arrangement. Eligible employees may request a reduction of their daily, weekly, monthly or annual period of work to as low as 50% of that required for a full-time position. Salary is adjusted proportionately to reflect reduction of work. Approved leaves of absence, temporary reduced workloads, maternity/parental leaves and sick leaves/LTD are not deemed as interruptions in service for purposes of this policy."*

N.B. The working group noted that the use of the term "**regular**" in Policy 23 and Policy 59 may be conflict with how it is used in other polices and in the MOA and that this text does not explicitly address a couple of edge cases where service is "stitched together" to cover a minor gap in employment.

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The working group also identified several Policy 23 provisions/potential changes that should be reviewed and considered for clarification in light of current practice:

- **Section 2. A:** Clarify that two-year provision can occur with consecutive appointments of duration of less than 2 years but at least 1 year
- **Section 2. B [1]:** Clarify to reflect two or more years following first appointment of at least one year
- **Section 2. B:** Optional LTD is not a component of the current plan design and may not be available in the market despite mention in policy
- **Section 2. D:** Clarify that eligible retirees who were part-time employees prior to retirement receive the flat benefit amount that is in place at time of retirement, not a pro-rated amount
- **Potential new section:** Clarify a minimum threshold for access to benefits is a 33% FTE commitment with the exception of some special arrangements for post-doc fellows, the employee must be paid through UW payroll (or through St. Jerome's payroll). The Board of Governors approved this requirement in June 1988 but the Policy does not reflect it.
- **Potential new section:** Clarify "stitching" together service provision for breaks in employment for consistency. Note differences in pension plan stitching vs. benefits plan. Breaks in service was raised as a potential issue by the working group but given the existing provisions in University Policies, this issue requires subsequent investigation and consideration.