Office of the Superintendent of Financial Institutions Canada
Office of the Chief Actuary

Bureau du surintendant des institutions financières Canada
Bureau de l´actuaire en chef

Actuarial report 20th

on the Pension plan for the Public Service of Canada

as at 31 March 2023

Canada

Office of the Chief Actuary
Office of the Superintendent of Financial Institutions Canada
12th Floor, Kent Square Building
255 Albert Street
Ottawa, Ontario
K1A 0H2

E-mail: oca-bac@osfi-bsif.gc.ca
Web site: www.osfi-bsif.gc.ca

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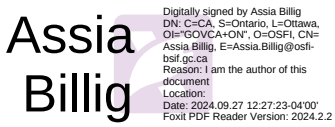
The Honourable Anita Anand, P.C., MP.
President of Treasury Board
Ottawa, Canada
K1A 0R5

Dear Minister:

Pursuant to Section 6 of the *Public Pensions Reporting Act*, I am pleased to submit the report on the actuarial review as at 31 March 2023 of the pension plan for the Public Service of Canada. This actuarial review is in respect of pension benefits and contributions which are defined by Parts I, III and IV of the *Public Service Superannuation Act*, the *Special Retirement Arrangements Act* and the *Pension Benefits Division Act*.

Yours sincerely,



Assia Billig, FCIA, FSA
Chief Actuary

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1 Highlights of the report

Main findings for actuarial report on the Pension plan for the Public Service of Canada as at 31 March 2023		
	Superannuation Account (Service prior to 1 April 2000)	**Pension Fund** (Service since 1 April 2000)
Financial position	➢ The balance of the Superannuation Account is $91,353 million.	➢ The actuarial value of the assets in respect of the Pension Fund is $169,178 million.
	➢ The actuarial liability for service prior to 1 April 2000[a] is $97,403 million.	➢ The actuarial liability for service since 1 April 2000 is $137,172 million.
	➢ The resulting actuarial shortfall is $6,050 million.	➢ The resulting actuarial surplus is $32,006 million.
Funded ratio/Special credits or payments	➢ It is expected that the government will make a one-time nominal credit of $6,425 million as at 31 March 2025 to eliminate the actuarial shortfall. ➢ The payment takes into account the interest on the shortfall accumulated from 31 March 2023 to 31 March 2025.	➢ The funded ratio is 123.3%.
Member contribution rates	➢ No contribution is made to the Superannuation Account.	➢ For calendar year 2025, the contribution rates are assumed to be: Group 1: 9.06% of earnings below the YMPE and 11.64% of earnings above the YMPE Group 2: 7.95% of earnings below the YMPE and 10.53% of earnings above the YMPE
Projected current service cost (Calendar year 2025)	➢ No current service cost for the Superannuation Account.	➢ Member contributions: $3,373 million. ➢ Government contributions: $3,395 million. ➢ Ratio of government to contributor service cost: 1.01

a. The actuarial liability for service prior to 1 April 2000 refers to the actuarial liability for service accrued prior to that date except for service elections made on or after 1 April 2000. Service elections made on or after 1 April 2000 are deemed to be service accrued since that date.

2 Introduction

This actuarial report on the pension plan for the Public Service of Canada (PSPP) was made pursuant to the *Public Pensions Reporting Act* (PPRA).

This actuarial valuation is as at 31 March 2023 and is in respect of pension benefits and contributions defined by Parts I, III and IV of the *Public Service Superannuation Act* (PSSA), the *Special Retirement Arrangements Act* (SRAA), which covers the Retirement Compensation Arrangements Regulations No. 1 and No. 2 (RCA), and the *Pension Benefits Division Act* (PBDA).

The previous actuarial report was prepared as at 31 March 2020. The next periodic review is scheduled to occur no later than 31 March 2026.

2.1 Purpose of actuarial report

The purposes of this actuarial valuation are to:

- determine the state of the Public Service Superannuation Account (Superannuation Account), the Public Service Pension Fund (Pension Fund) and the RCA Accounts;
- determine the projected current service costs for the Pension Fund and the RCA Accounts; and
- assist the President of the Treasury Board in making informed decisions regarding the financing of the government's pension benefit obligation.

This report may not be suitable for another purpose.

2.2 Structure of the report

Section 3 presents a general overview of the valuation basis used in preparing this actuarial report and section 4 presents the financial position of the plan as well as the reconciliation of the changes in financial position and the cost certificate.

Finally, section 5 provides the actuarial opinion for the current valuation.

The various appendices provide a summary of the plan provisions, a description of data, methodologies and assumptions employed. The appendices also provide pension plan projections, scenarios illustrating downside risks and the uncertainty of results resulting from future investment returns.

Numbers shown in the tables throughout this report may not add up due to rounding.

3 Valuation basis

3.1 Valuation inputs

This report is based on pension benefit provisions enacted by the legislation, summarized in Appendices A and B.

No amendments were made to the PSSA since the previous valuation. Minor amendments were applied to the *Public Service Superannuation Regulations* since the previous valuation. Those amendments did not have any impact on the actuarial valuation of the plan.

The Funding Policy for the Public Sector Pension Plans (Funding Policy) was approved by the Treasury Board in 2018. The policy provides guidance and rules to support prudent governance of the plans[1] and ensures that sufficient assets are accumulated to meet the cost of the accrued pension benefits. The methods, assumptions and results of this actuarial valuation are consistent with the provisions of the Funding Policy.

The financial data on which this valuation is based on are composed of:

- the Pension Fund invested assets that the government has earmarked for the payment of benefits for service since 1 April 2000;
- the Superannuation Account established to track the government's pension benefit obligations for service prior to 1 April 2000.
- the RCA Accounts established to track the pension benefit obligations in excess of those that can be provided under the Income Tax Act limits for registered pension plans.

These pension assets and account balances are summarized in Appendix C.

The membership data are provided by the Department of Public Services and Procurement Canada (PSPC). Membership data and tests performed on them are summarized in Appendix D.

The valuation was prepared using accepted actuarial practices, methods and assumptions, which are summarized in Appendices E to I.

All actuarial assumptions used in this report are best-estimate assumptions and do not include any margin for adverse deviations. They are independently reasonable and appropriate in aggregate for the purposes of the valuation at the date of this report.

Actuarial assumptions used in the previous report were revised based on economic trends and demographic experience. A complete description of the assumptions is detailed in Appendices F to I.

[1] The plans refer to the Pension Plans for the Public Service of Canada, the Canadian Forces – Regular Force and Reserve Force and the Royal Canadian Mounted Police.

A summary of the ultimate economic assumptions used in this report and those used in the previous report is shown in the following table.

Table 1 Ultimate best-estimate economic assumptions

	31 March 2023	31 March 2020
Assumed level of inflation	2.0%	2.0%
Real increase in average pensionable earnings	0.5%	0.7%
Real increase in YMPE and MPE[a]	0.9%	1.0%
Real rate of return on the Pension Fund	4.0%	3.9%
Real projected yield on the Superannuation Account and RCA accounts	2.0%	2.1%

a. Year's Maximum Pensionable Earnings and Maximum Pensionable Earnings.

The following table presents a summary of the demographic assumptions used in this report and those used in the previous report.

Table 2 Demographic assumptions

	31 March 2023	31 March 2020
Promotional and seniority rate of increase for males	0.6% to 6.1%	0.6% to 5.9%
Promotional and seniority rate of increase for females	0.7% to 6.3%	0.7% to 6.1%
Male cohort life expectancy at age 65[a]	22.5 years	22.4 years
Female cohort life expectancy at age 65[a]	24.1 years	24.1 years
Group 1 expected average retirement age	60.3 years	60.1 years
Group 2 expected average retirement age	62.2 years	62.1 years

a. Life expectancy based on non-disabled members with assumed future mortality improvements.

3.2 Subsequent events

Certain occupational groups who promote the safety and security of Canadians are eligible to early retirement: retirement after 25 years of service without a pension reduction. The government has announced on 13 June 2024 its intent to expand this early pension eligibility for frontline and security workers under the PS pension plan. Since the details are not yet available and legislative changes have not been introduced yet, we have not reflected any of these potential changes in this report. Pursuant to section 4 of the PPRA, a report on an actuarial review of the PS pension plan could be required when the legislative changes are introduced.

The *Pay Equity Act,* which came into force on 31 August 2021, applies to all federally regulated employers with 10 employees or more. On 19 August 2024, the Pay Equity Commissioner has granted Treasury Board Secretariat the requested extension of 3 years to post a final pay equity plan for employees of Core Public Administrations by 31 August 2027. Since federal employers are at various steps of the pay equity process, the details of the expected changes to compensation are not known, and the impact of the implementation of the *Pay Equity Act* has not been considered in this report.

As of the date of the signing of this report, we were not aware of any other subsequent events that may have a material impact on the results of this valuation.

4 Valuation results

This report is based on the pension benefit provisions enacted by the legislation, summarized in Appendices A and B, and the financial and membership data, summarized in Appendices C and D, respectively. The valuation was prepared using accepted actuarial practices, methods and assumptions summarized in Appendices E to I. Emerging experience that differs from the corresponding assumptions will result in gains or losses to be revealed in subsequent reports.

4.1 PSSA – Financial position

The Superannuation Account is credited with all PSSA member contributions and government costs prior to 1 April 2000, as well as with prior service contributions and costs for elections made prior to 1 April 2000. Beginning on 1 April 2000, member and government contributions are no longer credited to the Superannuation Account. Rather, they are credited to the Pension Fund, and the total amount of contributions net of benefits and administrative expenses paid is transferred to the Public Sector Pension Investment Board (PSP Investments) and invested in the financial markets.

This section presents the financial positions for both PSSA financing arrangements as at 31 March 2023. The results of the previous valuation are also shown for comparison.

Table 3 State of the Superannuation Account
(in $ millions)

Components of financial position	31 March 2023	31 March 2020
Assets		
Recorded Account balance	91,343	91,516
Present value of prior service contributions	10	21
Total assets	91,353	91,537
Actuarial liability		
Active contributors	7,368	12,422
Non-active contributors	140	111
Retirement pensioners	78,689	75,391
Deferred pensioners	626	875
Disability pensioners	2,431	2,523
Surviving dependents	7,567	6,985
Outstanding payments	0	7
Administrative expenses	582	523
Total actuarial liability	97,403	98,837
Actuarial excess or (shortfall)	(6,050)	(7,300)

In accordance with the PSSA, the actuarial shortfall of $6,050 million could be amortized over a maximum period of 15 years beginning on 31 March 2025. If the shortfall is amortized over the maximum period, 15 equal annual credits of $514 million could be made to the Superannuation Account. The time, manner and amount of such credits are to be determined by the President of the Treasury Board.

It is expected that the government will eliminate the actuarial shortfall of the Superannuation Account

by making a one-time credit of $6,425 million as at 31 March 2025 to take into account the interest on the shortfall accumulated from 31 March 2023 to 31 March 2025.

Table 4 Financial position of the Pension Fund
(Service Since 1 April 2000) (in $ millions)

Components of financial position	31 March 2023	31 March 2020
Actuarial value of assets		
Market value of assets	177,974	123,433
Actuarial smoothing adjustment[a]	(9,281)	1,248
Present value of prior service contributions	485	728
Total actuarial value of assets	169,178	125,409
Actuarial liability		
Active contributors	79,966	68,398
Non-active contributors	310	210
Retirement pensioners	49,377	36,330
Deferred pensioners	3,403	2,907
Disability pensioners	2,582	1,929
Surviving dependents	1,437	963
Outstanding payments	97	172
Total actuarial liability	137,172	110,909
Actuarial surplus/(deficit)	32,006	14,500

a. Includes the unrecognized investment gains and losses as well as the impact of the application of corridor, if applicable.

As at 31 March 2023, the Pension Fund has a surplus of $32,006 million and the funded ratio is 123.3%. As such, no special payments are required and there is no non-permitted surplus[2].

[2] A non-permitted surplus exists when the amount by which the actuarial value of assets exceed the liabilities is greater than 25 percent of the amount of liabilities.

4.2 PSSA – Reconciliation of the changes in financial position

Table 5 shows the reconciliation of the changes in the financial positions of the Superannuation Account and the Pension Fund. Explanations of the items largely responsible for the changes follow the table.

Table 5 Reconciliation of financial position from plan year 2020 to 2023 by financing arrangement
(in $ millions)

Components of reconciliation of the financial position	Superannuation Account actuarial excess/(shortfall)	Pension Fund actuarial surplus/(deficit)
Financial position as at 31 March 2020	(7,300)	14,500
Recognized investment gains or (losses) as at 31 March 2020	n/a	(1,248)
Change in methodology	(184)	(823)
Revised financial position as at 31 March 2020	(7,484)	12,429
Expected interest on revised financial position	(766)	1,959
Special credits or payments with interest	8,047	n/a
Net experience gains and (losses)	(4,330)	21,219
Revision of actuarial assumptions	(1,358)	5,961
Change in the present value of prior service contributions	(12)	(281)
Change in the present value of administrative expenses	(147)	n/a
Unrecognized investment gains or (losses) as at 31 March 2023	n/a	(9,281)
Financial position as at 31 March 2023	(6,050)	32,006

4.2.1 Recognized investment gains or losses as at 31 March 2020

An actuarial asset valuation method that minimizes the impact of short-term fluctuations on the market value of assets was used in the previous valuation report, causing the actuarial value of the Pension Fund assets to be $1,248 million more than its market value.

4.2.2 Change in methodology

Improvements to the actuarial valuation software were made. The impacts of these improvements increased the Superannuation Account liability as at 31 March 2020 by $184 million and the Pension Fund liability as at the same date by $823 million.

4.2.3 Expected interest on revised initial financial position

The amount of interest expected to accrue during the intervaluation period increased the shortfall by $766 million for the Superannuation Account and increased the surplus by $1,959 million for the Pension Fund.

These amounts of interest were based on the Superannuation Account yields and the Pension Fund returns projected in the previous report for the three-year intervaluation period.

4.2.4 Special credits and payments made in the intervaluation period

The government made a one-time special credit as at 31 March 2022 to eliminate the $7,300 million shortfall reported in the Superannuation Account as at 31 March 2020. After factoring the expected interest, this credit resulted in an increase of $8,047 million in the recorded balance of the Superannuation Account as at 31 March 2023.

No deficit was reported in the Pension Fund as at 31 March 2020. Thus, no special payments were made during the intervaluation period.

4.2.5 Experience gains and (losses)

Since the previous valuation, experience gains and losses increased the Superannuation Account shortfall by $4,330 million and increased the Pension Fund surplus by $21,219 million. The main experience gain and loss items are shown in the following table followed by explanatory notes (i) through (iii). Gains are represented by positive numbers and losses are represented by negative numbers.

Table 6 Experience gains and losses from 31 March 2020 to 31 March 2023 by financial arrangement
($ millions)

Components of experience gains and (losses)	Superannuation Account	Pension Fund
Terminations	44	(50)
Retirements	(160)	(159)
Disabilities with an annuity	(2)	(123)
Active deaths	52	41
Retired pensioner mortality	(192)	(394)
Disabled pensioner mortality	81	15
Widow(er) mortality	52	7
Investment earnings (i)	114	26,730
Service/contributions difference	(4)	(343)
Expected/actual disbursements	(114)	(307)
Corrections to the population data	75	(211)
Pension indexation (ii)	(4,064)	(2,489)
Promotional and seniority increases	35	91
Economic salary increases (iii)	(127)	(1,602)
YMPE and MPE increases	3	48
Pension benefit division	(6)	(52)
Administrative expenses	(23)	(22)
Miscellaneous	(95)	38
Total experience gains and (losses)	(4,330)	21,219

i. The rates of interest credited to the Superannuation Account were in aggregate higher than the corresponding projected Account yields in the previous valuation resulting in an experience gain and reducing Superannuation Account shortfall by $114 million. The return realized on the Pension Fund for plan years 2021 to 2023 were 18.4%, 10.9% and 4.4% versus the expected returns of 4.2%, 5.6%, and 5.2%, respectively. Consequently, before applying the adjusted market value method, the Pension Fund experienced an investment gain, increasing the surplus by $26,730 million over the three-year intervaluation period.

ii. The pension benefit indexation rates for the period from January 2021 to January 2023 were 1.0%, 2.4%, and 6.3% respectively versus the expected indexation of 1.0%, 1.9%, and 1.9%, respectively. Consequently, the Superannuation Account shortfall increased by $4,064 million and the Pension Fund surplus decreased by $2,489 million.

iii. Higher than anticipated economic salary increases resulted in an increase of the Superannuation Account shortfall by $127 million and a decrease of $1,602 million of the Pension Fund surplus.

4.2.6 Revision of actuarial assumptions

Actuarial assumptions were revised based on economic trends and demographic experience as described in Appendices F to I. These revisions have increased the Superannuation Account shortfall by $1,358 million and increased the Pension Fund surplus by $5,961 million. The impact of these revisions is shown in Table 7 with the most significant items discussed thereafter.

Table 7 Impact of the revision of actuarial assumptions on the financial position
(in $ millions)

Actuarial assumptions	Superannuation Account	Pension Fund
Economic assumptions		
Yields and rates of return	1,270	8,078
Increases in YMPE/MPE	11	245
Increases in pensionable earnings	(71)	(841)
Pension indexation	(2,994)	(2,080)
Transfer value rates	0	184
Demographic assumptions		
Disabled pensioner mortality rates	28	26
Spouse mortality rates	329	138
Healthy contributor mortality rates	0	8
Healthy pensioner mortality rates	571	406
Mortality improvement factors	(196)	(139)
Withdrawal rates	0	(48)
Retirement rates	51	431
Disability rates	(6)	17
Seniority and promotional salary increases	(2)	(544)
Proportion opting for a deferred annuity	0	200
Family composition	(349)	(120)
Net impact of revision	**(1,358)**	**5,961**

The net impact of the revision of the assumptions is largely attributable to the changes in economic assumptions.

The following revisions were made to the economic assumptions used in the previous report:

- ultimate real rate of return on the Pension Fund was increased from 3.9% to 4.0%;
- real rates of return on the Fund during plan years 2024 to 2034 were increased on average from 3.6% to 3.9%;
- ultimate real projected yield on the Superannuation Account was decreased from 2.1% to 2.0%;
- real projected yields on the Superannuation Account during plan years 2024 to 2043 were increased on average from 1.7% to 1.9%;
- real increases in pensionable earnings during plan years 2024 to 2027 were increased on average from 2.2% to 2.8%;
- ultimate real increase in pensionable earnings was decreased from 0.7% to 0.5%.

Details of the changes in economic assumptions are described in Appendix F.

Details of the changes in demographic assumptions are described in Appendix G.

4.2.7 Change in the present value of prior service contributions

New members' prior service election paid through instalments since the last report and changes to payment schedules for some members resulted in a change in the present value of prior service contributions. This change increased the Account shortfall by $12 million and decreased the Pension Fund surplus by $281 million.

4.2.8 Change in the present value of administrative expenses

The administrative expense assumption was increased by 0.05% and corresponds to 0.45% of total pensionable payroll.

For plan year 2024, 37% of total administrative expenses are being charged to the Superannuation Account; it is assumed that the proportion charged to the Superannuation Account will reduce at the rate of 2% per year as in the previous report. An increase in the expected present value of administrative expenses charged to the Superannuation Account due to demographic changes and the increase of the administrative expense assumption resulted in an increase of the Superannuation Account shortfall as at 31 March 2023 of $147 million.

4.2.9 Unrecognized investment gains

An actuarial asset valuation method that minimizes the impact of short-term fluctuations in the market value of assets was also used for this valuation. This method, which is described in Appendix E.1, resulted in an actuarial value of assets that is $9,281 million less than the market value of the Pension Fund assets as at 31 March 2023.

4.3 PSSA – Cost certificate

4.3.1 Current service cost

The details of the current service cost for plan year[3] 2025 and reconciliation with the 2022 current service cost are shown below.

Table 8 Current service cost for plan year 2025 (in $ millions)	
Member required contributions	3,274
Government current service cost	3,295
Total current service cost	6,569
Expected pensionable payroll (in $ millions)	35,839
Total current service cost as % of expected pensionable payroll	18.33

Table 9 Reconciliation current service cost (as a percentage of pensionable payroll)	
Component of reconciliation of current service cost	
Current service cost for plan year 2022	19.67
Expected current service cost change between plan years 2022 and 2025	(0.30)
Change in methodology	0.22
Intervaluation experience	(0.08)
Changes in administration expenses assumption	0.03
Changes in demographic assumptions	0.15
Changes in economic assumptions	(1.36)
Current service cost for plan year 2025	18.33

[3] Any reference to a given plan year throughout this report should be taken as the 12-month period ending 31 March of the given year.

4.3.2 Projection of current service cost

The current service cost is borne jointly by the plan members and the government. Group 1 and Group 2 (as defined in Note A.4.1) member contribution rates are determined such that the government share of the current service cost contribution is 50%. They are determined on a calendar year basis and are shown in the following table.

Table 10 Member contribution rates

Calendar year	Group 1		Group 2	
	Below YMPE	Above YMPE	Below YMPE	Above YMPE
2025	9.06%	11.64%	7.95%	10.53%
2026	9.10%	11.69%	8.00%	10.58%
2027	9.15%	11.75%	8.04%	10.63%

The projection of the current service costs on a plan year basis, expressed in dollar amount as well as in percentage of the projected *pensionable payroll* (as defined in Note A.4.2) are shown in the following table.

Table 11 Projection of the current service cost on a plan year basis

Plan year [a]	in $ millions			as a percentage of pensionable payroll			Portion borne by the government[b]
	Contributors	Government	Total	Contributors	Government	Total	
2025	3,274	3,295	6,569	9.14%	9.19%	18.33%	50.14%
2026	3,414	3,435	6,849	9.19%	9.25%	18.44%	50.16%
2027	3,534	3,555	7,089	9.23%	9.28%	18.51%	50.14%
2028	3,722	3,744	7,466	9.26%	9.31%	18.57%	50.13%

a. The amounts are theoretical in nature since contribution rates are determined on a calendar year basis and not a plan year basis.
b. Actual and deemed Operational (as defined in Note A.4.1) members contribution rates are those of Group 1 members. Deemed operational members contribute an additional 0.62% of their payroll to maintain their entitlement to the operational benefits. Government contributions for Operational members are higher than 50% of their current service cost, resulting in an overall portion borne by the government being slightly over 50%.

The following tables show projections of current service cost expressed in millions of dollars and as a percentage of the expected pensionable payroll for the three calendar years following the expected tabling of this report. The ratio of government current service cost to contributor current service cost is also shown. Table 13 and Table 14 show the same results for Group 1 and Group 2, respectively.

The projections of current service cost shown in these tables are based on the member[4] contribution rates presented in Table 10 and government contribution rates required to fund the current service cost. The PSSA allows the President of the Treasury Board to reduce contributions in certain situations.

Table 12 Projection of the current service cost on a calendar year basis

Calendar year	in $ millions			as a percentage of pensionable payroll			Ratio of government to contributor current service cost
	Contributors	Government	Total	Contributors	Government	Total	
2025	3,373	3,395	6,768	9.17%	9.22%	18.39%	1.01
2026	3,499	3,520	7,019	9.21%	9.26%	18.47%	1.01
2027	3,670	3,692	7,362	9.24%	9.29%	18.53%	1.01

Table 13 Projection of the current service cost on a calendar year basis – Group 1

Calendar year	in $ millions			as a percentage of pensionable payroll			Ratio of government to contributor current service cost
	Contributors	Government	Total	Contributors	Government	Total	
2025	1,681	1,703	3,384	10.00%	10.12%	20.12%	1.01
2026	1,656	1,677	3,333	10.06%	10.19%	20.25%	1.01
2027	1,641	1,662	3,303	10.13%	10.26%	20.39%	1.01

Table 14 Projection of the current service cost on a calendar year basis – Group 2

Calendar year	in $ millions			as a percentage of pensionable payroll			Ratio of government to contributor current service cost
	Contributors	Government	Total	Contributors	Government	Total	
2025	1,692	1,692	3,384	8.47%	8.47%	16.94%	1.00
2026	1,843	1,843	3,686	8.56%	8.56%	17.12%	1.00
2027	2,030	2,030	4,060	8.63%	8.63%	17.26%	1.00

[4] Any reference to member in this report should be read as *contributor* as defined in the PSSA.

4.3.3 Administrative expenses

Based upon the assumptions described in Appendix F.3.5, the Pension Fund administrative expenses are included in the total current service costs and are estimated to be as follows.

Table 15 Pension fund administrative expenses

Plan Year	($ millions)
2025	104
2026	111
2027	119
2028	129

The Superannuation Account administrative expenses have been capitalized and are shown as a liability in the balance sheet.

4.3.4 Contributions for prior service elections

Member and government contributions for prior service elections were estimated as follows:

Table 16 Estimated contributions for prior service buyback
(in $ millions)

	Superannuation Account		Pension Fund	
Plan Year	Contributors	Government	Contributors	Government
2025	1	1	47	38
2026	1	1	41	33
2027	1	1	36	28
2028	1	1	31	24

4.4 PSSA – Sensitivity of valuation results to economic assumptions

The information required by statute, which is presented in the main report, has been derived using best-estimate assumptions regarding future demographic and economic trends. The key best-estimate assumptions, i.e. those for which changes within a reasonable range have the most significant impact on the long-term financial results, are described in Appendices F and G.

Given the length of the projection period and the number of assumptions required, it is unlikely that the actual experience will develop precisely in accordance with the best-estimate assumptions. Individual sensitivity tests have been performed, projecting the pension plan's financial status using alternative assumptions.

Table 17 shows the effect on the plan year 2025 current service cost as well as the effect on the liabilities at the valuation date for the Superannuation Account and the Pension Fund when key economic assumptions are varied by one percentage point per annum.

Table 17 Sensitivity of valuation results to variations in key economic assumptions

	Current service cost as a percentage of pensionable payroll		Actuarial liability ($ millions)			
	Pension Fund		Superannuation Account		Pension Fund	
Assumption(s) varied	Plan year 2025	Effect	As at 31 March 2023	Effect	As at 31 March 2023	Effect
None (i.e. current basis)	18.33	None	97,403	None	137,172	None
Account yield/Fund rate of return 1% higher [a]	14.39	(3.94)	87,643	(9,760)	116,740	(20,432)
Account yield/Fund rate of return 1% lower [a]	23.80	5.47	109,122	11,719	163,672	26,500
Pension indexation 1% higher	20.70	2.37	108,514	11,111	154,102	16,930
Pension indexation 1% lower	16.38	(1.95)	87,938	(9,465)	123,038	(14,134)
Salary, YMPE, and MPE 1% higher	20.55	2.22	97,454	51	143,273	6,101
Salary, YMPE, and MPE 1% lower	16.48	(1.85)	97,361	(42)	131,865	(5,307)
Inflation 1% higher [b]	18.01	(0.32)	97,030	(373)	135,376	(1,796)
Inflation 1% lower [b]	18.66	0.33	97,795	392	139,040	1,868

a. Includes sensitivity to transfer value real interest rates.
b. The inflation is an underlying assumption for most economic assumptions. A change in inflation impacts nominal investment yield/return, pension indexation, as well as salary, YMPE, and MPE. Transfer value real interest rates are not impacted by the inflation change.

The differences between the results above and those shown in the valuation can also serve as a basis for approximating the effect of other numerical variations in one of a key assumption to the extent that such effects are assumed to be linear.

4.5 RCA – Financial position

This section shows the financial position of the RCA accounts as at 31 March 2023. The results of the previous valuation are also shown for comparison.

Table 18 State of the RCA No. 1 Account
(in $ millions)

	31 March 2023	31 March 2020
RCA No. 1 recorded account balance	1,404	1,315
Refundable tax	1,391	1,297
Present value of prior service contributions	4	3
Total assets	2,799	2,615
Actuarial liability		
Pensionable excess earnings from contributors	769	689
Pensionable excess earnings from pensioners	1,355	1,003
Survivor allowance from contributors	168	99
Survivor allowance from pensioners	401	363
Former deputy heads	38	38
Total actuarial liability	2,731	2,192
Actuarial excess or (shortfall)	68	423

The sum of the recorded balance of the RCA No. 1 Account, the refundable tax and the present value of prior service cost contributions as at 31 March 2023 is $2,799 million, which exceeds the actuarial liability of $2,731 million by $68 million.

Table 19 State of the RCA No. 2 Account
(in $ millions)

	31 March 2023	31 March 2020
RCA No. 2 recorded account balance	528	628
Refundable tax	546	644
Total assets	1,074	1,272
Actuarial liability	1,048	1,142
Actuarial excess or (shortfall)	26	130

Since the previous valuation, the actuarial excess of the RCA No. 2 Account reduced from $130 million to $26 million.

4.6 RCA – Current service cost

4.6.1 RCA No. 1 – Current service cost

The current service cost, which is borne jointly by the members and the government, increased by 0.03% to reach 0.21% of pensionable payroll in this valuation for plan year 2025 from 0.18% of pensionable payroll calculated in the previous actuarial report.

The RCA No. 1 current service cost is estimated to be 0.21% of pensionable payroll for plan year 2025 to 2028. The following table shows the estimated RCA No. 1 current service cost in millions of dollars for the next four plan years.

Table 20 RCA No. 1 – Projection of the current service cost on a plan year basis
(in $ millions)

	Plan year[b]			
Components of the current service cost	2025	2026	2027	2028
Excess pensionable earnings	54.2	56.2	58.0	60.8
Survivor allowance	20.5	21.1	21.6	22.2
Deputy head	0.3	0.0	0.0	0.0
Total	75.0	77.3	79.6	83.0
Member contributions				
Earnings above the Maximum Pensionable Earnings (MPE)[a]	12.4	12.8	13.2	13.9
Deputy head	0.1	0.0	0.0	0.0
Total	12.5	12.8	13.2	13.9
Government current service cost	62.5	64.5	66.4	69.1

a. As defined in Appendix F.2.3
b. The amounts are theoretical in nature since contribution rates are determined on a calendar year basis and not a plan year basis.

The following table shows the projected current service cost in millions of dollars and as a percentage of the expected pensionable payroll for the three calendar years following the expected tabling of this report. The ratio of government current service cost to contributor current service cost is also shown.

Table 21 RCA No. 1 – Projection of the current service cost on a calendar year basis

Calendar year	in $ millions			as a percentage of pensionable payroll			Ratio of government to contributor current service cost[a]
	Contributors	Government	Total	Contributors	Government	Total	
2025	12.6	64.1	76.7	0.03%	0.18%	0.21%	5.09
2026	13.1	66.0	79.1	0.03%	0.18%	0.21%	5.04
2027	13.7	68.5	82.2	0.03%	0.18%	0.21%	5.00

a. Calculated on contributions in dollars

4.6.2 RCA No. 2 – Current service cost

RCA No. 2 was used as an early retirement incentive (ERI) as part of a downsizing initiative by the Government. There is currently no service cost for this program.

4.7 Summary of estimated government costs

Table 22 summarizes the estimated total government credits for the RCA No. 1 and the Superannuation Account on a plan year basis. Table 23 summarizes the estimated total government costs for the Pension Fund on a plan year basis.

Table 22 Estimated government credits
(in $ millions)

	RCA No. 1	Superannuation Account		
Plan year [a]	Government current service cost	Total prior service contributions	Expected special credits	Total government credits
2025	63	1	6,425	6,489
2026	64	1	0	65
2027	66	1	0	67
2028	69	1	0	70

a. The amounts are theoretical in nature since contribution rates are determined on a calendar year basis and not a plan year basis.

Table 23 Estimated government cost - Pension Fund
(in $ millions)

Plan year[a]	Government current service cost	Total prior service contributions	Total government contributions
2025	3,295	38	3,333
2026	3,435	33	3,468
2027	3,555	28	3,583
2028	3,744	24	3,768

a. The amounts are theoretical in nature since contribution rates are determined on a calendar year basis and not a plan year basis.

5 Actuarial opinion

In our opinion, considering that this report was prepared pursuant to the *Public Pensions Reporting Act*,

- the valuation data on which the valuation is based are sufficient and reliable for the purposes of the valuation;
- the assumptions used are individually reasonable and appropriate in aggregate for the purposes of the valuation; and
- the methods employed are appropriate for the purposes of the valuation.

This report has been prepared, and our opinion given, in accordance with accepted actuarial practice in Canada. In particular, this report was prepared in accordance with the Standards of Practice (General Standards and Practice – Practice-Specific Standards for Pension Plans) published by the Canadian Institute of Actuaries.

Subsequent events described in section 3.2 were not considered in this valuation since the details were not available at the time the report was prepared. To the best of our knowledge, after discussion with Public Services and Procurement Canada and the Treasury Board of Canada Secretariat, there were no other subsequent events between the valuation date and the date of this report that would have a material impact on the results of this valuation.

Assia Billig

Digitally signed by Assia Billig
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Reason: I am the author of this document
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Foxit PDF Reader Version: 2024.2.2

Assia Billig, FCIA, FSA
Chief Actuary

Annie St-Jacques

Digitally signed by Annie St-Jacques
DN: C=CA, S=Ontario, L=Ottawa, OI="GOVCA+ON", O=OSFI, CN=Annie St-Jacques, E=Annie.St-Jacques@osfi-bsif.gc.ca
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Annie St-Jacques, FCIA, FSA

Francois Lemire

Digitally signed by Francois Lemire
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Foxit PDF Reader Version: 2024.2.2

François Lemire, FCIA, FSA

Larose, Alexandre

Digitally signed by Larose, Alexandre
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Alexandre Larose, FCIA, FSA

Ottawa, Canada
27 September 2024

Appendix A — Summary of pension benefit provisions

The government has been providing its employees with a pension plan since 1870. Pensions for members of the Public Service are provided primarily under the *Public Service Superannuation Act* (PSSA) as enacted in 1954 and modified thereafter. Benefits are also provided to public servants under the *Special Retirement Arrangements Act*. Benefits may be modified in accordance with the *Pension Benefits Division Act* if there is a breakdown of a spousal union.

Changes since the last valuation

Minor amendments were applied to the *Public Service Superannuation Regulations* since the previous valuation. Those amendments did not have any impact on the actuarial valuation of the plan.

Summary of pension benefit provisions

Summarized in this Appendix are the pension benefits provided under the PSSA registered provisions, which are in compliance with the *Income Tax Act*. The portion of the benefits in excess of the *Income Tax Act* limits for registered pension plans is provided under the retirement compensation arrangements described in Appendix B.

In case of any discrepancy between this summary and the legislation, the legislation shall prevail.

A.1 Membership

Subject to the exceptions mentioned in the next paragraph, membership in the plan is compulsory for all full-time and part-time employees working 12 or more hours per week (except those who were grandfathered as at 4 July 1994) in the Public Service. This includes all positions in any department or portion of:

- the Executive Government of Canada;
- the Senate and the House of Commons;
- the Library of Parliament; and
- any board, commission or corporation listed in a Schedule to the Act, as well as those designated as contributors by the President of the Treasury Board either individually or as members of a class for persons engaged as seasonal employees and some others.

The main groups of persons employed in the Public Service to which the Act does not apply are:

- part-time employees working less than 12 hours per week;
- persons locally engaged outside Canada;
- employees of some Crown corporations, boards or commissions covered by their own pension plans; and
- seasonal employees, and some others, unless designated as contributors by the President of the Treasury Board.

Since the previous valuation, no entities have left the plan.

A.2 Contributions

A.2.1 Members

Different contribution rates apply to Group 1 and Group 2 contributors (as defined in Note A.4.1). The expected rates are consistent with the government objective of maintaining a 50:50 employer to employee current service cost sharing ratio.

During the first 35 years of pensionable service, members contribute according to the rates shown in the following table.

Table 24 Member contribution rates

	Group 1		Group 2	
Calendar year	Below YMPE	Above YMPE	Below YMPE	Above YMPE
2023[a]	9.35%	12.37%	7.93%	11.72%
2024[a]	9.35%	12.25%	7.94%	11.54%
2025	9.06%	11.64%	7.95%	10.53%
2026	9.10%	11.69%	8.00%	10.58%
2027	9.15%	11.75%	8.04%	10.63%

a. The contribution rates for calendar years 2023 and 2024 were established in the previous valuation.

After 35 years of pensionable service, members contribute only 1% of pensionable earnings. The total pensionable earnings used to determine the contribution rates excludes the earnings from those members with more than 35 years of pensionable service.

Actual and deemed operational members (from Correctional Service Canada (CSC)) contribution rates are those of Group 1 members. In order to keep their rights to an early retirement benefit, deemed operational members contribute an additional 0.62% of their payroll during a calendar year to maintain their entitlement to the operational benefits.

A.2.2 Government

A.2.2.1 Current service

The government determines the normal monthly contribution as the amount which, when combined with the required contributions by members in respect of current service and expected interest earnings, is sufficient to cover the cost, as estimated by the President of the Treasury Board, of all future payable benefits that have accrued in respect of pensionable service during that month and the Pension Fund administrative expenses incurred during that month.

A.2.2.2 Elected prior service

The government matches member contributions made to the Superannuation Account for prior service elections; however, it makes no contributions if the member is paying the double rate.

Government contributions to the Pension Fund in respect of elected prior service are calculated using the same ratio of Government contributions to employee contributions as for the current service cost. For members paying the double rate, the government contributes only the excess of the ratio of

Government contributions to employee contributions over 1.

A.2.2.3 Actuarial excess and surplus

The PSSA gives the government the authority to:

- debit the excess of the Superannuation Account over the actuarial liability subject to limitations, and
- deal with any actuarial surplus, subject to limitations, in the Pension Fund as they occur, either by
    - reducing employer contributions or
    - reducing employer and employee contributions or
    - by making withdrawals.

A.2.2.4 Actuarial shortfall and deficit

In accordance with the PSSA, if either a Superannuation Account actuarial shortfall or a Pension Fund actuarial deficit is identified through a triennial statutory actuarial valuation, the actuarial shortfall/deficit can be amortized over a period of up to 15 years.

The President of the Treasury Board will determine the time, the manner and the amount of credits to be made. The shortfall/deficit must be fully paid by the end of the fifteenth fiscal year following the tabling of that report at the latest.

A.3 Summary description of benefits

The objective of the PSPP is to provide an employment earnings–related lifetime retirement pension to eligible members. Benefits to members in case of disability and to the spouse and children in case of death are also provided.

Subject to coordination with the pensions paid by the Canada Pension Plan (CPP) or the Québec Pension Plan (QPP), the initial rate of retirement pension is equal to 2% of the highest average of annual pensionable earnings over any period of five consecutive years, multiplied by the number of years of pensionable service not exceeding 35. Once in pay, the pension is indexed annually with the Consumer Price Index. Such indexation also applies to deferred pensions during the deferral period. Detailed notes on the following overview are provided in the following section.

Table 25 Contributor benefits

Contributor's type of termination	Benefit
With less than two years of service[a]	
▪ All types of termination	Return of contributions
With two or more years of service[a]; and	
▪ Disability	Immediate annuity
▪ Death leaving no surviving spouse or eligible children	Minimum benefit
▪ Death leaving surviving spouse and/or eligible children	Survivor allowance(s)
▪ Leaving prior to age 45, except for death or disability	
– Actual operational service between 20 and 25 years	Actual operational service annual allowance[b]
– Actual operational service 25 years or more	Immediate annuity
– Otherwise	Deferred annuity or transfer value
▪ Leaving at ages 45 to 49, except for death or disability, and	
– Deemed operational service 20 years or more	Deemed operational service annual allowance[c]
– Actual operational service between 20 and 25 years	Actual operational service annual allowance[b]
– Actual operational service 25 years or more	Immediate annuity
– Otherwise	Deferred annuity or transfer value
▪ Leaving at age 50 or over, except for death or disability, and	
– Deemed operational service between 20 and 25 years	Deemed operational service annual allowance [c]
– Deemed operational service 25 years or more	Immediate annuity
– Actual operational service between 20 and 25 years	Actual operational service annual allowance[b]
– Actual operational service 25 years or more	Immediate annuity
– Group 1, with no or less than 20 years of operational service, and either age 60 or over, or age 55 or over and service 30 years or more	Immediate annuity
– Group 2, with no or less than 20 years of operational service, and either age 65 or over, or age 60 or over and service 30 years or more	Immediate annuity
– Group 1, between age 50 and 55; or between age 55 and 60 and service less than 30 years	Deferred annuity or annual allowance
– Group 2, between age 55 and 60; or between age 60 and 65 and service less than 30 years	Deferred annuity or annual allowance
– Otherwise	Deferred annuity

a. Thresholds are determined using total pensionable service, including operational service.
b. Based on actual operational service only. Additional non-operational and/or deemed operational service, if any, results in the applicable non-operational benefit and/or deemed operational benefit (see Note A.4.12).
c. Based on deemed operational service only. Additional non-operational service, if any, results in the applicable non-operational benefit (see Note A.4.13).

Table 26 Pensioner benefits

Deferred pensioner and retired pensioner's type of termination	Benefit
▪ Group 1 disability before age 60 while entitled to a deferred annuity or an annual allowance	Immediate annuity
▪ Group 2 disability before age 65 while entitled to a deferred annuity or an annual allowance	Immediate annuity
▪ Death leaving no eligible survivor	Minimum benefit
▪ Death leaving eligible survivor(s)	Survivor allowance(s)

A.4 Explanatory notes

A.4.1 Member subgroups

Benefit provisions, member's demographic assumptions (Appendix G), detailed information on membership (Appendix M), and member contribution rates differ depending on the membership date and the type of service being accrued. Before receiving an annuity, contributors and deferred pensioners are divided into the following groups:

1) Group 1: Members who entered the PSPP prior to 1 January 2013.
2) Group 2: Members who entered the PSPP on or after 1 January 2013.

Then, each member can accrue different types of service (see A.4.4 below):

a) Operational members (from Correctional Service Canada) - correspond to members who accrue either:
   i. actual operational service; or
   ii. deemed operational service.
b) Main members: correspond to non-operational members.

In this report, membership data is divided into the following subgroups. The eligibility and provisions of each group are further explained in the explanatory notes below.

Contributors: Members who have yet to terminate their employment.

Deferred pensioners: Members who have terminated their employment and have opted, by choice or by default, to defer the moment where they will become retired pensioners.

Retired pensioners: Members who terminated their employment and are currently receiving an annuity.

Disabled pensioners: Members currently receiving an annuity and are disabled.

Surviving spouses: The spouse, of a deceased member, that is currently receiving an annuity.

Surviving children: The child, of a deceased member, that is currently receiving an annuity.

Pending and outstanding members: Members eligible to a either a return of contribution or a transfer value but have yet to receive it as of 31 March 2023. Pending members terminated between 31 March 2020 and 31 March 2023 while outstanding members terminated before 31 March 2020.

A.4.2 Pensionable earnings

Pensionable earnings means the annual employment earnings (excluding overtime but including pensionable allowances such as bilingual bonuses) of a contributor.

Pensionable payroll means the aggregate pensionable earnings of all contributors with less than 35 years of pensionable service. Payroll of members on leave without pay at 31 March 2023 is excluded as they are not considered participating contributors in this report.

A.4.3 Indexation

A.4.3.1 Level of indexation adjustments

All immediate and deferred annuities (pensions and allowances) are adjusted every January to the extent warranted by the increase, as at 30 September of the previous year, in the 12-month average Consumer Price Index relative to the corresponding figure one year earlier. If the indicated adjustment is negative, annuities are not decreased for that year; however, it is carried-forward and the next positive adjustment is diminished accordingly.

A.4.3.2 First indexation adjustment

Indexation adjustments accrue from the end of the month in which employment terminates. The first annual adjustment following termination of employment is prorated accordingly.

A.4.3.3 Commencement of indexation payments

The indexation portion of a retirement, disability or survivor pension normally starts being paid when the pension is put into pay. However, regarding an operational service retirement pension, indexation payments start only when the pensioner is either

- at least 55 years old, provided the sum of age and pensionable service is at least 85; or
- at least 60 years old.

A.4.4 Pensionable service, actual operational service and deemed operational service

Pensionable service of a contributor includes any period of service in the Public Service for which the contributor has been required to contribute or has elected to contribute, if eligible to do so, and such other types of service for which the contributor has elected to make the required special contributions to the Superannuation Account or the Pension Fund. Pensionable service is limited to 35 years.

Actual operational service
Refers to employees working in federal correctional facilities, parole offices and community correctional centres. More specifically, operational service is defined as service by a person employed by Correctional Service Canada (CSC) whose principal place of work is not: the national headquarters or a regional headquarters of CSC; the offices of the CSC Commissioner; or a regional CSC Staff College or any other institution that provides similar training to CSC employees.

Deemed operational service
Refers to CSC employees in operational service for one or more periods totalling at least 10 years, who then cease to be engaged in operational service but continue to be employed by CSC and elect to continue to accumulate operational service and contribute an additional 0.62% of pensionable earnings.

A.4.5 Return of contributions

Return of contributions means the payment of an amount equal to the accumulated current and prior service contributions paid or transferred by the contributor into the plan. Interest is credited quarterly on returned contributions in accordance with the investment return on the Pension Fund.

A.4.6 Annuity payments

Annuities are payable at the end of month until the month in which the pensioner dies or until the disabled pensioner recovers from disability (the last payment would then be pro-rated). Upon the death of the pensioner, either a survivor allowance (Note A.4.16) or a residual death benefit (Note A.4.17) may be payable.

A.4.7 Coordination with CPP (or QPP)

When a pensioner attains age 65 or becomes entitled to a disability pension from the CPP (or QPP), the annual pension amount is reduced by 0.625% of the indexed CPP annual pensionable earnings[5] (or, if lesser, the indexed five-year[7] pensionable earnings average on which the immediate annuity is based), multiplied by the years of CPP pensionable service[6]. This coordination does not apply to annual allowance for eligible survivors (note A.4.16).

A.4.8 Immediate annuity

Immediate annuity means an unreduced pension that becomes payable immediately upon a pensionable retirement or pensionable disability. The annual amount is equal to 2% of the highest average of annual pensionable earnings of the contributor over any period of five[7] consecutive years, multiplied by the number of years of pensionable service not exceeding 35. For contributors with periods of part-time pensionable service, earnings used in the five-year average are based on a full 37.5-hour workweek, but the resulting average is multiplied by the proportion of the actual workweek over a full workweek averaged by the contributor over the entire period of pensionable service.

A.4.9 Deferred annuity

Deferred annuity means an annuity that normally becomes payable to a former Group 1 contributor who reaches age 60 or a former Group 2 contributor who reaches age 65. The annual payment is determined as for an immediate annuity (Note A.4.8) but is also adjusted to reflect the indexation (Note A.4.3) from the date of termination to the commencement of benefit payments.

The deferred annuity of a former Group 1 contributor becomes an immediate annuity during any period of disability beginning before age 60. If the disability ceases before age 60, the immediate annuity reverts to the original deferred annuity unless the pensioner elects an annual allowance (Notes A.4.11, A.4.12, and A.4.13) that is the prescribed actuarial equivalent to the deferred annuity. Similarly, the deferred annuity of a former Group 2 contributor becomes an immediate annuity during any period of

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5 *Indexed CPP annual pensionable earnings* means the average of the YMPE, as defined in the CPP, over the five calendar years leading up to and including the one in which pensionable service terminated, increased by indexation proportionate to that accrued in respect of the immediate annuity.

6 *Years of CPP pensionable service* mean the number of years of PSSA pensionable service after 1965 or after attaining age 18, whichever is later, but not exceeding 35.

7 If the number of years of pensionable service is less than five, then the averaging is over the entire period of pensionable service.

disability beginning before age 65, and reverts back to the original deferred annuity if the disability ceases before age 65, unless the pensioner elects an annual allowance as described above.

A.4.10 Transfer value

A contributor who has ceased to be employed in the Public Service and has to his credit two or more years of pensionable service, is a Group 1 contributor and is under age 50, or is a Group 2 contributor and is under age 55, and is eligible for a deferred annuity may elect to transfer the commuted value of his benefit, determined in accordance with the regulations, to

- a locked-in Registered Retirement Savings Plan; or
- another pension plan registered under the Income Tax Act; or
- a financial institution for the purchase of a locked-in immediate or deferred annuity.

A.4.11 Main members - annual allowance

For a Group 1 member, annual allowance means an annuity payable immediately on retirement or upon attaining age 50, if later. The amount of the allowance is equal to the amount of the deferred annuity to which the member would otherwise be entitled, reduced by 5% for each year between 60 and the age when the allowance becomes payable. However, if the member is at least 50 years old at termination, and has at least 25 years of pensionable service[8], then the difference, in years, between 60 and the age when the allowance becomes payable is reduced to the greater of

- 55 minus the age when the allowance becomes payable, and
- 30 minus the number of years of pensionable service[8].

For a Group 2 member, the eligibility age is increased by 5 years, so that annual allowance means an annuity payable immediately on retirement or upon attaining age 55 if later. The amount of the allowance is equal to the amount of the deferred annuity to which the member would otherwise be entitled, reduced by 5% for each year between 65 and the age when the allowance becomes payable. However, if the member is at least 55 years old at termination, and has at least 25 years of pensionable service[8], then the difference, in years, between 65 and the age when the allowance becomes payable is reduced to the greater of

- 60 minus the age when the allowance becomes payable, and
- 30 minus the number of years of pensionable service[8].

The Treasury Board can waive all or part of the reduction for Group 1 contributors who are involuntarily retired at ages 55 and over with at least 10 years of Public Service employment, or for Group 2 contributors who are involuntarily retired at ages 60 and over with at least 10 years of Public Service employment.

When a Group 1 member in receipt of an annual allowance becomes disabled before reaching age 60, or a Group 2 member in receipt of an annual allowance becomes disabled before reaching age 65, the

[8] For privatized members who elected not to transfer their PSSA benefits to their new employer's pension plan, service (including any operational) with the new employer is included.

annual allowance becomes an immediate annuity adjusted in accordance with the regulations to take into account the amount of any annual allowance received prior to becoming disabled.

A.4.12 Deemed operational service - immediate annuity and annual allowance

A deemed operational service immediate annuity differs from an immediate annuity (Note A.4.8) only in that it is available as early as age 50 with 25 years of operational service.

A deemed operational service annual allowance differs from an annual allowance (Note A.4.11) in two ways. Firstly, it is available as early as age 45 with 20 years of operational service. Secondly, the reduction factor is 5% multiplied by the greater of

- 50 minus the age, and
- 25 minus the years of operational service.

The foregoing operational service–related benefits are calculated in relation to both deemed and actual operational service only. Additional non-operational service results in the applicable non-operational benefit where any thresholds or reductions are based on total pensionable service, including operational service.

A.4.13 Actual operational service - immediate annuity and annual allowance

An actual operational service immediate annuity differs from an immediate annuity (Note A.4.8 and Note A.4.12) only in that it is available when the member has accrued 25 years of actual operational service.

An actual operational service annual allowance differs from other annual allowances (Note A.4.11 and Note A.4.12) in two ways. Firstly, it is available as soon as 20 years of actual operational service is accrued. Secondly, the reduction factor is 5% multiplied by 25 minus the years of actual operational service.

The foregoing operational service-related benefits are calculated in relation to actual operational service only. Additional non-operational service results in the applicable non-operational benefit where any thresholds or reductions are based on total pensionable service, including operational service. Also, additional deemed operational service results in the applicable deemed operational benefit where any thresholds or reductions are based on operational pensionable service.

A.4.14 Eligible surviving spouse

Eligible surviving spouse means the surviving spouse (includes a common-law or same-sex partner recognized under the plan) of a contributor or pensioner except if:

- the contributor or pensioner died within one year of commencement of the spousal union, unless the Treasury Board is satisfied that the health of the contributor or pensioner at the time of such commencement justified an expectation of surviving for at least one year; or
- the pensioner married after ceasing to be a contributor, unless after such marriage the pensioner either:
    - became a contributor again, or

- made an optional survivor benefit election within 12 months following marriage to accept a reduced pension so that the new spouse would be eligible for a survivor benefit. This reduction is reversed if and when the new spouse predeceases the pensioner or the spousal union is terminated for reason other than death.

A.4.15 Eligible surviving children

Eligible surviving children includes all children of the contributor or pensioner who are under age 18, and any child of the contributor or pensioner who is age 18 or over but under 25, in full-time attendance at a school or university, having been in such attendance substantially without interruption since he or she reached age 18 or the contributor or pensioner died, whichever occurred later.

A.4.16 Annual allowance for eligible survivor(s)

Annual allowance means, for the eligible surviving spouse and children of a contributor or pensioner, an annuity that becomes payable immediately upon the death of that individual. The amount of the allowance is determined with reference to a basic allowance that is equal to 1% of the highest average of annual pensionable earnings of the contributor over five consecutive years, multiplied by the number of years of pensionable service not exceeding 35.

The annual allowance for a spouse is equal to the basic allowance unless the spouse became eligible as a result of an optional survivor benefit election, in which case it is equal to the percentage of the basic allowance specified by the pensioner making the election.

The annual allowance for an eligible surviving child is equal to 20% of the basic allowance, subject to a reduction if there are more than four eligible surviving children in the same family. The allowance otherwise payable to an eligible surviving child is doubled if there is no eligible surviving spouse.

Survivor annual allowances are not coordinated with the CPP (or QPP) and are payable in equal monthly instalments in arrears until the end of the month in which the survivor dies or otherwise loses eligibility. If applicable, a residual benefit (Note A.4.17) is payable to the estate upon the death of the last survivor.

A.4.17 Minimum and residual death benefits

If a contributor or a pensioner dies leaving no eligible survivor, the lump sum normally paid is the excess of the greater of:

- a return of contributions; and
- five times the annual amount of the immediate annuity to which the contributor would have been entitled, or the pensioner was entitled, at the time of death,

less any pension payments already received. Indexation adjustments are excluded from these calculations.

The same formula is used to determine the residual death benefit, which is the lump sum payable upon the death of an eligible survivor but also subtracting all amounts (excluding indexation adjustments) already paid to the survivor.

A.4.18 Division of pension with former spouse

In accordance with the *Pension Benefits Division Act (PBDA)*, upon the breakdown of a spousal union (including common-law), a lump sum can be debited by court order or by mutual consent from the accounts and/or the Pension Fund, as the case may be, to the credit of the former spouse of a contributor or pensioner. The maximum transferable amount is half the value, calculated as at the transfer date, of the retirement pension accrued by the contributor or pensioner during the period of cohabitation. If the member's benefits are not vested, the maximum transferable amount corresponds to half the member's contributions made during the period subject to division, accumulated with interest at the rate applicable on a refund of contributions. The accrued benefits of the contributor or pensioner are then reduced accordingly.

Appendix B — Retirement compensation arrangement benefit provisions

Retirement compensation arrangements (RCAs) are arrangements for benefits in excess of benefit limitations of registered pension plans and therefore are less tax-advantageous as the fund must transfer a 50% refundable tax to the Canada Revenue Agency (CRA) immediately. Under the PSSA RCA a debit is made from the RCA Account such that in total roughly half the recorded balance in the RCA Account is held as a tax credit (CRA refundable tax). This Appendix describes the Public Service pension benefits financed through retirement compensation arrangements (RCA No. 1 and RCA No. 2) rather than through the registered PSSA provisions that have a material impact on this valuation

Effective 15 December 1994, RCA No. 1 was established pursuant to the *Special Retirement Arrangements Act* (SRAA) to provide for all pension benefits in excess of those that may, in accordance with the *Income Tax Act* (ITA) restrictions on registered pension plans, be paid under the PSSA registered provisions.

Effective 1 April 1995, RCA No. 2 was established by the RCA regulations as an early retirement incentive program (ERI) for certain Public Service employees declared surplus before 1 April 1998 as part of the downsizing initiative. Participation was limited to individuals between ages 50 and 54 who met the conditions specified in the regulations. RCA No. 2 pays the difference between a pension unreduced for early retirement and the reduced pension payable in accordance with the PSSA. It is financed entirely by the government.

The following benefits have been provided under RCA No. 1 since 20 November 1997, unless otherwise indicated, to the extent that they are in excess of the ITA limit.

Table 27 RCA – Summary of Plan provisions

Benefit	PSSA Registered Provisions limit
Survivor allowance for service from 1 January 1992 onward (see Note A.4.16 of Appendix A)	Pre-retirement death • Maximum spouse allowance is two-thirds of greater of A and B; and • Maximum aggregate dependants' allowance is the greater of A and B, where A is the amount of member annuity earned to date of death, and B is the projected member's retirement benefit at age 65 based on current salary history, limited to 1.5 times the YMPE in effect during the year of the member's death. Post-retirement death The amount of spouse allowance is limited in any year to a maximum of two-thirds the retirement benefit that would have been payable to the member in that year under the PSSA.

Benefit	PSSA Registered Provisions limit
Excess pensionable earnings (provided since 15 December 1994 for service since then)	The highest average of pensionable earnings under the PSSA is limited to the MPE (see Appendix F.2.3). The Excess pensionable earnings component in this report represents the benefits payable to the member from the portion of the average of pensionable earnings in excess of the MPE. Minimum death benefit in relations to the Excess pensionable earnings is also included in this component. However, any survivor benefits in relations to the excess pensionable earnings are included in the Survivor allowance.
Continued benefit accrual for former deputy heads (provided since 15 December 1994 for service since then)	Deputy heads ceasing employment under age 60 may elect to be deemed full-time employees absent from the Public Service on leave without pay up to age 60. They contribute twice what they would contribute should they be part of Group 2, based on their total deemed salary. This entire benefit is outside the registered plan limit. It represents the PSSA accrued service, plus service accrued in this program, multiplied by the deemed salary at the time of retirement (or when opting out of the program), multiplied by 2% (or 1% for survivor), minus the benefits paid under the PSSA, the Excess pensionable earnings and the Survivor allowance.
Elective service for service prior to 1 January 1990	The amount of lifetime retirement benefits for each such year of service is limited to two-thirds of the defined benefit limit (i.e. $3,610.00 for calendar year 2024) for the year in which the lifetime retirement benefits commence to be paid. For years subsequent to the commencement year of lifetime retirement benefits, this amount can be adjusted to reflect increases in the Consumer Price Index.

Appendix C — Assets, accounts and rates of return

C.1 Assets and account balances

The government has a statutory obligation to fulfill the pension promise enacted by legislation to members of the Public Service. Since 1 April 2000, the government has earmarked invested assets (the Pension Fund) to meet the cost of pension benefits.

With respect to the unfunded portion of the PSPP, accounts were established to track the government's pension benefit obligations, such as the Superannuation Account for service prior to 1 April 2000, and the RCA No. 1 and No. 2 Accounts for benefits in excess of those that can be provided under the *Income Tax Act* limits for registered pension plans.

C.1.1 Public Service Superannuation Account

PSSA member contributions, government costs and benefits earned up to 31 March 2000 are tracked entirely through the Public Service Superannuation Account, which forms part of the Accounts of Canada.

The Superannuation Account is credited with all PSSA member contributions and government costs prior to 1 April 2000, as well as with prior service contributions and costs for elections made prior to 1 April 2000. It is charged with both the benefit payments made in respect of service earned under the Superannuation Account and the allocated portion of the plan administrative expenses.

The Superannuation Account is credited with interest earnings as though net cash flows were invested quarterly in 20-year Government of Canada bonds issued at prescribed[9] interest rates and held to maturity. No formal debt instrument is issued to the Superannuation Account by the government in recognition of the amounts therein. Interest is credited every three months on the basis of the average yield for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces and RCMP pension plans.

[9] Under Section 42 (1) (b) of the *Public Service Superannuation Act*, rates may be prescribed by Regulations. The interest rates are defined under Section 46 (2) (a) of the *Public Service Superannuation Regulations*.

Table 28 Reconciliation of balances in Superannuation Account
(in $ millions)

Plan year	2021	2022	2023	2021 to 2023
Opening balance as at 1 April of the previous year	91,516	89,011	94,113	91,516
Income				
Interest earnings	3,089	2,896	2,914	8,899
Employer contributions	3	2	2	7
Member contributions	3	3	2	8
Transfers received	0	0	0	0
Actuarial adjustments	0	7,805	0	7,805
Income subtotal	3,095	10,706	2,918	16,719
Expenditures				
Annuities	5,519	5,513	5,596	16,628
Pension divisions	9	10	7	26
Return of contributions	0	0	1	1
Pension transfer value payments	5	6	3	14
Transfers to other pension plans	2	2	1	5
Minimum benefits	13	20	29	62
Administrative expenses	52	53	51	156
Expenditures subtotal	5,600	5,604	5,688	16,892
Closing balance as at 31 March of the plan year	89,011	94,113	91,343	91,343

Since the last valuation, the Account balance has decreased by $0.2 billion (a 0.2% reduction) to reach $91.3 billion as at 31 March 2023.

C.1.2 Public Service Pension Fund

Since 1 April 2000, PSSA contributions (except for prior service elections made prior to 1 April 2000) have been credited to the Pension Fund. The Pension Fund is invested in the financial markets with a view to achieving maximum rates of return without undue risk.

The Pension Fund has been credited with all PSSA contributions since 1 April 2000, as well as with prior service contributions in respect of elections made since that date. The Pension Fund is also credited with the net investment returns generated by the investment assets managed by PSP Investments. It is debited with both the benefit payments made in respect of service earned and prior service elections made since 1 April 2000 and the allocated portion of the plan administrative expenses.

Table 29 Reconciliation of balances in Pension Fund
(in $ millions)

Plan year	2021	2022	2023	2021 to 2023
Opening balance as at 1 April of the previous year	123,433	149,149	168,113	123,433
Income				
Investment earnings	22,988	16,384	7,444	46,816
Employer contributions	2,917	3,046	3,090	9,053
Member contributions	2,989	3,134	3,168	9,291
Transfers received	66	81	106	253
Actuarial adjustments	0	0	0	0
Income subtotal	28,960	22,645	13,808	65,413
Expenditures				
Annuities	2,792	3,091	3,484	9,367
Pension divisions	39	49	41	129
Return of contributions	21	23	38	82
Pension transfer value payments	261	374	236	871
Transfers to other pension plans	41	41	26	108
Minimum benefits	20	28	42	90
Administrative expenses	70	75	80	225
Expenditures subtotal	3,244	3,681	3,947	10,872
Closing balance as at 31 March of the plan year	149,149	168,113	177,974	177,974

Since the last valuation, the Pension Fund balance has increased by $54.5 billion (a 44.2% increase) to reach $178.0 billion as at 31 March 2023.

C.1.3 Public Service RCA No. 1 Account

The amount in the RCA No. 1 Account is composed of the recorded balance in the Retirement Compensation Arrangements Account, which forms part of the Accounts of Canada, and a tax credit (CRA refundable tax). Each calendar year, a debit/credit is made from the RCA Account such that in total roughly half the recorded balance in the RCA Account is held as a tax credit (CRA refundable tax).

No formal debt instrument is issued to the RCA No. 1 Account by the government in recognition of the amounts therein. Interest earnings are credited every three months on the basis of the average yield for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces and RCMP pension plans.

Table 30 Reconciliation of balances in RCA No. 1 Account (in $ millions)				
Plan year	2021	2022	2023	2021 to 2023
Opening balance as at 1 April of the previous year	1,315	1,331	1,349	1,315
Income				
Interest earnings	45	44	43	132
Employer contributions	54	48	105	207
Member contributions	15	14	19	48
Transfers received	0	0	0	0
Actuarial adjustments	0	0	0	0
Income subtotal	114	106	167	387
Expenditures				
Annuities	61	66	72	199
Pension divisions	1	0	0	1
Return of contributions	0	0	0	0
Pension transfer value payments	1	1	1	3
Transfers to other pension plans	0	1	0	1
Minimum benefits	0	0	0	0
Amount transfer to CRA	35	20	39	94
Expenditures subtotal	98	88	112	298
Closing balance as at 31 March of the plan year	1,331	1,349	1,404	1,404
CRA refundable tax	1,332	1,352	1,391	1,391

Since the last valuation, the RCA No. 1 Account balance has grown by $89 million (a 6.8% increase) to reach $1,404 million as at 31 March 2023 and the refundable tax has increased by $94 million (a 7.2% increase) to reach $1,391 million.

C.1.4 Public Service RCA No. 2 Account

The amount in the RCA No. 2 Account is composed of the recorded balance in the Retirement Compensation Arrangements Account, which forms part of the Accounts of Canada, and a tax credit (CRA refundable tax). Each calendar year, a debit/credit is made from the RCA Account such that in total roughly half the recorded balance in the RCA Account is held as a tax credit (CRA refundable tax).

No formal debt instrument is issued to the RCA No. 2 Account by the government in recognition of the amounts therein. Interest earnings are credited every three months on the basis of the average yield for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces and RCMP pension plans.

Table 31 Reconciliation of balances in RCA No. 2 Account
(in $ millions)

Plan year	2021	2022	2023	2021 to 2023
Opening balance as at 1 April of the previous year	628	595	563	628
Income				
Interest earnings	20	19	17	56
Actuarial adjustments	0	0	0	0
Income subtotal	20	19	17	56
Expenditures				
Annuities	85	84	85	254
Amount transfer to CRA	(32)	(33)	(33)	(98)
Expenditures subtotal	53	51	52	156
Closing balance as at 31 March of the plan year	595	563	528	528
CRA refundable tax	612	579	546	546

Since the last valuation, the RCA No. 2 Account balance has decreased by $100 million (a 15.9% reduction) to $528 million as at 31 March 2023 and the refundable tax has decreased by $98 million (a 15.2% reduction) to $546 million.

C.2 Rates of interest (return)

The interest earnings in respect of the Superannuation Account were calculated using the entries in Table 28 which are based on book values since the notional bonds are deemed to be held to maturity. The interest earnings were computed using the dollar-weighted approach and assume that cash flows occur in the middle of the plan year (except for actuarial liability adjustments, which occur on 31 March). The Pension Fund rates of return are those from PSP Investments Annual Report for the respective plan years.

Table 32 Rates of interest (return)

Plan Year	Superannuation Account	Pension Fund
2021	3.5%	18.4%
2022	3.4%	10.9%
2023	3.2%	4.4%

C.3 Sources of asset data

The Superannuation Account, the RCA No. 1 Account, the RCA No. 2 Account and the Pension Fund entries shown in Appendix C.1 above were taken from the Public Accounts of Canada and the financial statements of PSP Investments.

Appendix D — Membership data

D.1 Sources of membership data

The valuation data required in respect of contributors (both active and non-active), pensioners and survivors are extracted from master computer files maintained by the Department of Public Services and Procurement Canada (PSPC).

The main valuation data file supplied by PSPC contained the historical status information on all members up to 31 March 2023.

D.2 Validation of membership data

We performed certain tests on internal consistency, as well as tests of consistency with the data used in the previous valuation, with respect to membership reconciliation, basic information (date of birth, date of hire, date of termination, gender, etc.), salary levels, and pensions to survivors and pensioners.

We assumed that members with unknown gender were 50% male and 50% female.

Based on the omission and discrepancies identified by these and other tests, appropriate adjustments were made to the basic data after consulting with the data provider.

D.3 Membership data

A summary of the valuation data as at 31 March 2023 and reconciliations of contributors, pensioners and survivors during the intervaluation period are shown in Table 33 to Table 39. Detailed membership data upon which this valuation is based are shown in Appendix M. The group of members are defined at A.4.1.

Table 33 Summary of membership data

Group of members	Statistic	As at 31 March 2023	As at 31 March 2020
Contributors[a]	Number	399,614	331,406
	Average annual earnings	$90,500	$84,915
	Average pensionable service	10.37	11.63
	Average age	43.49	44.39
Deferred pensioners[b]	Number	31,189	n/a
	Average annual pension	$12,000	n/a
	Average age	46.27	n/a
Retired pensioners[b]	Number	225,461	243,024
	Average annual pension	$37,600	$31,502
	Average age	72.18	68.66
Disabled pensioners	Number	15,922	15,513
	Average annual pension	$20,600	$18,168
	Average age	64.94	64.73
Surviving spouses	Number	46,648	47,677
	Average annual pension	$18,400	$16,021
	Average age	79.65	79.62
Surviving children	Number	1,248	1,159
	Average annual pension	$3,200	$2,201
	Average age	15.23	13.29
Pending members	Number	4,610	n/a
	Average age	34.83	n/a
Outstanding members	Number	4,215	n/a
	Average age	34.31	n/a

a. Includes non-participating and non-accruing members
b. Deferred pensioners were included in the retired pensioners as at 31 March 2020

Table 34 Reconciliation of Group 1 contributors

Status	Participating and accruing		Participating non-accruing			Non-participating non-accruing		
	Male	Female	Male	Female	Total	Male	Female	Total
As at 31 March 2020	85,685	112,071	3,087	1,501	202,344	589	611	1,200
Data corrections	177	172	(101)	(29)	219	29	(33)	(4)
New contributors								
Re-qualifying contributors[a]	30	70	1	0	101	5	12	17
Rehired pensioners	391	683	4	0	1,078	15	20	35
Subtotal	421	753	5	0	1,179	20	32	52
Changes of								
Participating accruing	63	147	0	0	210	(63)	(147)	(210)
Participating non-accruing	(1,407)	(1,051)	1,407	1,052	1	0	(1)	(1)
Non-participating non-accruing	(376)	(407)	(82)	(40)	(905)	458	447	905
Subtotal	(1,720)	(1,311)	1,325	1,012	(694)	395	299	694
ROC or TV[b]	(565)	(830)	(37)	(4)	(1,436)	(15)	(7)	(22)
Pending	(72)	(83)	(1)	-	(156)	(3)	-	(3)
Pensionable terminations/deaths								
Disabled pensioners	(476)	(1,079)	(28)	(2)	(1,585)	0	(1)	(1)
Deferred pensioners	(1,045)	(1,369)	(31)	(7)	(2,452)	(20)	(21)	(41)
Retired pensioners	(9,354)	(11,974)	(1,549)	(1,046)	(23,923)	(283)	(246)	(529)
Death (no survivors)	(133)	(167)	(12)	(11)	(323)	(7)	(6)	(13)
Death (with survivors)	(306)	(245)	(22)	(3)	(576)	(16)	(6)	(22)
Subtotal	(11,314)	(14,834)	(1,642)	(1,069)	(28,859)	(326)	(280)	(606)
As at 31 March 2023	72,612	95,938	2,636	1,411	172,597	689	622	1,311

a. Re-qualifying contributors are members who were deemed deferred as at the previous valuation but returned to work. Since they never cash-out their benefits accrued before their first termination, they return as members of Group 1.
b. Termination of membership resulting in a refund of contributions or a payment of transfer value.

Table 35 Reconciliation of Group 2 contributors

Status	Participating and accruing		Participating non-accruing			Non-participating non-accruing		
	Male	Female	Male	Female	Total	Male	Female	Total
As at 31 March 2020	54,526	71,613	514	57	126,710	461	691	1,152
Data corrections	953	1,519	95	13	2,580	18	41	59
New contributors								
New entrants	47,087	68,498	164	23	115,772	390	605	995
Rehired cash-out	1,446	2,183	0	1	3,630	29	50	79
Rehired pensioners	442	672	0	1	1,115	16	25	41
Subtotal	48,975	71,353	164	25	120,517	435	680	1,115
Changes of								
Participating accruing	461	743	(3)	0	1,201	(458)	(743)	(1,201)
Participating non-accruing	(386)	(54)	387	54	1	(1)	0	(1)
Non-participating non-accruing	(457)	(706)	(9)	(1)	(1,173)	466	707	1,173
Subtotal	(382)	(17)	375	53	29	7	(36)	(29)
ROC or TV [a]	(5,995)	(7,505)	(86)	(10)	(13,596)	(224)	(385)	(609)
Pending	(1,948)	(2,289)	(20)	-	(4,257)	(81)	(113)	(194)
Pensionable terminations/deaths								
Disabled pensioners	(96)	(163)	(3)	(1)	(263)	0	0	0
Deferred pensioners	(2,623)	(3,100)	(24)	(2)	(5,749)	(26)	(50)	(76)
Retired pensioners	(600)	(682)	(46)	(4)	(1,332)	(27)	(21)	(48)
Death (no survivors)	(87)	(75)	(6)	0	(168)	(2)	0	(2)
Death (with survivors)	(77)	(51)	(1)	0	(129)	(4)	0	(4)
Subtotal	(3,483)	(4,071)	(80)	(7)	(7,641)	(59)	(71)	(130)
As at 31 March 2023	92,646	130,603	962	131	224,342	557	807	1,364

a. Termination of membership resulting in a refund of contributions or a payment of transfer value.

Table 36 Reconciliation of pensioners

Status	Deferred pensioners			Disabled pensioners			Retired pensioners[a]		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
As at 31 March 2020	12,983	15,784	28,767	5,609	9,904	15,513	113,289	100,968	214,257
Data corrections	111	234	345	36	58	94	(69)	(22)	(91)
New pensioners	3,769	4,549	8,318	603	1,246	1,849	11,859	13,973	25,832
Transfer status to									
Rehired	(816)	(1,309)	(2,125)	(2)	(3)	(5)	(50)	(89)	(139)
Deferred pensioners	62	100	162	0	0	0	(62)	(100)	(162)
Disabled pensioners	(4)	(10)	(14)	4	10	14	0	0	0
Retired pensioners	(1,916)	(2,271)	(4,187)	0	0	0	1,916	2,271	4,187
Subtotal	(2,674)	(3,490)	(6,164)	2	7	9	1,804	2,082	3,886
Terminations/Deaths									
Cash paid out	(17)	(11)	(28)	0	0	0	(2)	0	(2)
Death (no survivors)	(21)	(15)	(36)	(418)	(555)	(973)	(5,870)	(5,173)	(11,043)
Death (with survivors)	(9)	(4)	(13)	(353)	(217)	(570)	(5,995)	(1,383)	(7,378)
Subtotal	(47)	(30)	(77)	(771)	(772)	(1,543)	(11,867)	(6,556)	(18,423)
As at 31 March 2023	14,142	17,047	31,189	5,479	10,443	15,922	115,016	110,445	225,461

a. Retired pensioners include both members receiving an Immediate Annuity and those receiving an Annual Allowance.

Table 37 Reconciliation of surviving spouses

Gender	Widows	Widowers	Total
As at 31 March 2020	40,730	6,947	47,677
Data corrections	307	124	431
New from contributors	399	306	705
New from pensioners	6,328	1,624	7,952
Spouse deaths	(8,857)	(1,260)	(10,117)
As at 31 March 2023	38,907	7,741	46,648

Table 38 Reconciliation of children survivors			
Status	Children	Students	Total
As at 31 March 2020	856	303	1,159
Data corrections	27	65	92
New from contributors	338	106	444
New from pensioners	48	42	90
Termination of benefits	(195)	(342)	(537)
Eligible as student	(159)	159	-
As at 31 March 2023	915	333	1,248

Table 39 Reconciliation of pensioners with RCA No. 2 benefits (ERI)			
Gender	Male	Female	Total
As at 31 March 2020	5,552	3,693	9,245
Data corrections	9	11	20
Pensioner deaths	(469)	(225)	(694)
Rehired	0	0	0
As at 31 March 2023	5,092	3,479	8,571

Appendix E — PSSA valuation methodology

E.1 Plan assets

E.1.1 Public Service Superannuation Account

The balance of the Superannuation Account forms part of the Accounts of Canada. The underlying notional bond portfolio described in Appendix C is shown at the book value.

The only other Superannuation Account–related amount consists of the discounted value of future member contributions and government credits in respect of prior service elections[10]. The discounted value of future member contributions and government credits was calculated using the projected Superannuation Account yields.

The present value of prior service contributions, determined as at 31 March 2023 is $10 million.

E.1.2 Public Service Pension Fund

For valuation purposes, an adjusted market value method is used to determine the actuarial value of assets in respect of the Pension Fund. The method is unchanged from the previous valuation.

Under the adjusted market value method, the difference between the observed investment returns during a given plan year and the expected investment returns for that year based on the previous report assumptions, is recognized over five years at the rate of 20% per year. The actuarial value is then determined by applying a 10% corridor, such that the actuarial value of assets is within 10% of the market value of assets. The value produced by this method is related to the market value of the assets but is more stable than the market value.

The only other Pension Fund–related asset consists of the discounted value of future member and government contributions in respect of prior service elections[10]. The discounted value of future member and government contributions was calculated using the assumed rates of return on the Pension Fund.

The actuarial value of the assets, determined as at 31 March 2023 is $169,178 million and was determined as follows.

[10] As described in Appendix A.2.2.2 Elected prior service.

Table 40 Actuarial value of Pension Fund assets
($ millions)

Plan year	2019	2020	2021	2022	2023	Total
Actual net investment return (A)	8,070	(763)	22,988	16,384	7,444	
Expected investment return (B)	5,744	6,769	5,241	8,424	8,804	
Investment gains (losses) (C = A-B)	2,326	(7,532)	17,747	7,960	(1,360)	
Unrecognized percentage (D)	0%	20%	40%	60%	80%	
Unrecognized investment gains (losses) (CxD)	0	(1,506)	7,099	4,776	(1,088)	9,281
Market value as at 31 March 2023						177,974
Plus						
Actuarial smoothing adjustment, before application of corridor						(9,281)
Actuarial value as at 31 March 2023 (before application of corridor)						168,693
Impact of application of corridor[a]						0
Actuarial value as at 31 March 2023 (after application of corridor)						168,693
Plus						
Present value of prior service contributions						485
Actuarial value as at 31 March 2023						169,178

a. The corridor is 90% to 110% of market value, that is from $160,177M to $195,771M.

E.2 Actuarial cost method

As benefits earned in respect of current service will not be payable for many years, the purpose of an actuarial cost method is to assign costs over the working lifetime of the members.

As in the previous valuation, the projected accrued benefit actuarial cost method (also known as the projected unit credit method) was used to determine the current service cost and actuarial liability. Consistent with this cost method, pensionable earnings are projected up to retirement using the assumed annual increases in pensionable earnings (including seniority and promotional increases). The yearly maximum salary cap and other benefit limits under the *Income Tax Act* described in Appendix B were taken into account to determine the benefits payable under the PSSA and those payable under the RCA No. 1.

E.2.1 Current service costs and member contribution rates

Under the projected accrued benefit actuarial cost method, the current service cost, also called the normal cost, computed in respect of a given year is the sum of the value, discounted in accordance with the actuarial assumptions for the Pension Fund, of all future payable benefits considered to accrue in respect of that year of service. The Pension Fund administrative expenses are also included in the total current service cost.

Under this method, the current service cost for an individual member will increase each year as the member approaches retirement. However, all other things being equal, the current service cost for the total population, expressed as a percentage of total pensionable payroll, can be expected to remain stable as long as the average age and service of the total population remain constant. This is true to the extent that the plan population is mature and stable. For a given year, the government current service

cost is the total current service cost reduced by the members contributions during the year.

Member contribution rates were determined such that the members and the government share the total current service at 50/50[11].

The methods used to allocate the current service were revised from the previous valuation. The new methods were developed to ensure consistency and equity as the demographics of the groups are evolving and to ensure consistency and stability between earnings and costs over a long-term horizon (40-year projection period). The methods used for the current valuation are described below.

E.2.1.1 Method to allocate current service cost to Group 1 and Group 2 – by cost ratio

The current service contribution for Group 1 and Group 2 were determined as follows:

a) Determine the current service cost for the total active main[12] population (Group 1 and Group 2 main contributors) assuming Group 1 benefits and demographic assumptions apply to all contributors.

b) Determine the current service cost as for the total active main population (Group 1 and Group 2 main contributors) assuming Group 2 benefits and demographic assumptions apply to all contributors.

c) Calculate the ratio of (a)/(b) above.

d) Calculate the current service cost for all main contributors and distribute this cost between Group 1 and Group 2 using the ratio determined in (c) above and respective payrolls of both groups. The result produces the current service contribution for Group 1 and Group 2.

E.2.1.2 Method to determine the contribution rates for earnings up to, and in excess of the YMPE – by component cost

a) Determine the current service cost as a percentage of payroll for benefits that are independent of the YMPE (i.e. contingency benefits and most member's pre-65 benefits).

b) Determine the current service cost as a percentage of payroll for benefits that are dependent of the YMPE (i.e. post-65 benefits and certain member's pre-65 benefits).

c) Split the resulting service cost as a percentage of payroll determined in (b) above in two contribution rates up to and in excess of the YMPE so that the following ratios are equal:

   1. Contribution rate for earnings up to the YMPE over the contribution rate for earnings in excess of the YMPE, and

   2. Accumulation rate for benefits up to the YMPE over the accumulation rate for benefits in excess of the YMPE (i.e. 1.375% to 2% = 0.6875)

d) Add the rate determined in (a) above to the split contribution rates established in (c). These are the contribution rates for earnings up to, and in excess of the YMPE for each group.

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[11] For the determination of member contribution rates, the benefits for operational service were excluded. As a result, the government contributions are slightly higher than member contributions.

[12] As defined at A.4.1.

The resulting contribution rates are calculated on a plan year basis. They are then converted in a calendar year basis using a proration method.

This modified cost method respects the fundamental attributes of the projected unit credit cost method and provides an appropriate allocation of the cost between Group 1 and Group 2 contributors and the costs for benefits in relations to earnings up to, and in excess of the YMPE.

E.2.2 Actuarial liability

The actuarial liability with respect to contributors corresponds to the value, discounted in accordance with the actuarial assumptions, of all future payable benefits accrued as at the valuation date in respect of all previous service. For pensioners and survivors, the actuarial liability corresponds to the value, discounted in accordance with the actuarial assumptions, of future payable benefits.

E.2.3 Government contributions

The recommended government contribution corresponds to the sum of:

- the government current service cost;
- the government contributions for prior service; and
- as applicable, special credits/payments in respect of a shortfall/deficit or, as the case may be, debits when an actuarial surplus exists.

Appendix F — PSSA economic assumptions

As per the Funding Policy, all of the assumptions used in this report are best-estimate assumptions, i.e., they reflect our best judgment of the future long-term experience of the plan and do not include margins.

F.1 Inflation-related assumptions

F.1.1 Level of inflation

Price increases, as measured by changes in the Consumer Price Index (CPI), tend to fluctuate from year to year. In 2021, the Bank of Canada and the Government of Canada renewed their commitment to bring inflation at the 2% midpoint of their inflation-control target range of 1% to 3%. Based on economic forecasts as of December 2023, the CPI is expected to be at a level above 2% for the following four years and to revert to the Bank of Canada's long-term target thereafter. It is assumed that the Bank of Canada will remain committed to meeting the mid-range 2% target in the year 2025[13]. In this report, it is assumed that the level of inflation will be 3.6% in plan year 2024, 2.5% in plan year 2025, 2.1% in plan years 2026 and 2027. The ultimate rate of 2.0% is reached in plan year 2028. The assumed ultimate rate is unchanged from the previous valuation.

F.1.2 Increase in pension indexing factor

The assumption in respect to the year's pension indexing factor is required to account for indexation of pensions each January 1. It is derived by applying the indexation formula described in Appendix A, which relates to the assumed CPI increases over successive 12-month periods ending on September 30.

F.2 Employment earnings increases

F.2.1 Increase in the year's maximum pensionable earnings (YMPE)

Since the benefit payable under the plan when a pensioner attains age 65[14] is calculated based on the YMPE, an assumption for the increase in the YMPE is required in the valuation process. The assumed increase in the YMPE for a given calendar year is derived, in accordance with the *Canada Pension Plan*, from the increase in the average weekly earnings (AWE), as calculated by Statistics Canada, over successive 12-month periods ending on 30 June. The AWE, and thus the YMPE, is deemed to include a component for seniority and promotional increases.

The YMPE is equal to $68,500 for calendar year 2024. It increased by 2.9% compared to 2023. Future increases in the YMPE correspond to the assumed real[15] increase in the AWE plus assumed increases in the CPI.

The real-wage differential (real increase in the AWE) is developed taking into account historical trends, a possible labour shortage, and an assumed moderate economic growth for Canada. Due to elevated inflation that has stayed higher after the economy emerged from the COVID-19 pandemic, the real-

[13] https://www.bankofcanada.ca/2024/04/mpr-2024-04-10/

[14] Or becomes entitled to a disability pension from the CPP (or QPP).

[15] Note that all of the real rates presented in this report are actual differentials, i.e. the difference between the effective annual rate and the rate of increase in prices. This differs from the technical definition of a real rate of return, which, for example in the case of the ultimate Pension Fund assumption would be 3.9% (derived from 1.060/1.020) rather than 4.0%.

differential is assumed to be -0.7% in plan year 2024, 0.4% in plan year 2025, 0.8% for plan years 2026 and 2027, with the ultimate assumption of 0.9% by plan year 2028 (1.0% by 2027 in the previous valuation). Combined with the assumed inflation, the resulting assumed annual increase in nominal wages is 2.9% starting from plan year 2024.

F.2.2 Increase in pensionable earnings

Pensionable earnings are projected to calculate the pension liability and service cost. The increase in pensionable earnings has two components, the economic increase and the seniority and promotional increase. It is assumed that the economic increase in pensionable earnings is separate from the seniority and promotional increase which is accounted for in the demographic assumptions. Except for the first two years which reflect the current collective agreements, the annual increase in pensionable earnings is assumed to be 0.5% higher than the corresponding increase in CPI. This corresponds to an ultimate increase in average pensionable earnings of 2.5% for plan year 2028 and thereafter (2.7% in the previous valuation for plan year 2029 and thereafter).

F.2.3 Increase in tax-related maximum pensionable earnings (MPE)

The maximum annual pension accrual of $3,506.67 for 2023 will increase to $3,610.00 for 2024, in accordance with *Income Tax Regulations*. Thereafter, the maximum annual pension accrual is assumed to increase in accordance with the assumed annual increase in the YMPE, which is the same as the assumed annual increase in the AWE.

The tax-related maximum pensionable earnings were derived from both the maximum annual pension accrual under a registered defined benefit plan and the YMPE. The MPE is equal to $202,000 for calendar year 2024.

F.3 Investment-related assumptions

F.3.1 New money rate

The new money rate is the nominal yield on 10-year-plus Government of Canada bonds and is set for each year in the projection period. The real yield on 10-year-plus federal bonds is equal to the new money rate less the assumed rate of inflation.

The one-year average real yield on long-term Canadian federal bonds as at 31 March 2024 is set at -0.3% and assumed to gradually increase to reach 2.0% by plan year 2035 and remain at that level.

The annual nominal yield on 10-year-plus federal bonds is assumed to be 3.3% in plan year 2024. It is projected to increase gradually to its ultimate level of 4.0% in plan year 2035. The assumed rates over the short-term (2024-2027) are consistent with the average of private sector forecasts and take into account the recent market conditions as of 31 December 2023. The ultimate level of 4.0% is equivalent to an ultimate real rate of 2.0%. The ultimate real yield was assumed to be 2.1% in plan year 2034 in the previous valuation. The assumed real new money rates over the plan years 2024 to 2035 are on average 0.2% higher than those assumed in the previous valuation over the same period.

F.3.2 Projected yields on superannuation account

The projected yields on the Superannuation Account are required for the computation of present values

of benefits to determine the liability for service prior to 1 April 2000. The projected nominal yields on the Superannuation Account were determined by an iterative process involving the following:

- the combined notional bond portfolio of the three Superannuation Accounts as at the valuation date;
- the assumed future new money interest rates;
- the expected future benefits payable in respect of all pension entitlements accrued up to 31 March 2000;
- the expected future contributions for prior service elections made up to 31 March 2000; and
- the expected future administrative expenses.

Each quarterly interest credit to a Superannuation Account is calculated as if the principal at the beginning of a quarter remains unchanged during the quarter. The projected yield on the Account is 3.1% in plan year 2024. It is projected to reach a low of 2.6% in 2031 and to reach its ultimate value of 4.0% in 2050.

F.3.3 Rate of return on the Pension Fund

The expected annual nominal rates of return on the Pension Fund are required for the computation of present values of benefits to determine the liability for service since 1 April 2000 and the current service cost. The following sections describe how the rates of return on the Pension Fund are determined.

F.3.3.1 Investment strategy

Since 1 April 2000, government and employee contributions, net of benefit payments and administrative expenses, are invested in capital markets by PSP Investments. PSP Investments' mandate is to achieve a maximum rate of return, without undue risk of loss, with regard to the funding, policies and requirements of the public sector pension plans. PSP Investments' investment policy is set and approved by its Board of Directors and takes into account the Funding Policy for the public sector pension plans, including the Reference Portfolio set out in this Funding Policy, as well as financial market constraints. The Reference Portfolio is a passively managed, easily investable portfolio used to express the funding risk target of the Government of Canada in respect to the public sector pension plans. It is communicated by the Treasury Board of Canada Secretariat on behalf of the President of the Treasury Board to PSP Investments, which then uses this portfolio as an anchor for its investment policy.

For the purpose of this report and in line with the PSP Investments' investment policy, the investments have been grouped into four broad categories: fixed income securities, equities, real assets and credit. Fixed income securities consist of a mix of federal, provincial and inflation-linked bonds. Equities consist of public (Canadian and foreign) and private equities. Real assets include real estate, infrastructure and natural resources. Credit is composed of private debt investments, non-investment-grade public debt and quasi-debt investments.

As at 31 March 2023, PSP Investments' assets consisted of 22% fixed income securities (including 2.5% cash), 37% equity (including 0.5% complementary investments), 30% real assets and 11% credit. PSP Investments has developed a long-term target Policy Portfolio, which consists of 23% fixed income securities, 37% equity, 31% real assets and 9% credit. The Policy Portfolio asset mix weights represent

long-term targets. Therefore, it is assumed that the initial asset mix (derived using the actual investments reported by PSP Investments as at 31 March 2023) will gradually converge towards the long-term target Policy Portfolio. The ultimate asset mix is assumed to be reached in plan year 2026.

Net cash flows (contributions less expenditures, excluding special payments, if any) are expected to become negative during plan year 2034 at which point a portion of assets will be required to pay benefits.

Table 41 shows the assumed asset mix for each plan year throughout the projection period.

Table 41 Asset mix

Plan year	Fixed income securities	Cash	Public equity	Private equity	Real assets	Credit
2024	19%	3%	22%	15%	30%	11%
2025	21%	2%	23%	14%	30%	10%
2026 and after	22%	1%	25%	12%	31%	9%

F.3.3.2 Rates of return by asset class

Rates of return are determined for each asset class in which the Pension Fund assets are invested. With the exception of fixed income securities and cash, rates of return are assumed to remain constant for the entire projection period. The expected progression of fixed income securities' rates of return reflects the current context of rising long-term yields. A constant rate of return is assumed for more volatile asset classes, reflecting the difficulty to predict annual market returns.

The rates of return were developed by looking at historical returns (expressed in Canadian dollars); these returns were then adjusted upward or downward to reflect future expectations. Given the long projection period, future gains and (losses) due to currency variations are expected to offset each other over time. Hence, it was assumed that currency variations will not have an impact on the long-term rates of return.

As in the previous valuation, an overall allowance for diversification has been added to the rate of return on the total assets. Such diversification is achieved through the rebalancing of the portfolio and aims at keeping the asset mix constant.

All rates of return described in this section are shown before reduction for assumed investment expenses; Appendix F.3.3.3 describes how the returns are adjusted for investment expenses.

Cash

The real yield on cash is assumed to be at 1.1% in plan year 2024, reaching its highest level of 1.8% in plan year 2025 as inflation expectation narrows and start converging to its historical norms in the subsequent years. The real yield on cash is expected to reach its ultimate rate of 0.5% in plan year 2032.

Fixed income securities

As at 31 March 2023, PSP Investments had 22% of its portfolio invested in fixed income securities, including Canadian fixed income, inflation-linked bonds (mostly US Treasury Inflation-Protected Securities (TIPS)) and cash. It is assumed that the proportion invested in fixed income securities

(including cash) will increase to 23% of Pension Fund assets in plan year 2026 and remain at that level for the projection period.

The fixed income securities' ultimate mix (excluding cash) in plan year 2026 and thereafter is expected to consist of 24% federal bonds, 20% provincial bonds, 33% US TIPS and 23% emerging market debt, which reflects PSP Investments' long-term target allocation.

As described in Appendix F.3.1 above, the assumed real yield on 10-year-plus federal bonds is assumed to be negative in plan year 2024 and then increase gradually to its ultimate level of 2.0% in plan year 2035. Compared to cash, the yield on 10-year-plus federal bonds is 140 basis points lower in plan year 2024 and 100 basis points lower in plan year 2025 due to the inverted yield curve. Starting in plan year 2026, the yield on 10-year plus federal bonds is assumed to be higher than cash and is assumed to reach the ultimate spread of 150 basis points by plan year 2035.

Since the current PSP Investments' Policy Portfolio and its long-term target Policy Portfolio are composed of universe bonds (long, mid and short term), it is assumed that fixed income securities are composed of universe bonds for the entire projection period. Due to their overall shorter maturity, the yields on universe bonds are lower than the yields on long-term bonds. As a result, the spreads of universe bonds over cash are lower than those of long-term bonds over cash. The spread of the universe federal bonds over cash is assumed to be negative 83 basis points in plan year 2024 due to the inverted yield curve but will gradually increase to 79 basis points in plan year 2035.

Credit quality is another important factor affecting bond spreads. The spread on provincial bonds versus cash is expected to be greater than the spread of federal bonds versus cash. However, that spread is smaller than the spread on emerging market bonds, which present additional credit risk and currency risk. The initial spread of universe provincial bonds over cash is assumed to be negative 47 basis points while the ultimate spread is assumed to be 174 basis points (in plan year 2035). The initial spread of emerging market debt over cash is assumed to be 127 basis points and the ultimate spread is assumed to be to 299 basis points in plan year 2035. Inflation-linked bonds offer protection against inflation, which tends to lower the spread versus cash. The initial spread of inflation-linked bonds (US TIPS) over cash is assumed to be 98 basis points and is expected to increase to 110 basis points in plan year 2035.

The expected real rates of return for individual bonds take into account the coupons and market value fluctuations due to the expected movement of their respective yield rates. An ultimate fixed income real rate of return of 2.1% is assumed for 2035 and thereafter.

Equity

As of 31 March 2023, 37% of the assets of the Pension Fund are invested in equities (both public and private). In the derivation of the real rates of return for these equity investments, consideration was given to dividend yields, expected growth of the underlying economies, and long-term risk premiums for various factors such as size and geography.

Public equities are composed of developed market equities, developed market small capitalization equities (small caps), and emerging market equities.

Various elements contribute to the return on an equity investment such as earnings, dividends paid to shareholders, fluctuation in valuation, and exchange rates for non-Canadian investments.

Over long periods, valuation changes and currency fluctuations are not expected to contribute

significantly to the return on broad equity markets. Therefore, it is assumed that expectations regarding dividend yields and earnings growth are sufficient to project future equity returns, with additional adjustments for the riskiness of small caps and emerging market equities. Based on historical dividend yields for developed markets and PSP Investments' Policy Portfolio equity allocation, the income derived from dividend and buybacks yield on developed market equities is expected to be 3.1%. Growth in earnings is proxied using GDP growth per capita; and it is expected to add 0.9% to the overall real return of developed market equities. Hence, the expected return on developed market equities is 4.0%. Because of their additional risk, small caps are assumed to yield an additional 0.2% and emerging market equities are assumed to yield an additional 1.0%.

The overall real return on public equities, based on PSP Investments' relative allocation to developed market, small caps and emerging market equities, is projected to be 4.3%.

The expected real return for private equities is expected to be 70 basis points higher than for public equities, reflecting the additional risk inherent with investments in private markets. Thus, the real rate of return for private equity is projected to be 5.0%.

Real assets

As at 31 March 2023, 30% of the assets of the Pension Fund are invested in the real assets (43% real estate, 40% infrastructure, and 17% natural resources). The expected real rate of return on real assets is the asset-value weighted average returns of the three sub-classes. The returns on real estate and infrastructure assets are derived from two components: income returns and asset valuation growth. Each component references historical data and judgment on the expectation of the future outcomes such as projected per capita GDP growth rate. Since natural resources is a relatively new type of asset class, the historical data on returns is limited. Therefore, the return on natural resources is assumed as the weighted average returns of real estate and infrastructure. The income returns for real estate and infrastructure are 3.5% and 2.9% respectively. In addition, a 0.6% growth return is assumed for both asset classes. Collectively, the real assets are projected to earn 3.9% throughout the projection period.

Credit

As of 31 March 2023, 11% of the assets of the Pension Fund are invested in credit. Based on the information received, PSP Investments' exposure to this asset class is made through High-yield bonds. It is assumed that the return on credit would yield 250 basis points above Canadian federal universe bonds adjusted to U.S. market. Thus, Credit is projected to earn 3.7% real throughout the projection period.

Table 42 summarizes the assumed real rates of return by asset class throughout the projection period, prior to reduction for investment expenses.

Table 42 Real rate of return by asset class
(in percentage)

Plan year	Fixed income securities	Cash	Public equity	Private equity	Real assets	Credit
2024	1.3	1.1	4.3	5.0	3.9	3.7
2025	2.8	1.8	4.3	5.0	3.9	3.7
2026	2.9	0.7	4.3	5.0	3.9	3.7
2027	3.3	0.5	4.3	5.0	3.9	3.7
2028	3.4	0.6	4.3	5.0	3.9	3.7
2029	3.3	0.6	4.3	5.0	3.9	3.7
2030	3.2	0.6	4.3	5.0	3.9	3.7
2031	3.1	0.6	4.3	5.0	3.9	3.7
2032	3.0	0.5	4.3	5.0	3.9	3.7
2033	2.7	0.5	4.3	5.0	3.9	3.7
2034	2.4	0.5	4.3	5.0	3.9	3.7
2035 and after	2.1	0.5	4.3	5.0	3.9	3.7

F.3.3.3 Investment expenses

Over the last three plan years, PSP Investments' operating and asset management expenses averaged 0.7% of average net assets. It is assumed that going forward, PSP Investments investment expenses will average 0.7% of average net assets. The majority of those investment expenses were incurred through active management decisions.

The objective of active management is to generate returns in excess of those from the Policy Portfolio, after reduction for additional expenses. Thus, the additional returns from a successful active management program should equal at least the cost incurred to pursue active management. In nine of the past ten years, PSP Investments' additional returns from active management exceeded related expenses. For the purpose of this valuation, it is assumed that additional returns due to active management will equal additional expenses related to active management. These expenses are assumed to be the difference between total investment expenses of 0.7% and the assumed expenses of 0.2% that would be incurred for the passive management of the portfolio.

The next section shows the overall rate of return on the fund net of investment expenses.

F.3.3.4 Overall rate of return on assets of the Pension Fund

The best-estimate rate of return on total assets is derived from the weighted average assumed rate of return on all types of assets using the assumed asset mix proportions as weights. The best-estimate rate of return is further increased to reflect additional returns due to active management and allowance for rebalancing and diversification, and reduced to reflect all investment expenses. Table 43 shows how the ultimate nominal and real rates of return are developed.

Table 43 Overall rate of return on assets of the Pension Fund

	Nominal	Real
Weighted average rate of return	5.7%	3.7%
Additional returns due to active management	0.5%	0.5%
Allowance for rebalancing and diversification[a]	0.5%	0.5%
Expected investment expenses		
Expenses due to passive management	(0.2%)	(0.2%)
Additional expenses due to active management	(0.5%)	(0.5%)
Total expected investment expenses	(0.7%)	(0.7%)
Ultimate net rate of return	6.0%	4.0%

a. 0.45% before rounding.

The resulting nominal and real rates of return for each projection year are as follows:

Table 44 Rates of return on assets in respect of the Pension Fund
(in percentage)

Plan year	Nominal	Real
2024	5.8	2.2
2025	6.1	3.6
2026	6.1	4.0
2027	6.3	4.2
2028	6.3	4.3
2029	6.2	4.2
2030	6.2	4.2
2031	6.2	4.2
2032	6.2	4.2
2033	6.1	4.1
2034 and after	6.0	4.0
2024 to 2028 (annualized)	6.1	3.7
2024 to 2033 (annualized)	6.1	3.9
2024 to 2043 (annualized)	6.0	4.0

It is assumed that the ultimate real rate of return on investments will be 4.0% in 2035, net of all investment expenses. This represents an increase of 0.1% from the previous valuation. The real rates of return over the first ten years of the projections are on average 0.3% higher than assumed for the corresponding years in the previous valuation. The real rate of return on assets takes into account the assumed asset mix as well as the assumed real rate of return for all categories of assets. The nominal returns projected for the Pension Fund are simply the sum of the assumed level of inflation and the real return.

Using the variable nominal rates of return on assets in the previous table is equivalent to using a unique flat nominal discount rate of 6.1% for the purpose of calculating the liability at 31 March 2023 for service since 1 April 2000.

F.3.4 Transfer value real interest rate

Interest rates for transfer values are determined in accordance with the Standards of Practice published by the Canadian Institute of Actuaries (CIA). The CIA issued amendments to the standards for determining the interest rates used for the computation of commuted value which are effective 1 February 2022.

Details can be found in the Section 3540 of the CIA Standards of Practice.

The following table shows the assumed transfer value real interest rates used in this report:

Table 45 Transfer value real interest rates
(As a percentage)

					Real interest rates	
Plan year	r_L	i_L	i_7	r_7	First 10 years	After 10 years
2024[a]	n/a	n/a	n/a	n/a	2.7	2.8
2025	1.5	3.3	3.3	1.5	2.5	2.7
2026	1.5	3.3	3.3	1.5	2.4	2.8
2027	1.5	3.3	3.2	1.4	2.4	2.8
2028	1.5	3.4	3.3	1.4	2.3	2.8
2029	1.6	3.5	3.3	1.4	2.3	2.9
2030	1.7	3.6	3.3	1.5	2.4	3.0
2031	1.8	3.7	3.4	1.5	2.4	3.1
2032	1.8	3.8	3.4	1.5	2.4	3.1
2033	1.9	3.9	3.5	1.5	2.3	3.2
2034	2.0	4.0	3.5	1.5	2.3	3.3
2035 and after	2.1	4.1	3.5	1.5	2.4	3.4

a. Monthly real interest rates that were used for plan year 2024 are the average of plan year 2024.

F.3.5 Administrative expenses

PSP Investments operating expenses are implicitly recognized through a reduction in the real return on the Pension Fund. The same approach was used in the previous valuation.

The administrative expenses are assumed to be 0.45% of pensionable payroll, which is 0.05% higher than the previous valuation. The assumption reflects the average of administrative expenses over the last three years. It does not consider events, plan changes for example, that can lead to significant short-term variations in administrative expenses expressed as a percentage of payroll.

For plan year 2024, 39% of total administrative expenses are being charged to the Superannuation Account; it is assumed that the proportion charged for the Superannuation Account will reduce at an annual rate of 2% the same as in the previous report. Expenses expected to be debited to the Superannuation Account in the future have been capitalized and are shown as a liability on the balance sheet, whereas the expenses to the Pension Fund are shown on an annual basis as they occur.

F.3.6 Summary of economic assumptions

The economic assumptions used in this report are summarized in the following table.

Table 46 Economic assumptions
(as a percentage) [a]

	Inflation		Employment earning increases			Interest		
Plan year	CPI	Pension indexation[b]	YMPE[b]	Pensionable earnings	Maximum pensionable earnings[b]	New money rate[b]	Projected yield on Account	Projected return on Fund
2024	3.6	**4.8**	**2.9**	**3.5**	**3.0**	**3.3**	3.1	5.8
2025	2.5	2.9	2.9	2.3	2.9	3.3	3.0	6.1
2026	2.1	2.2	2.9	2.6	2.9	3.3	2.9	6.1
2027	2.1	2.1	2.9	2.6	2.9	3.3	2.9	6.3
2028	2.0	2.0	2.9	2.5	2.9	3.4	2.8	6.3
2029	2.0	2.0	2.9	2.5	2.9	3.5	2.7	6.2
2030	2.0	2.0	2.9	2.5	2.9	3.6	2.7	6.2
2031	2.0	2.0	2.9	2.5	2.9	3.7	2.6	6.2
2032	2.0	2.0	2.9	2.5	2.9	3.7	2.6	6.2
2033	2.0	2.0	2.9	2.5	2.9	3.8	2.6	6.1
2035	2.0	2.0	2.9	2.5	2.9	4.0	2.6	6.0
2040	2.0	2.0	2.9	2.5	2.9	4.0	3.1	6.0
2045	2.0	2.0	2.9	2.5	2.9	4.0	3.8	6.0
2050 and after	2.0	2.0	2.9	2.5	2.9	4.0	4.0	6.0

a. Bold figures denote actual experience.
b. Assumed to be effective as at 1 January.

Appendix G — PSSA demographic assumptions

G.1 Demographic assumptions

Given the size of the population subject to the PSSA, the plan's own experience, except where otherwise noted, was deemed to be the best model to determine the demographic assumptions. Assumptions from the previous valuation were updated to reflect past experience to the extent it was deemed credible.

Members age and service are determined by rounding their exact value to the nearest integer at the beginning of the plan year.

G.1.1 Seniority and promotional salary increases

Seniority means length of service within a classification, and promotion means moving to a higher paid classification. The assumption of the previous report was changed by giving equal credibility to the plan's experience over the last three plan years and the assumption from the previous valuation.

Table 47 Sample of assumed seniority and promotional salary increases
(Percentage of annual earnings)

Years of pensionable service	Male	Female
0	6.1	6.3
1	5.6	5.8
2	5.0	5.3
3	4.4	4.7
4	3.8	4.1
5	3.4	3.6
6	3.0	3.3
7	2.8	3.0
8	2.5	2.8
9	2.4	2.7
10	2.2	2.5
15	1.6	1.9
20	1.2	1.5
25	1.0	1.2
30	0.8	1.1
35	0.8	0.9
40 and above	0.6	0.7

G.1.2 New contributors

As the active population of the plan is expected to grow, new contributors are projected to replace members that cease to be active as well as increase the number of contributors over time.

The assumed percentage increase in the number of contributors for each plan year is shown in the following table. The increase for Plan year 2024 is based on actual headcounts.

Table 48 Assumed annual increases in number of contributors

Plan Year	Percentage
2024	3.8
2025 to 2026	-1.0
2027 to 2031	0.7
2032 and after	0.6

It is assumed that the distribution of new members by age, gender, service, and salary level (which is adjusted by the economic increases) will be on average the same as those of members with less than one year of service at each of the three years preceding the valuation date.

G.1.3 Pensionable retirement

Pensionable retirement means ceasing to be an active member and immediately starting to receive an annuity (immediate annuity or an annual allowance) for reasons other than disability.

The assumed rates of pensionable retirement were revised to reflect the intervaluation experience.

Where less data was available, limited credibility was given to the intervaluation experience. In particular, no credibility was given to the experience of Group 2 members with more than 10 years of service (since group inception is in 2013).

For Group 2 contributors, the retirement assumption for members with more than 10 years of service was developed using the same methodology as in previous valuations.

Group 2 rates between ages 55-64 were derived from Group 1 retirement rates in a way that a member aged 50 has the same probability of reaching age 65 in either group.

Retirement rates for ages 65 and above are the same for both Group 1 and 2.

The intervaluation experience shows that members slightly postponed their retirement compared to the expected rates.

Tables 49 to 53 provide sample rates of pensionable retirement.

Table 49 Sample of assumed rates of retirement – Main group 1 – Male
(Per 1,000 individuals)

	Years of pensionable service						
Age	2	5	10	20	29	30	35
50	55	35	25	15	20	20	0
55	50	45	30	20	130	280	275
60	90	75	100	165	275	320	335
65	160	135	245	250	235	325	335
70	220	310	250	325	315	330	530

Table 50 Sample of assumed rates of retirement – Main group 2 – Male
(Per 1,000 individuals)

	Years of pensionable service						
Age	2	5	10	20	29	30	35
55	40	40	30	19	25	28	0
60	85	65	75	57	162	301	332
65	160	135	245	250	235	325	335
70	220	310	250	325	315	330	530

Table 51 Sample of assumed rates of retirement – Main group 1 – Female
(Per 1,000 individuals)

	Years of pensionable service						
Age	2	5	10	20	29	30	35
50	90	45	15	10	15	15	0
55	65	45	30	30	200	325	550
60	115	70	130	200	360	375	400
65	205	230	240	290	240	300	395
70	300	415	270	275	300	280	495

Table 52 Sample of assumed rates of retirement – Main group 2 – Female
(Per 1,000 individuals)

	Years of pensionable service						
Age	2	5	10	20	29	30	35
55	55	35	25	16	21	23	0
60	95	70	95	76	233	355	585
65	205	230	240	290	240	300	395
70	300	415	270	275	300	280	495

Table 53 Sample of assumed rates of retirement – Operational group
(Per 1,000 individuals)

	Years of pensionable service						
Age	2	5	10	20	25	30	35
40	0	0	0	0	0	0	0
45	0	0	0	5	20	0	0
50	15	15	15	10	125	100	0
55	20	20	20	15	100	225	350
60	100	100	100	125	250	250	500
65	300	300	300	300	450	300	500
70	300	300	300	300	500	500	500

G.1.4 Disability retirement

The disability incidence rate assumption was revised to reflect the intervaluation experience, by giving equal credibility to the plan's experience over the last three plan years and the assumption from the previous valuation. The intervaluation experience for ages above 59 was combined since it was less credible.

Disability incidence is independent from plan provisions. As such, the incidence rates are the same for all members. Rates for ages between 60 and 64 only apply for Group 2 members (main and operational).

It is assumed that 75% of future new disability pensioners will receive a CPP (or QPP) disability pension at the onset of disability. In those cases, the coordination of the plan with CPP (or QPP) is assumed to start immediately instead of age 65. This is unchanged from the previous valuation.

Table 54 Sample of assumed rates of pensionable disability
(Per 1,000 individuals)

Age	Male	Female
25	0.00	0.00
30	0.15	0.10
35	0.40	0.85
40	0.70	1.65
45	1.40	2.65
50	2.45	4.45
55	4.00	6.25
59	4.50	6.55
60 to 64[a]	2.00	6.00
65 and above	0	0

a. Rates for ages 60 and above are nil for Group 1

G.1.5 Withdrawal

Withdrawal with less than two years of service includes termination of employment for any reason.

Withdrawal with two or more years of service means termination of employment for reasons other than death, disability or retirement with an immediate annuity or an annual allowance. The withdrawal rate assumption was revised to reflect the plan experience.

Main members

The assumed withdrawal rates were developed by giving equal credibility to the plan's experience over the last three plan years and the assumption from the previous valuation.

In addition, for Group 2 contributors aged 50 to 54 with 2 to 10 years of service, the assumed withdrawal rates were developed by giving equal credibility to the plan's experience over the last six plan years and the assumption from the previous valuation.

Table 55 and Table 56 provide samples of the assumed rates of withdrawal for the main group.

The rates for age 50 to 54 for at least 2 years of pensionable service shown in the two following tables only apply for Group 2. Group 1 members under those criteria are expected to retire.

Table 55 Sample of assumed rates of withdrawal – Main group – Male
(Per 1,000 individuals)

	Years of pensionable service						
Age	0	1	2	5	10	15	21 and after
20	420	250	80	0	0	0	0
25	150	120	70	40	0	0	0
30	99	85	50	28	14	0	0
35	88	75	50	28	14	10	0
40	90	76	50	28	14	10	0
45	96	78	50	28	14	10	0
50	115	91	50	28	14	10	0
54	133	105	50	28	14	10	0
60	190	158	0	0	0	0	0
65	259	196	0	0	0	0	0

Table 56 Sample of assumed rates of withdrawal – Main group – Female
(Per 1,000 individuals)

	Years of pensionable service						
Age	0	1	2	5	10	15	21 and after
20	350	200	100	0	0	0	0
25	130	110	60	23	0	0	0
30	94	82	50	23	13	0	0
35	88	71	50	23	13	10	0
40	92	72	50	23	13	10	0
45	102	77	50	23	13	10	0
50	129	97	50	28	15	10	0
54	156	112	50	30	20	15	0
60	223	164	0	0	0	0	0
65	312	220	0	0	0	0	0

Operational members

Assumed withdrawal rates for operational service vary on the basis of service only. They were developed by giving equal credibility to the plan's experience over the last three plan years and the assumption from the previous valuation.

The assumed rates of withdrawal are the same for actual operational contributors as well as for deemed operational contributors.

Table 57 Sample of assumed rates of withdrawal – Operational group
(Per 1,000 individuals)

Years of pensionable service	Unisex
0	50
1	40
2	30
3	22
4	17
5	14
10	9
15	9
19	7
20 and after	0

G.1.6 Proportions of terminating contributor opting for a deferred annuity

Following a termination of employment with a least 2 years of pensionable service, members not immediately retiring are entitled to defer their annuity (Appendix A.4.9). It is assumed that members:

- Main group 1 members below age 50;
- Main group 2 members below age 55;
- Operational members with less than 20 years of deemed or operational service;

can opt to transfer the commuted value of their deferred pension out of the Plan (Appendix A.4.10).

This assumption was revised to reflect the intervaluation experience. A constant rate was selected to account for the limited experience in some age and service groups.

The proportion of members, upon withdrawal, who elect a deferred annuity is assumed to be:

- Main members: 70%
- Operational members: 45%

The proportion of members, who, upon termination of employment, are eligible to either an annual allowance (Appendix A.4.11) or a deferred annuity and who elect a deferred annuity is assumed to be 0% for all members.

G.1.7 Mortality

The mortality rates assumed for contributors, non-disabled pensioners, disabled pensioners and surviving spouses were derived by giving 50% credibility to the plan's experience over the last three years and 50% credibility to the previous assumption. The mortality experience for members was weighted by salary[16] to reflect the impact of socio-economic status on mortality rates. It is assumed that an above (below) average socio-economic status, which is partly dictated by salary level, leads to longer (shorter) life expectancy.

For surviving spouses, in the previous valuation, the mortality rates for ages below 60 were revised to zero given the low number of surviving spouses aged below 60 and the minimal impact on the valuation of these rates. However, although these reasons remain true, the surviving spouse mortality rates in this valuation are non-zero for ages 15 to 115. The mortality rates for surviving spouse aged below 55 are assumed to be the same as for members. The mortality rates for surviving spouse aged from 55 to 59 are a blend of members mortality rates and experience of surviving spouse. Reinstating mortality rates for ages below 60 increases the consistency of the application of the mortality rates.

[16] Valuation salary for contributors and adjusted salary at retirement for pensioners.

The following table shows a sample of assumed mortality rates. The rates are weighted by salary for contributors and pensioners.

Table 58 Sample of assumed rates of mortality – For Plan year 2024
(Per 1,000 individuals)

	Contributors and non-disabled pensioners		Disabled pensioners		Surviving spouses	
Age	Male	Female	Male	Female	Male	Female
30	0.3	0.2	5.5	3.2	0.3	0.2
40	0.5	0.3	8.6	4.9	0.5	0.3
50	1.2	1.0	10.7	7.6	1.2	1.0
60	3.6	2.6	19.5	11.7	6.3	4.4
70	11.2	9.3	34.6	23.4	17.8	12.9
80	37.7	27.9	77.3	54.8	54.8	35.9
90	139.9	112.6	186.4	154.7	160.0	112.8
100	360.0	330.0	421.0	435.1	358.4	303.7
110	500.0	500.0	500.0	500.0	500.0	500.0

Mortality improvement factors

Mortality rates are reduced in the future in accordance with the same mortality improvement assumption used in the 31st Actuarial Report on the Canada Pension Plan. Mortality improvements are expected to continue in the future but at a slower pace, reaching the ultimate improvement rate of 0.8% for ages below 88 in plan year 2040. Further, it is assumed that, ultimately, mortality improvement rates for males will decrease to the same level as females.

Factors shown in the 31st Actuarial Report on the Canada Pension Plan are based on calendar years. These factors have been interpolated to obtain plan year mortality improvement factors (as at 31 March).

A sample of assumed mortality improvement rates is shown in the following table. An analysis of the sensitivity of financial results to variations of this assumption is provided in appendix K.2.

Table 59 Sample of assumed mortality improvement rates
(applicable at the beginning of the plan year)

	Initial and ultimate plan year mortality improvement rates (%)			
Age	Male at plan year 2025	Male at plan year 2040 and after	Female at plan year 2025	Female at plan year 2040 and after
40	0.60	0.80	0.79	0.80
50	1.34	0.80	1.27	0.80
60	1.73	0.80	1.53	0.80
70	1.65	0.80	1.27	0.80
80	1.54	0.80	1.04	0.80
90	1.48	0.62	1.34	0.62
100	0.67	0.28	0.75	0.28
110 and above	0.00	0.00	0.00	0.00

The following table shows the calculated cohort life expectancy[17] for contributors and non-disabled pensioners based on the mortality assumptions described in this section.

Table 60 Cohort life expectancy of contributors and non-disabled pensioners
(Years)

	As at 31 March 2023		As at 31 March 2039	
Age	Male	Female	Male	Female
60	27.3	28.9	28.2	29.8
65	22.5	24.1	23.4	24.9
70	18.0	19.5	18.9	20.3
75	13.8	15.3	14.6	16.0
80	10.1	11.4	10.8	12.0
85	6.9	7.9	7.5	8.5
90	4.5	5.3	5.0	5.7

G.1.8 Family composition[18]

Eligible spouse at the time of death

Upon the death of a member, the surviving spouse and children may be eligible to receive an annual allowance for eligible survivors (Appendix A.4.16).

The assumptions regarding spouse survivors were revised based on the intervaluation experience.

The assumption regarding the probability of a member, upon death, leaving a spouse eligible (Appendix A.4.14) to a survivor pension slightly decreased at younger ages and did not change materially at ages over 60.

Table 61 Probability of an eligible spouse at death of member

Age	Male	Female
30	0.25	0.34
40	0.41	0.52
50	0.53	0.55
60	0.59	0.50
70	0.61	0.41
80	0.59	0.25
90	0.43	0.08
100	0.16	0.01

[17] Cohort life expectancies take into account assumed future improvements in mortality and therefore differ from calendar year life expectancies, which are based on the mortality rates of the given attained year.

[18] Survivor pensions are not payable if the deceased member has less than two years of pensionable service.

Spouse age difference at the time of death

The assumed eligible spouse age difference at the time of death of the member is shown in the following table.

A widow is always assumed to be younger. A widower is assumed to be older when death occurs at a younger age and is assumed to be younger when death occurs at later ages. Other than the ultimate age difference set at age 90, no changes were made to this assumption.

Table 62 Spouse age difference with the member at death of member

Age	Widow	Widower
Before 70	(3)	2
70 to 89	(4)	0
90 and above	(6)	(2)

Gender difference

The sex of each eligible surviving spouse is assumed to be the opposite of the deceased member's.

Eligible children at the time of death

It is assumed that deceased members will have no eligible child survivors.

Children ceasing to be eligible for a survivor allowance

For actual eligible children at valuation date (see Appendix A.4.15), the following table shows the rates of children ceasing to be eligible to a survivor allowance.

Table 63 Assumed rates of children ceasing to be eligible for a survivor allowance
(Per 1,000 individuals)

Child age	All children
Before 18	0
18 to 24	250
25 and above	1000

Appendix H — Transfer value valuation methodology and assumptions

Section 92 (1) of the *Public Service Superannuation Regulations* states that demographic assumptions used for the calculation of transfer value are those of the last actuarial report filed prior to the calculation date. This section summarizes the methodology and assumptions required for the calculation of transfer values.

H.1 Valuation methodology

A contributor who has ceased to be employed in the Public Service is eligible to a deferred annuity and may elect to transfer the commuted value of the accrued pension benefits if that contributor:

- has two or more years of pensionable service and
- is under
    - age 50 if a Group 1 contributor, or
    - age 55 if a Group 2 contributor.

The transfer value payment made to the former contributor represents the present value of the benefit accrued at the time of termination. The present value evaluates the following benefits:

- the former contributor's accrued pension which is payable from age 60 for a Group 1 contributor or from age 65 for a Group 2 contributor;
- the former contributor's accrued pension which is payable immediately based on the probability that the contributor becomes disabled after termination but prior to age 60 for a Group 1 contributor or age 65 for a Group 2 contributor;
- 50% of the former contributor's accrued pension which is payable to surviving spouses based on the probability that the former contributor has an eligible surviving spouse at the time of death.
- 10% of the former contributor's accrued pension payable to children based on the probability that the former contributor has eligible children at the time of death.

H.2 Economic assumptions

Interest rates for transfer value amounts are determined in accordance with Section "Pension Commuted Values" of the Standards of Practice – Pensions published by the Canadian Institute of Actuaries.

H.3 Demographic assumptions

For the purpose of calculating the transfer value amount payable to a former contributor, the following demographic assumptions are used.

H.3.1 Mortality assumptions

The mortality rates and mortality improvement rates for a former contributor in receipt of an annuity, for a former contributor becoming disabled after termination, and a surviving spouse upon the death of the former contributor are respectively the same as discussed in Appendix G.1.7.

H.3.2 Disability incidence

The disability incidence rates are used to determine the proportion of former contributors becoming disabled during the period after termination and prior to the attainment of age 60 for former Group 1 contributors or age 65 for former Group 2 contributors are respectively the same as discussed in Appendix G.1.4.

H.3.3 Probability of an eligible spouse at death of former contributor

In order to be eligible for a survivor benefit, the survivor must be an eligible spouse[19] as at the termination date and remain eligible up until the time of death of the former contributor. Given that the PSPP does not capture the marital status at the time of termination, it is assumed that the proportions of former members married at termination are the same as for the Canadian population. As such, the data was extracted from the Statistics Canada Table 17-10-0060-01 for the years 2021 and 2022 for all ages below age 71.

The expected proportion of the former contributors having an eligible spouse at time of termination is determined by combining marital status of married (and not separated), separated (not living in common law) and living in common law.

Table 64 shows the expected proportions of former contributors having an eligible spouse at time of termination.

Table 64 Sample of assumed proportion eligible spouse at termination of employment[a]

Age[b]	Male	Female
20	0.03	0.07
30	0.52	0.64
40	0.75	0.77
50[c]	0.75	0.75

a. Survivor pensions are not payable if the deceased member has less than two years of pensionable service.
b. Expressed in rounded years calculated at the beginning of the plan year.
c. Rates above 50 are not applicable for Group 1 contributors, and rates above 55 are not applicable for all contributors

Once determined to be married at termination, a former contributor's probability of remaining in the marriage after the time of termination diminishes over time by reason of a possible divorce or death of the spouse before the member.

Once married, an individual is subject to the possibility of a divorce which would remove the survivor coverage at the former contributor's time of death if the spouse has survived to such time. As no experience data is available for the PSPP, it was assumed that the probabilities of divorce after marriage of former members are the same as for the Canadian population. As such, the data was extracted from the Statistics Canada Table 39-10-0053-01 for the years from 2013 to 2017.

[19] The eligible survivor is defined in Appendix A.4.14.

Table 65 Sample of assumed divorce rates

Age	Male	Female
20	0.010	0.014
30	0.014	0.014
40	0.014	0.014
50	0.011	0.010
60	0.005	0.004
70	0.002	0.001
80	0.002	0.001
90	0.002	0.001

For individual transfer value calculation purposes, it is assumed that at the date of termination, the spouse is three years younger than the male contributor and three years older than the female contributor.

It is assumed that deceased former members will leave no eligible child survivors.

Appendix I — RCA valuation methodology and assumptions

I.1 Valuation of the account balance

The amounts available for benefits comprise the recorded balances of the RCA (RCA No. 1 and RCA No. 2) Accounts, which form part of the Public Accounts of Canada as well as a tax credit (CRA refundable tax) with respect to the RCAs.

Interest is credited on the RCA Accounts every three months in accordance with the actual average yield on a book value basis for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces – Regular Force and RCMP pension plans. The actuarial value of the account balance is equal to the book value.

I.2 Valuation of liabilities

Described in this Appendix are the liability valuation methodologies used and any differences in economic assumptions from those used in the PSSA valuation.

I.2.1 Terminally funded RCA benefits

The following RCA benefits are being terminally funded (i.e. not prefunded but on an occurrence basis):

- Early Retirement Incentive (ERI) program
- pre-retirement survivor benefits
- minimum death benefit
- elective service

Except for the now-closed ERI program, the above benefits are terminally funded because they are uncommon or of little financial significance. For example, the pre-retirement survivor benefit becomes payable only when the average salary is less than 1.4 times the YMPE. As well, the minimum death benefit is expected to occur only with deaths at younger ages, where the probability of death is small.

I.2.2 RCA No. 1 post-retirement survivor benefits

The limit on the amount of spousal annual allowance that can be provided under the PSSA decreases when the member's pension is reduced due to the CPP (or QPP) offset, which usually occurs at age 65.

This benefit was valued conservatively by assuming the plan limit is always coordinated with the CPP (or QPP). The liability overstatement is minor because the probability of the former contributor dying prior to age 65 is small. (This overstatement tends to be offset by the understatement of accrued liability caused by terminally funding the pre-retirement survivor benefit.) The projected accrued benefit cost method was used to estimate the liabilities and normal costs for this RCA No. 1 benefit.

I.2.3 RCA No. 1 continued benefit accrual for former deputy heads

All former deputy heads that have accrued or are accruing benefits are included. For those accruing benefits, it was assumed that they would cease to do so when first eligible to receive an immediate annuity.

I.2.4 RCA No. 1 excess pensionable earnings

The projected accrued benefit cost method was used to estimate plan liability and current service costs for retirement benefits in excess of the Maximum Pensionable Earnings (MPE).

I.2.5 Administrative expenses

To compute the liability and current service costs, no provision was made regarding the expenses incurred for the administration of either the RCA No. 1 Account or the RCA No. 2 Account. These expenses, which are not debited from the RCA Accounts, are borne entirely by the government and are commingled with all other government expenses.

I.3 Actuarial assumptions

The valuation economic assumptions described in Appendix F were used without any modifications.

I.4 Valuation data

The RCA No. 1 and RCA No. 2 pension benefits in payment were provided as at 31 March 2023. RCA No. 1 and RCA No. 2 benefits expected to be paid in respect of contributors and accrued spousal allowances of current retired members were all derived from the membership data described in Appendix D and shown in Appendix M.

Appendix J — PSSA projections

The results of the following projections were computed using the data described in Appendices D and M, the methodology described in Appendix E and the assumptions described in Appendices F and G.

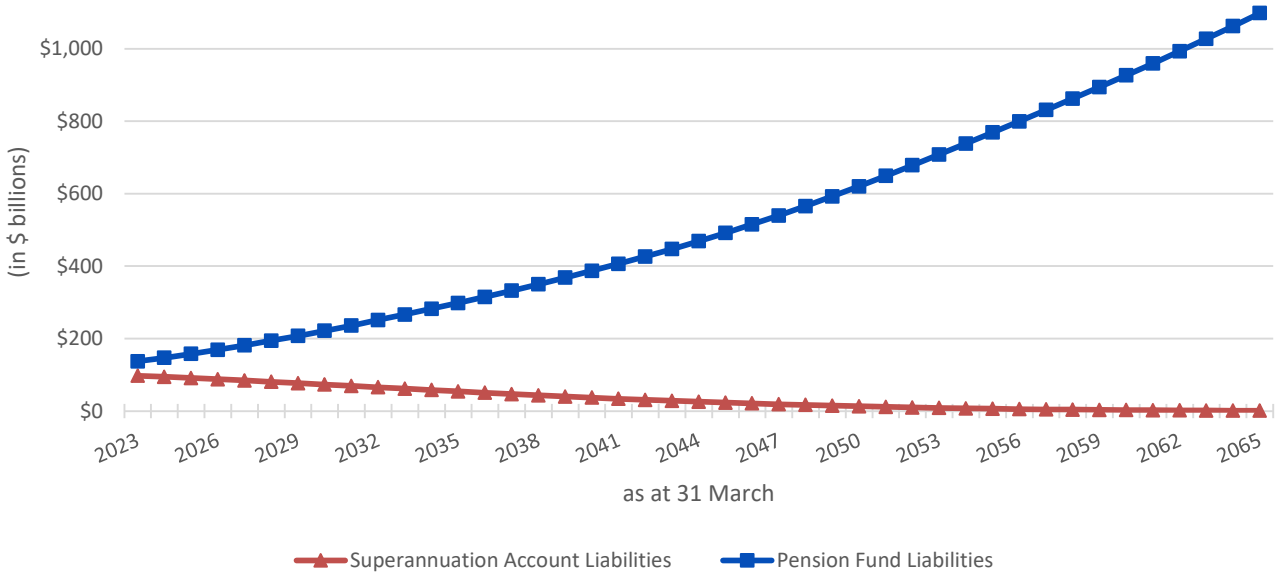
J.1 Projection of the Superannuation Account and the Pension Fund liabilities

Prior to 1 April 2000, the PSSA Superannuation Account tracked all government pension benefit obligations related to the PSSA. The Superannuation Account is now debited only with benefit payments made in respect of service earned before that date and administrative expenses; it is credited with prior service contributions related to elections made prior to 1 April 2000 and interest earnings.

Starting 1 April 2000, the PSSA is financed through the Pension Fund. The Pension Fund is credited with employer and member contributions, investment earnings and prior service contributions for elections made since 1 April 2000. The Pension Fund is debited with benefit payments made in respect of service earned since that date and administrative expenses.

Chart 1 presents the evolution over time of the Pension Fund and the Superannuation Account liabilities.

Chart 1 Pension Fund and Superannuation Account
Evolution of liabilities from plan year 2023 to plan year 2065 in $ billions



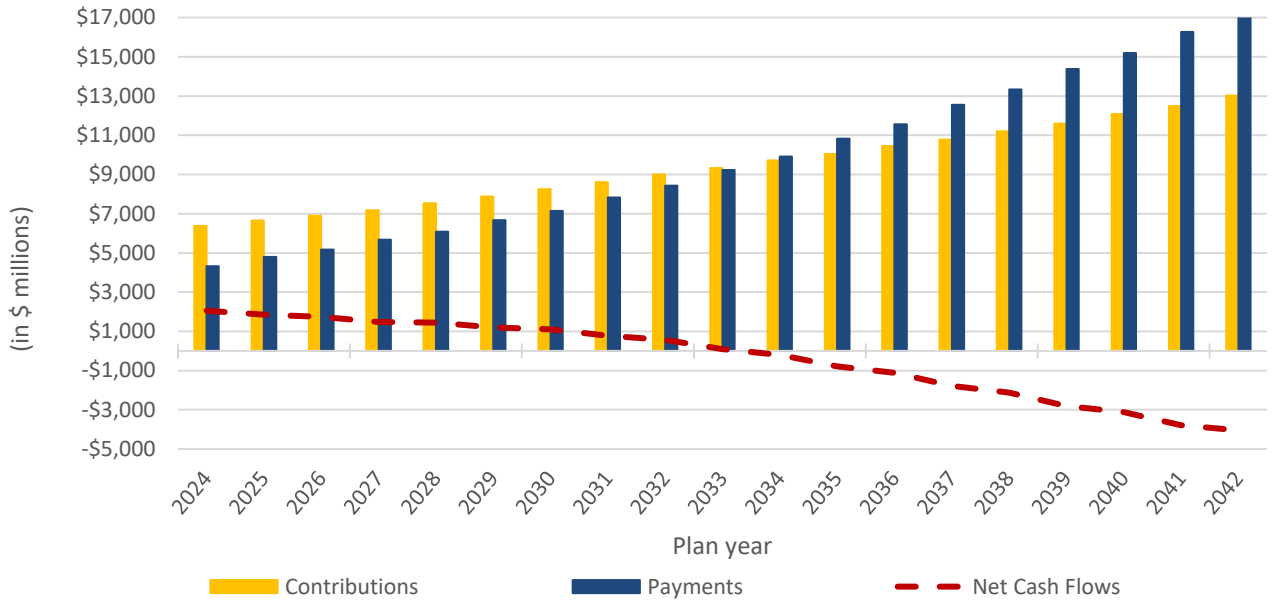
J.2 Evolution of cash flows under the pension fund

Contributions that are higher than payouts ensure that the Pension Fund has sufficient liquidity to cover all the payouts in a year. However, as the population of the Pension Fund matures, the amount of payouts will increase and will eventually exceed the contributions. This will result in negative cash flows to the Pension Fund.

It is expected that the Pension Fund will have negative cash flows from plan year 2034, at which point a portion of the assets will be required to pay benefits. However, regular liquid revenue from the Pension Fund such as fixed income interest, stock dividends, infrastructure and real estate rents will be readily available to cover the excess payouts. Nevertheless, it should be noted that although negative cash flows will begin in the plan year 2034, the Pension Fund's overall assets are expected to grow for the entire duration of the projection presented below when investment income is taken into consideration.

Contributions shown in Chart 2 represent the cost of the plan and do not consider reduction in contributions that could be put in place by the President of Treasury Board.

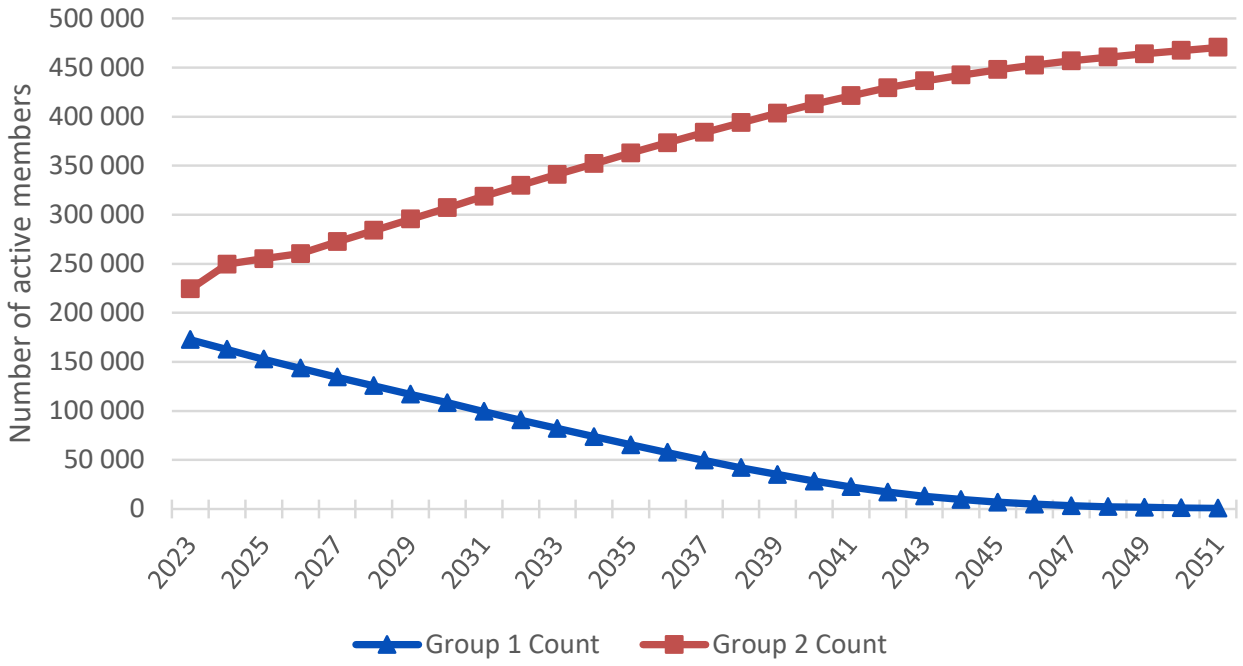
Chart 2 Pension Fund – Evolution of cash flows from plan year 2024 to plan year 2042 in $ millions



J.3 Evolution of group 1 and group 2 active membership

Due to the implementation of Division 23 of Part 4 of the *Jobs and Growth Act, 2012* (S.C. 2012, c. 31), members who entered the Plan prior to 1 January 2013 are considered Group 1 members and members who entered the Plan on or after 1 January 2013 are considered Group 2 members. The benefit costs of Group 2 members are generally less than that of Group 1 members. Chart 3 shows the evolution of membership between the two groups. By plan year 2063, we project that there will be no Group 1 active members left in the Plan.

Chart 3 Pension Fund – Evolution of Group 1 and Group 2 active membership from plan year 2023 to plan year 2051



Appendix K — Assessing and illustrating downside risks

This appendix presents the impacts on the liability, the funded status and the service costs of the Plan due to downside risks caused by potential adverse scenarios. These scenarios are:

- the yield of the 10-year-plus Government of Canada bonds decreases by 1% for the Account and the return of the fixed income investments decreases by 1% for the Fund,
- the future mortality improvement is faster than expected, and
- the climate change leads to stresses in the economy.

K.1 Decrease in yield for the Account and return for the Fund

Consistent with the Canadian Institute of Actuaries' Educational Note *Guidance on Selection and Disclosure of Plausible Adverse Scenarios*, the interest rate risk is illustrated by stress-testing the fixed income investments only. For the Superannuation Account, all assets are tracked using the 10-year-plus Government of Canada bonds, therefore all assets are considered fixed income investments. The interest rate risk is measured by lowering by 1% the best estimate yields of future 10-year Government of Canada bonds. For the Fund, the fixed income investments are the fixed income securities and the credit assets. Based on the Fund asset mix, a decrease of 1% in the return of the fixed income investments results in a decrease of 0.4% in the return of the Fund. The resulting liability, the funded status and the service costs, where applicable, for the Account and the Fund are shown in Table 66.

The interest rate risk stress test results in the actuarial liability increasing by $3,430 millions for the Account and by $8,964 millions for the Fund relative to the best estimate. The Account's actuarial shortfall increases while the Fund's funded status remains in surplus. The Fund's service cost for plan year 2025 increased by $603 millions, which is a 9.2% increase from the best-estimate.

Table 66 Sensitivity to interest rate risk

	As at 31 March 2023			Plan year 2025
Scenario	Actuarial value of assets ($ millions)	Actuarial liability ($ millions)	Funded ratio (%)	Total current service cost ($ millions)
Account: Base	91,353	97,403	n/a	n/a
Account: 1% decrease in future Government of Canada 10-year-plus yields	91,353	100,833	n/a	n/a
Fund: Base	169,178	137,172	123.3	6,569
Fund: 1% decrease in return on fixed income investments	169,178	146,136	115.8	7,172

K.2 Future mortality improvement higher than expected

This valuation assumes that the current mortality rates applicable to the members of PSPP will improve over time in line with the mortality improvement assumption contained in the 31st Actuarial Report on the Canada Pension Plan. The improvement factors are assumed to reach the ultimate rates in plan year 2040. However, if the improvement factors were underestimated, the future mortality would be lower

than expected which in turn poses downside risk to the funded status of the Plan.

The following table measures the effect on the life expectancy when mortality is assumed to improve at a faster pace than under the best-estimate scenario with the ultimate mortality improvement rates being doubled compared to their best-estimate values. The cohort life expectancy of a member aged 65 in 2023, and for a member aged 65 in 2039 are presented in the table below.

Table 67 Sensitivity of cohort life expectancy to variations in mortality improvement rates

	Age 65 life expectancy as at 31 March 2023		Age 65 life expectancy as at 31 March 2039	
Mortality improvement rates	Male	Female	Male	Female
Current basis	22.5	24.1	23.4	24.9
Ultimate improvement rates are doubled	23.1	24.8	24.8	26.4

Table 68 presents the impacts on the liability, the funded status, and the service costs of the Plan if the ultimate improvement factors were to be doubled compared to their best-estimate value. The best-estimate mortality improvement assumption is described in Table 59 of Appendix G.

Table 68 Sensitivity of financial results to variations to the ultimate mortality improvement rates

	Current service cost as a percentage of pensionable payroll		Superannuation Account as at 31 March 2023		Pension Fund as at 31 March 2023		
	Plan year 2025	Effect	Actuarial liability (in $ millions)	Effect (in $ millions)	Actuarial liability (in $ millions)	Effect (in $ millions)	Funded ratio (%)
Current basis	18.33	None	97,403	None	137,172	None	123.3
Ultimate improvement rates are doubled	18.82	0.49	99,016	1,613	139,716	2,544	121.1

K.3 Impact from climate changes

K.3.1 Context

There is general consensus that climate change may have an overall negative impact on society and the economy worldwide[20]. Given the magnitude of the potential socio-economic impacts, climate change may also have an impact on the Plan. The demographic, economic and investment environments can all be affected by climate change in the future. However, there is a lot of uncertainty on the direction and magnitude of these potential impacts, and the risk is constantly evolving.

[20] Based on the World Economic Forum's Global Risk Report 2022, five of the top ten most severe global risks over the next ten years are related to climate change. (The Global Risks Report 2022, 17th Edition – Insight report (weforum.org))

In view of the high level of uncertainty, the current best practice is to conduct scenario analysis rather than incorporate future climate policy and technology impacts into the best-estimate assumptions. Through the analysis of scenarios that are intentionally adverse, this section focuses on assessing the downside risk of climate change only. The section is not meant to represent forecasts or predictions.

K.3.2 Illustrative scenarios

After reviewing various published articles and research papers on climate change scenario analysis, three scenarios with different pathways of Canadian GDP growth rates relative to a baseline scenario are selected to assess the impact on the Plan.

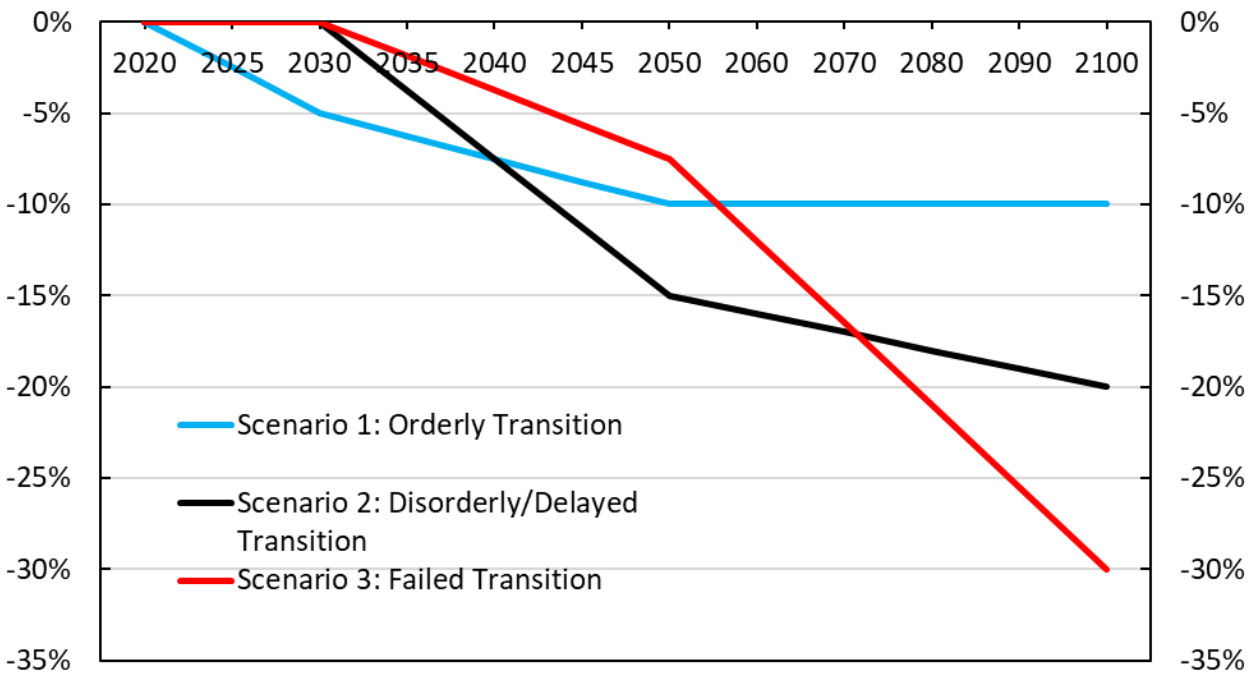
Scenario 1 can be classified in the 'orderly transition' category of scenarios. It assumes successful climate policies are introduced early. Canadian GDP growth rates are lower relative to the baseline scenario mainly caused by the disruption in the economy from implementation of climate change policies. The cumulative difference in GDP projections relative to the baseline scenario grows to -10% by 2050, then stays constant until 2100.

Scenario 2 can be classified in the 'disorderly / delayed transition' category of scenarios. It assumes that climate change policies only start in 2030. There is no impact on GDP relative to the baseline scenario until 2030, but late action leads to a stronger impact than scenario 1 after 2030. The cumulative difference relative to the baseline scenario is 0% by 2030, -15% by 2050 and -20% by 2100.

Scenario 3 can be classified in the 'failed transition' category of scenarios. It assumes that no further climate change policies are implemented. The cumulative difference relative to the baseline scenario is 0% by 2030, -8% by 2050 and -30% by 2100.

Chart 4 shows the difference in Canadian GDP growth rates relative to the baseline scenario for each scenario.

Chart 4 Climate scenarios – Cumulative Canadian GDP impact relative to baseline scenario from 2020 to 2100



K.3.3 Methodology

The three scenarios are translated into potential impacts on the Plan, using the following simplified approach:

- Changes in Canadian GDP growth are translated one-for-one into changes in the increase in the YMPE and MPE assumption.
- Changes in Canadian GDP growth are translated 50% into changes in the increase in average pensionable earnings.
- Changes in global GDP growth are also incorporated in the assumed investment returns through the growth in earnings component which is proxied by changes in Canadian GDP growth per capita. The growth in earnings is used to develop the assumption on rates of return on public equities, private equities, and real assets. These three asset classes are ultimately expected to represent about 68% of the Pension Fund. Table 69 shows the assumed average annual rate of return for each scenario for the 5, 10 and 20-year periods.

Table 69 Climate change scenario – Average nominal annual rate of return on assets in respect of the pension fund (%)

	Plan year		
Scenario	2024 to 2028	2024 to 2033	2024 to 2043
Baseline: best-estimate	6.1	6.1	6.0
Scenario 1: Orderly transition	6.0	6.1	6.0
Scenario 2: Disorderly / Delayed transition	5.9	5.9	5.8
Scenario 3: Failed transition	5.8	5.8	5.7

This simplified model allows for an initial assessment of climate change risk on the Plan.

K.3.4 Results

The impact on the Plan for each scenario is shown in the following table. It is important to note that the hypothetical scenarios are meant to illustrate downside risks only and are not meant to be forecasts or predictions.

Table 70 Climate change scenario – Pension fund status as at 31 March 2023

Scenario	Actuarial value of assets ($ millions)	Actuarial liability ($ millions)	Funded ratio (%)	Total current service cost for plan year 2025 ($ millions)
Baseline: best-estimate	169,178	137,172	123.3	6,569
Scenario 1: Orderly transition	169,178	137,937	122.6	6,594
Scenario 2: Disorderly / Delayed transition	169,178	142,309	118.9	6,867
Scenario 3: Failed transition	169,178	145,259	116.5	7,117

Appendix L — Uncertainty of future investment returns

L.1 Introduction

The projected financial status of the Pension Fund depends on many demographic and economic factors, including new contributors, average earnings, inflation, level of interest rates and investment returns. The projected long-term financial status of the Pension Fund is based on best-estimate assumptions. The objective of this section is to present a range of outcomes resulting from various alternative investment returns scenarios. The alternatives presented illustrate the sensitivity of the long-term projected financial position of the Pension Fund to changes in the future economic outlook. In this appendix, any references to assets, liabilities, surplus/(deficit), annual special payments and service cost are related to those of the Pension Fund.

Section L.2 illustrates how investment experience may affect the funding status of the Pension Fund over time. The impact of financial market tail events on the financial status of the Pension Fund is explored in Section L.3, where a severe one-time financial shock is applied to the best-estimate portfolio with the purpose of quantifying the impact on the funded ratio over the short-term horizon.

L.2 Range of potential funded ratios due to investment volatility and inflation modelling

Chart 5 illustrates a range of funded ratios (actuarial value of assets over actuarial liabilities) that could be expected under the best-estimate portfolio. It takes into account that actuarial valuation would occur every three years starting in 2023, that deficits are covered by additional government contributions, and that legislation under section 44.4 (1) of the PSSA is applied in case of non-permitted surplus (surplus in excess of 25% of liabilities).

As shown in Chart 5, the median expected funded ratio is relatively flat over the projection period and the range of potential outcomes widens with time.

Chart 5 Pension Fund – Range of potential funded ratio for the best-estimate portfolio from plan year 2023 to plan year 2044

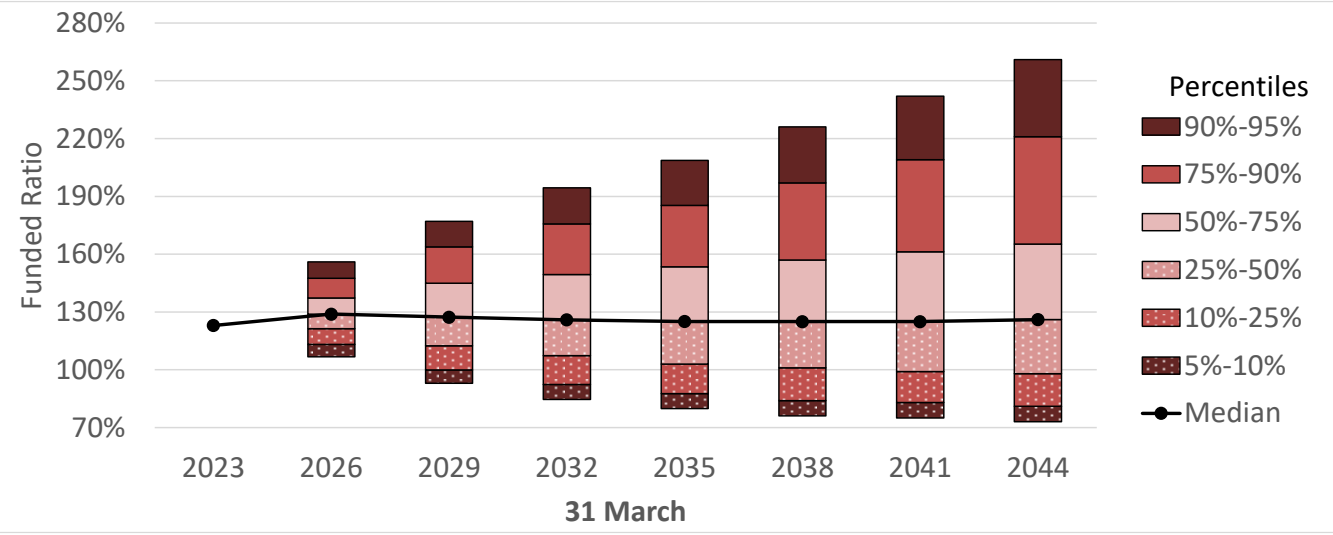
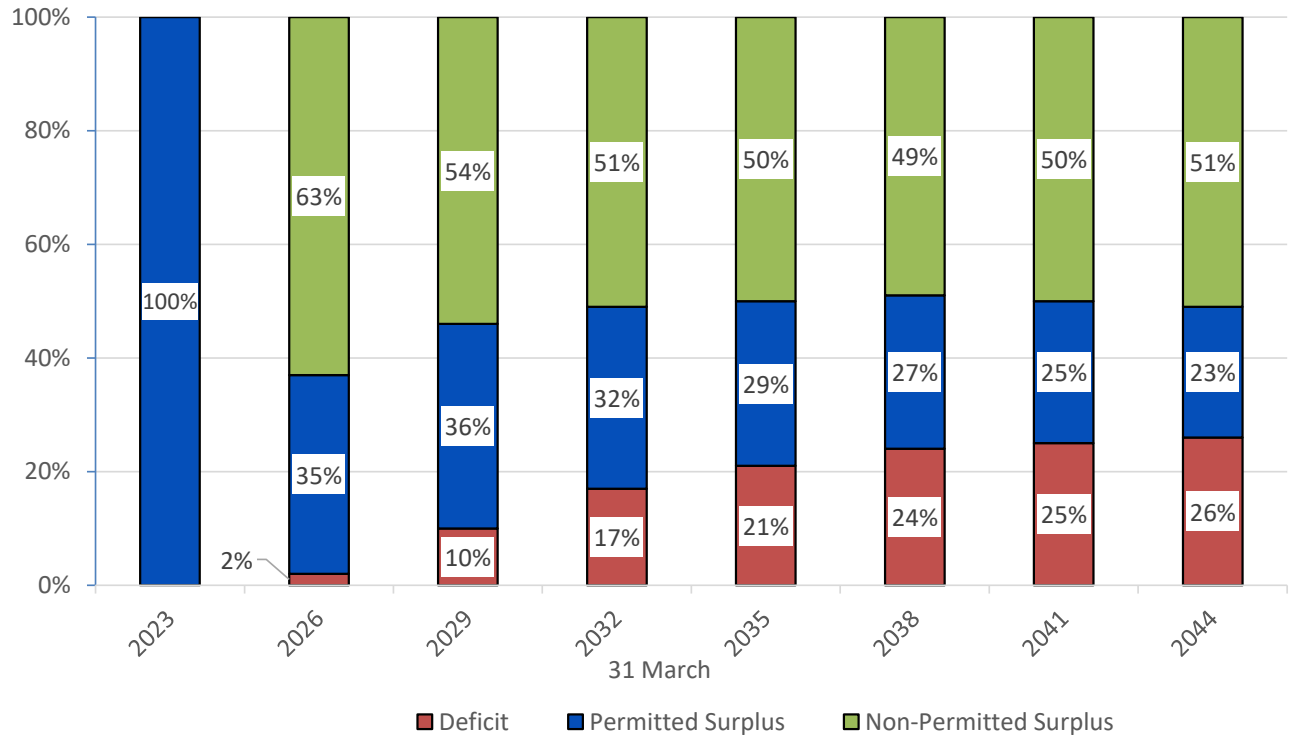


Chart 6 illustrates the probabilities associated with three possible funded statuses over the next 20 years: deficit, surplus less than 25% of liabilities, and non-permitted surplus.

Chart 6 Pension Fund – Likelihood of deficit, permitted and non-permitted surplus due to investment volatility and inflation modelling from plan year 2023 to plan year 2044



The likelihood of the permitted surplus is determined as 100% minus probability of deficit minus probability of non-permitted surplus.

The charts of this section reflect the actual fund return up to 31 March 2023.

L.3 Financial market tail events

This section focuses on the inherent volatility in PSP Investments' portfolio and the extreme outcomes that could result. During plan year 2009, the nominal return on Plan assets was negative 22.7% due to the economic slowdown. Such an event could be characterized as low probability (also referred to as a "tail event"). However, when these events do occur, the impact on the funded ratio may be significant. This section analyzes the impacts that tail-event returns would have on the Plan's funded ratio and the projected surplus/(deficit) as at 31 March 2026 (the expected date of the next scheduled statutory actuarial review).

To illustrate this, returns other than the best-estimate are assumed to occur in plan year 2024 followed

by the best-estimate returns for plan years 2025 and 2026.

The returns are assumed to follow a normal distribution. Two percentiles were selected to analyze: 10th and 2nd percentiles. The left tail event is the occurrence of a nominal return such that the probability of earning that return or less is equal to 10% (or 2%). The right tail event is the occurrence of a nominal return such that the probability of earning that return or more is equal to 10% (or 2%).

Extreme events occurring during the intervaluation period can result in the plan either requiring a special payment when there is a severe economic downturn or exceeding the non-permitted surplus threshold when market conditions are extremely favorable. Table 71 shows the impact on the financial position on the Pension Fund of such potential isolated tail-events. The table also shows that the impact of an isolated tail-event is dampened over time when investment conditions revert to the best-estimate scenario. Furthermore, the use of the actuarial value of assets mitigate the funding risk caused by extreme returns.

Table 71 Financial positions at tail-events of best-estimate portfolio as at 31 March 2026

	Nominal return at plan year 2024	Average nominal return from plan year 2024 to 2026	As at 31 March 2026				
				($ millions)			
			Funded ratio	Actuarial value of assets	Actuarial Liability	Surplus or deficit	Annual special payment
Current basis	5.8%	6.0%	129%	218,733	169,272	49,461	0
Left tail event on investment returns with a 2% probability	(14.5%)	(1.3%)	114%	192,297	169,272	23,025	0
Left tail event on investment returns with a 10% probability	(7.6%)	1.3%	119%	201,342	169,272	32,070	0
Right tail event on investment returns with a 10% probability	19.8%	10.5%	140%	236,870	169,272	67,598	0
Right tail event on investment returns with a 2% probability	30.0%	13.5%	148%	250,108	169,272	80,836	0

Appendix M — Detailed information on membership data

In this appendix, the 'Age' and 'Service' nomenclature refers to completed years calculated at the beginning of the plan year, while pensionable earnings are defined in Appendix A.4.2.

Table 72 Male contributors (Group 1 - Main group)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	0	0	0	0	0	0	0	0	0
	Earnings	$0	$0	$0	$0	$0	$0	$0	$0	$0
25 to 29	Count	0	3	9	0	0	0	0	0	12
	Earnings	$0	$80,500	$106,100	$0	$0	$0	$0	$0	$99,700
30 to 34	Count	12	64	734	26	0	0	0	0	836
	Earnings	$72,500	$87,500	$103,900	$102,700	$0	$0	$0	$0	$102,200
35 to 39	Count	12	114	4,157	1,659	20	0	0	0	5,962
	Earnings	$71,900	$94,800	$106,400	$110,400	$119,400	$0	$0	$0	$107,200
40 to 44	Count	20	132	4,135	5,243	1,636	4	0	0	11,170
	Earnings	$83,500	$90,400	$104,900	$113,400	$118,700	$119,900	$0	$0	$110,700
45 to 49	Count	13	100	2,988	4,357	5,235	623	12	0	13,328
	Earnings	$118,500	$90,000	$103,700	$111,800	$120,400	$125,100	$142,300	$0	$113,900
50 to 54	Count	15	100	2,326	3,194	4,571	2,379	843	8	13,436
	Earnings	$95,000	$91,300	$103,700	$108,700	$117,800	$124,900	$120,600	$127,900	$114,400
55 to 59	Count	13	247	2,010	2,396	3,232	1,873	2,018	192	11,981
	Earnings	$99,500	$98,800	$100,000	$104,300	$112,700	$119,800	$118,900	$112,500	$110,700
60 to 64	Count	77	285	1,200	1,370	1,836	922	1,056	421	7,167
	Earnings	$107,100	$96,200	$97,700	$100,100	$108,900	$113,300	$113,300	$109,800	$106,100
65 and over	Count	101	72	462	508	681	313	426	369	2,932
	Earnings	$102,500	$92,800	$94,300	$97,200	$108,300	$111,200	$112,400	$111,900	$105,000
All ages	Count	263	1,117	18,021	18,753	17,211	6,114	4,355	990	66,824
	Earnings	$99,800	$94,200	$103,600	$109,400	$116,400	$120,900	$117,300	$111,200	$110,900

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 73 Male contributors (Group 1 - Main group) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	50.9 years	49.6 years
Average pensionable service:	19.3 years	17.5 years
Total PBDA[a] indexed reduction to life annuity:	$17,006,400	$15,025,300
Total PBDA[a] indexed reduction to CPP coordination[b]:	$3,034,500	$2,844,200

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 74 Female contributors (Group 1 - Main group)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	0	0	0	0	0	0	0	0	0
	Earnings	$0	$0	$0	$0	$0	$0	$0	$0	$0
25 to 29	Count	0	6	3	0	0	0	0	0	9
	Earnings	$0	$85,700	$98,600	$0	$0	$0	$0	$0	$90,000
30 to 34	Count	17	113	994	23	0	0	0	0	1,147
	Earnings	$85,200	$87,400	$98,700	$91,400	$0	$0	$0	$0	$97,300
35 to 39	Count	27	250	5,668	2,515	14	0	0	0	8,474
	Earnings	$83,200	$89,900	$101,100	$104,900	$104,800	$0	$0	$0	$101,800
40 to 44	Count	27	272	5,490	7,821	2,375	6	0	0	15,991
	Earnings	$85,300	$87,900	$99,500	$107,100	$110,800	$99,600	$0	$0	$104,700
45 to 49	Count	29	197	3,959	6,307	7,533	760	10	0	18,795
	Earnings	$83,300	$83,100	$98,100	$106,500	$113,900	$116,800	$93,100	$0	$107,800
50 to 54	Count	22	186	2,812	4,328	5,960	2,918	1,481	38	17,745
	Earnings	$89,500	$81,100	$94,500	$101,100	$110,800	$119,000	$109,100	$102,700	$106,700
55 to 59	Count	15	167	2,155	3,271	4,070	2,230	2,161	264	14,333
	Earnings	$77,500	$77,100	$88,700	$93,100	$101,900	$108,200	$109,700	$96,200	$99,600
60 to 64	Count	13	111	1,175	1,746	2,050	910	951	386	7,342
	Earnings	$66,400	$75,300	$83,400	$87,800	$93,700	$98,000	$101,000	$96,800	$92,000
65 and over	Count	10	62	412	555	679	305	312	264	2,599
	Earnings	$87,400	$75,100	$80,900	$85,700	$92,100	$97,500	$95,700	$92,200	$89,600
All ages	Count	160	1,364	22,668	26,566	22,681	7,129	4,915	952	86,435
	Earnings	$83,000	$83,700	$96,800	$102,300	$108,100	$111,800	$106,900	$95,600	$103,000

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 75 Female contributors (Group 1 - Main group) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	50.0 years	48.6 years
Average pensionable service:	19.2 years	17.3 years
Total PBDA[a] indexed reduction to life annuity:	$7,100,800	$5,673,000
Total PBDA[a] indexed reduction to CPP coordination[b]:	$1,387,300	$1,182,700

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 76 Male contributors (Group 1 - Operational group)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	0	0	0	0	0	0	0	0	0
	Earnings	$0	$0	$0	$0	$0	$0	$0	$0	$0
25 to 29	Count	0	0	0	0	0	0	0	0	0
	Earnings	$0	$0	$0	$0	$0	$0	$0	$0	$0
30 to 34	Count	0	0	93	2	0	0	0	0	95
	Earnings	$0	$0	$93,400	$90,700	$0	$0	$0	$0	$93,300
35 to 39	Count	0	2	457	81	0	0	0	0	540
	Earnings	$0	$87,600	$94,600	$154,500	$0	$0	$0	$0	$103,500
40 to 44	Count	0	3	421	313	92	0	0	0	829
	Earnings	$0	$84,600	$92,700	$191,400	$197,900	$0	$0	$0	$141,600
45 to 49	Count	1	4	272	304	470	39	0	0	1,090
	Earnings	$70,200	$87,600	$92,200	$95,500	$209,900	$232,000	$0	$0	$148,800
50 to 54	Count	0	1	215	198	474	235	36	0	1,159
	Earnings	$0	$75,300	$180,600	$94,100	$202,600	$231,200	$210,000	$0	$185,900
55 to 59	Count	1	4	143	83	163	135	82	8	619
	Earnings	$88,500	$94,300	$89,000	$92,800	$95,800	$211,600	$226,900	$114,400	$136,700
60 to 64	Count	4	7	68	35	51	36	42	5	248
	Earnings	$96,400	$73,200	$88,500	$87,000	$93,900	$199,900	$233,700	$101,400	$130,100
65 and over	Count	3	0	12	20	14	4	6	3	62
	Earnings	$99,400	$0	$88,100	$88,500	$90,800	$100,200	$217,200	$93,900	$102,900
All ages	Count	9	21	1,681	1,036	1,264	449	166	16	4,642
	Earnings	$93,600	$83,000	$103,900	$128,200	$185,600	$221,700	$224,600	$106,500	$147,200

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 77 Male contributors (Group 1 - Operational group) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	48.8 years	46.9 years
Average pensionable service:	18.6 years	16.4 years
Total PBDA[a] indexed reduction to life annuity:	$323,400	$349,200
Total PBDA[a] indexed reduction to CPP coordination[b]:	$75,700	$84,800

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 78 Female contributors (Group 1 - Operational group)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	0	0	0	0	0	0	0	0	0
	Earnings	$0	$0	$0	$0	$0	$0	$0	$0	$0
25 to 29	Count	0	0	0	0	0	0	0	0	0
	Earnings	$0	$0	$0	$0	$0	$0	$0	$0	$0
30 to 34	Count	0	6	69	1	0	0	0	0	76
	Earnings	$0	$87,700	$90,500	$98,400	$0	$0	$0	$0	$90,400
35 to 39	Count	0	6	384	66	1	0	0	0	457
	Earnings	$0	$101,800	$96,600	$93,900	$99,600	$0	$0	$0	$96,300
40 to 44	Count	0	7	344	336	78	1	0	0	766
	Earnings	$0	$88,600	$95,600	$99,600	$191,900	$103,800	$0	$0	$107,100
45 to 49	Count	0	5	198	288	393	60	0	0	944
	Earnings	$0	$81,500	$91,500	$204,900	$240,100	$216,400	$0	$0	$195,900
50 to 54	Count	0	5	162	135	249	218	34	0	803
	Earnings	$0	$76,600	$88,500	$185,100	$202,900	$220,100	$91,000	$0	$176,000
55 to 59	Count	1	8	116	78	100	105	57	5	470
	Earnings	$72,900	$85,000	$88,300	$87,500	$207,700	$231,200	$206,900	$81,600	$159,700
60 to 64	Count	8	2	42	34	23	22	11	6	148
	Earnings	$91,900	$81,700	$82,100	$82,300	$84,900	$163,200	$224,300	$157,900	$108,800
65 and over	Count	0	1	18	6	5	0	7	4	41
	Earnings	$0	$60,300	$81,800	$74,400	$70,900	$0	$85,200	$81,500	$79,400
All ages	Count	9	40	1,333	944	849	406	109	15	3,705
	Earnings	$89,800	$86,300	$92,900	$141,800	$215,600	$219,000	$164,700	$112,100	$149,400

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 79 Female contributors (Group 1 - Operational group) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	48.1 years	46.3 years
Average pensionable service:	18.3 years	16.2 years
Total PBDA[a] indexed reduction to life annuity:	$20,100	$16,500
Total PBDA[a] indexed reduction to CPP coordination[b]:	$4,800	$4,900

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 80 Male and female contributors (Group 1 - Leave without pay and non-active contributors)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	0	0	0	0	0	0	0	0	0
	Earnings	$0	$0	$0	$0	$0	$0	$0	$0	$0
25 to 29	Count	0	1	0	0	0	0	0	0	1
	Earnings	$0	$84,700	$0	$0	$0	$0	$0	$0	$84,700
30 to 34	Count	8	75	229	5	0	0	0	0	317
	Earnings	$79,200	$79,200	$96,200	$84,900	$0	$0	$0	$0	$91,600
35 to 39	Count	15	259	1,229	240	3	0	0	0	1,746
	Earnings	$76,700	$84,500	$97,200	$98,900	$97,300	$0	$0	$0	$95,400
40 to 44	Count	45	233	1,106	676	132	0	0	0	2,192
	Earnings	$75,900	$79,300	$93,000	$101,100	$104,600	$0	$0	$0	$94,400
45 to 49	Count	31	183	676	651	428	38	0	0	2,007
	Earnings	$72,100	$79,700	$88,200	$99,400	$104,000	$111,300	$0	$0	$94,600
50 to 54	Count	31	167	490	514	476	194	82	0	1,954
	Earnings	$71,300	$75,600	$88,100	$94,700	$101,500	$111,800	$104,800	$0	$94,800
55 to 59	Count	30	128	425	415	444	198	85	4	1,729
	Earnings	$70,400	$76,500	$80,100	$89,400	$96,800	$99,400	$101,700	$125,800	$89,600
60 to 64	Count	39	128	269	219	178	104	62	12	1,011
	Earnings	$64,500	$71,700	$76,300	$82,800	$89,200	$92,200	$101,000	$85,400	$82,200
65 and over	Count	91	140	262	230	206	115	148	153	1,345
	Earnings	$84,800	$69,900	$79,400	$84,500	$87,300	$94,300	$97,100	$98,700	$86,300
All ages	Count	290	1,314	4,686	2,950	1,867	649	377	169	12,302
	Earnings	$75,800	$77,900	$90,200	$95,100	$98,400	$101,700	$100,400	$98,400	$92,000

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 81 Male and female contributors (Group 1 - Leave without pay and non-active contributors) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	50.2 years	48.1 years
Average pensionable service:	16.0 years	13.7 years
Total PBDA[a] indexed reduction to life annuity:	$484,600	$1,277,900
Total PBDA[a] indexed reduction to CPP coordination[b]:	$97,100	$47,400

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 82 Male contributors (Group 2 - Main group)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	5,512	46	0	0	0	0	0	0	5,558
	Earnings	$62,800	$89,700	$0	$0	$0	$0	$0	$0	$63,000
25 to 29	Count	13,452	2,052	4	0	0	0	0	0	15,508
	Earnings	$73,800	$88,100	$91,900	$0	$0	$0	$0	$0	$75,700
30 to 34	Count	11,257	5,930	207	8	0	0	0	0	17,402
	Earnings	$77,800	$92,900	$101,500	$109,800	$0	$0	$0	$0	$83,200
35 to 39	Count	8,399	4,989	481	60	11	0	0	0	13,940
	Earnings	$80,200	$93,900	$101,000	$96,100	$113,600	$0	$0	$0	$85,900
40 to 44	Count	6,676	3,546	370	136	37	1	0	0	10,766
	Earnings	$82,000	$94,800	$101,900	$108,600	$107,300	$99,800	$0	$0	$87,300
45 to 49	Count	4,964	2,569	252	116	56	3	0	0	7,960
	Earnings	$83,500	$96,000	$102,400	$102,700	$109,900	$110,000	$0	$0	$88,600
50 to 54	Count	3,903	2,152	204	68	50	19	1	0	6,397
	Earnings	$84,900	$95,700	$101,200	$113,500	$105,400	$110,200	$75,900	$0	$89,600
55 to 59	Count	2,989	1,629	141	45	26	26	13	2	4,871
	Earnings	$88,800	$95,700	$104,000	$105,200	$116,000	$122,700	$125,100	$182,600	$92,200
60 to 64	Count	1,686	915	68	28	10	7	3	1	2,718
	Earnings	$87,000	$95,300	$99,300	$127,500	$123,800	$131,400	$106,500	$102,600	$90,800
65 and over	Count	551	334	26	2	0	2	0	0	915
	Earnings	$87,000	$97,800	$102,600	$89,400	$0	$118,300	$0	$0	$91,500
All ages	Count	59,389	24,162	1,753	463	190	58	17	3	86,035
	Earnings	$78,100	$93,900	$101,700	$107,000	$110,000	$118,400	$118,900	$155,900	$83,300

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 83 Male contributors (Group 2 - Main group) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	38.6 years	37.9 years
Average pensionable service:	3.8 years	2.9 years
Total PBDA[a] indexed reduction to life annuity:	$47,900	$25,100
Total PBDA[a] indexed reduction to CPP coordination[b]:	$10,300	$5,600

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 84 Female contributors (Group 2 - Main group)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	7,806	18	0	0	0	0	0	0	7,824
	Earnings	$61,000	$77,500	$0	$0	$0	$0	$0	$0	$61,000
25 to 29	Count	19,194	2,903	1	0	0	0	0	0	22,098
	Earnings	$72,300	$85,900	$82,200	$0	$0	$0	$0	$0	$74,100
30 to 34	Count	15,276	7,681	280	1	0	0	0	0	23,238
	Earnings	$74,400	$89,400	$97,100	$137,300	$0	$0	$0	$0	$79,600
35 to 39	Count	11,902	5,883	590	33	1	0	0	0	18,409
	Earnings	$74,700	$89,300	$95,900	$94,700	$110,900	$0	$0	$0	$80,100
40 to 44	Count	9,994	4,528	501	160	20	1	0	0	15,204
	Earnings	$74,300	$87,600	$95,700	$98,800	$90,600	$78,100	$0	$0	$79,300
45 to 49	Count	7,227	3,391	325	131	63	4	0	0	11,141
	Earnings	$74,300	$86,100	$91,800	$101,700	$109,100	$102,500	$0	$0	$78,900
50 to 54	Count	5,164	2,643	253	94	72	14	8	1	8,249
	Earnings	$74,600	$84,200	$92,500	$102,000	$92,400	$100,700	$94,700	$97,600	$78,800
55 to 59	Count	3,305	1,836	223	60	36	21	14	1	5,496
	Earnings	$74,800	$81,400	$87,000	$89,200	$99,100	$115,100	$109,800	$94,800	$78,100
60 to 64	Count	1,604	1,011	106	46	20	5	2	2	2,796
	Earnings	$72,800	$79,200	$87,300	$86,500	$86,800	$72,100	$137,400	$69,700	$76,000
65 and over	Count	469	317	39	3	3	0	2	1	834
	Earnings	$73,800	$80,800	$78,200	$61,200	$95,800	$0	$66,900	$135,800	$76,700
All ages	Count	81,941	30,211	2,318	528	215	45	26	5	115,289
	Earnings	$72,700	$87,000	$93,500	$97,500	$97,900	$103,900	$104,000	$93,500	$77,000

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 85 Female contributors (Group 2 - Main group) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	38.0 years	37.0 years
Average pensionable service:	3.7 years	2.8 years
Total PBDA[a] indexed reduction to life annuity:	$55,000	$44,100
Total PBDA[a] indexed reduction to CPP coordination[b]:	$13,800	$7,200

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 86 Male contributors (Group 2 - Operational group)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	159	0	0	0	0	0	0	0	159
	Earnings	$73,300	$0	$0	$0	$0	$0	$0	$0	$73,300
25 to 29	Count	485	55	0	0	0	0	0	0	540
	Earnings	$77,800	$88,900	$0	$0	$0	$0	$0	$0	$79,000
30 to 34	Count	401	270	7	0	0	0	0	0	678
	Earnings	$80,100	$90,900	$95,800	$0	$0	$0	$0	$0	$84,500
35 to 39	Count	250	183	18	3	0	0	0	0	454
	Earnings	$80,200	$90,900	$89,900	$79,100	$0	$0	$0	$0	$84,900
40 to 44	Count	199	114	16	4	1	0	0	0	334
	Earnings	$78,500	$90,600	$90,000	$81,100	$78,600	$0	$0	$0	$83,200
45 to 49	Count	153	102	6	7	1	0	0	0	269
	Earnings	$78,100	$88,100	$88,900	$91,100	$78,700	$0	$0	$0	$82,500
50 to 54	Count	97	66	5	2	1	1	0	0	172
	Earnings	$78,500	$86,300	$83,100	$91,700	$89,200	$104,200	$0	$0	$82,000
55 to 59	Count	56	57	5	0	1	0	2	0	121
	Earnings	$78,600	$86,400	$77,200	$0	$121,500	$0	$94,900	$0	$82,900
60 to 64	Count	34	21	3	0	0	2	0	0	60
	Earnings	$79,900	$80,300	$85,100	$0	$0	$106,100	$0	$0	$81,200
65 and over	Count	12	13	0	0	0	0	0	0	25
	Earnings	$83,700	$75,300	$0	$0	$0	$0	$0	$0	$79,300
All ages	Count	1,846	881	60	16	4	3	2	0	2,812
	Earnings	$78,500	$89,300	$88,600	$86,400	$92,000	$105,400	$94,900	$0	$82,200

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 87 Male contributors (Group 2 - Operational group) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	37.6 years	36.9 years
Average pensionable service:	4.3 years	3.4 years
Total PBDA[a] indexed reduction to life annuity:	$0	$0
Total PBDA[a] indexed reduction to CPP coordination[b]:	$0	$0

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 88 Female contributors (Group 2 - Operational group)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	187	0	0	0	0	0	0	0	187
	Earnings	$69,900	$0	$0	$0	$0	$0	$0	$0	$69,900
25 to 29	Count	582	75	0	0	0	0	0	0	657
	Earnings	$78,600	$89,900	$0	$0	$0	$0	$0	$0	$79,900
30 to 34	Count	435	224	12	0	0	0	0	0	671
	Earnings	$79,600	$89,400	$96,300	$0	$0	$0	$0	$0	$83,200
35 to 39	Count	270	157	24	0	0	0	0	0	451
	Earnings	$76,400	$92,000	$95,200	$0	$0	$0	$0	$0	$82,900
40 to 44	Count	216	105	12	4	0	0	0	0	337
	Earnings	$75,400	$88,800	$89,100	$92,700	$0	$0	$0	$0	$80,300
45 to 49	Count	182	80	9	1	0	0	0	0	272
	Earnings	$76,100	$85,800	$90,200	$93,300	$0	$0	$0	$0	$79,500
50 to 54	Count	121	63	3	2	1	0	0	0	190
	Earnings	$72,000	$79,400	$90,500	$80,200	$67,800	$0	$0	$0	$74,800
55 to 59	Count	62	43	7	1	1	1	0	0	115
	Earnings	$70,100	$76,800	$83,400	$99,200	$108,200	$111,000	$0	$0	$74,400
60 to 64	Count	40	34	2	1	0	0	0	0	77
	Earnings	$63,800	$74,100	$73,200	$60,300	$0	$0	$0	$0	$68,500
65 and over	Count	9	3	0	0	0	0	0	0	12
	Earnings	$77,100	$63,600	$0	$0	$0	$0	$0	$0	$73,800
All ages	Count	2,104	784	69	9	2	1	0	0	2,969
	Earnings	$76,300	$87,300	$91,600	$87,100	$88,000	$111,000	$0	$0	$79,600

a. As defined in appendix A.4.2, earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 89 Female contributors (Group 2 - Operational group) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	37.2 years	36.0 years
Average pensionable service:	3.7 years	2.9 years
Total PBDA[a] indexed reduction to life annuity:	$0	$1,200
Total PBDA[a] indexed reduction to CPP coordination[b]:	$0	$300

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 90 Male and female contributors (Group 2 - Leave without pay and non-active contributors)
Member's count and average pensionable earnings per age and years of service as at 31 March 2023

		Number of years of service								
Age	Statistic	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 and above[a]	All years of service
Up to 24	Count	958	10	0	0	0	0	0	0	968
	Earnings	$55,000	$74,100	$0	$0	$0	$0	$0	$0	$55,200
25 to 29	Count	2,772	415	0	0	0	0	0	0	3,187
	Earnings	$68,800	$82,900	$0	$0	$0	$0	$0	$0	$70,600
30 to 34	Count	3,414	1,802	33	0	0	0	0	0	5,249
	Earnings	$73,100	$87,600	$96,100	$0	$0	$0	$0	$0	$78,300
35 to 39	Count	2,345	1,244	96	6	0	0	0	0	3,691
	Earnings	$74,400	$87,200	$93,900	$83,300	$0	$0	$0	$0	$79,300
40 to 44	Count	1,217	567	41	10	2	0	0	0	1,837
	Earnings	$72,400	$84,900	$87,700	$93,200	$82,600	$0	$0	$0	$76,700
45 to 49	Count	814	301	26	18	6	0	0	0	1,165
	Earnings	$70,300	$79,100	$98,300	$89,700	$86,100	$0	$0	$0	$73,600
50 to 54	Count	669	245	23	10	1	1	0	0	949
	Earnings	$68,900	$79,300	$99,500	$108,000	$61,400	$71,600	$0	$0	$72,700
55 to 59	Count	499	177	12	7	5	3	1	0	704
	Earnings	$69,000	$74,300	$80,500	$126,500	$103,700	$154,000	$158,500	$0	$71,800
60 to 64	Count	340	133	14	1	1	0	0	0	489
	Earnings	$69,000	$70,400	$84,900	$135,200	$86,300	$0	$0	$0	$70,000
65 and over	Count	286	74	2	0	0	0	0	0	362
	Earnings	$70,000	$82,300	$60,300	$0	$0	$0	$0	$0	$72,500
All ages	Count	13,314	4,968	247	52	15	4	1	0	18,601
	Earnings	$70,400	$84,800	$92,700	$99,000	$89,900	$133,400	$158,500	$0	$74,700

a. As defined in appendix A.4.1. Earnings of contributors with 35 years of service or more are shown but are not part of pensionable payroll.

Table 91 Male and female contributors (Group 2 - Leave without pay and non-active contributors) - Summary

	As at 31 March 2023	As at 31 March 2020
Average age:	39.0 years	38.5 years
Average pensionable service:	3.9 years	3.1 years
Total PBDA[a] indexed reduction to life annuity:	$3,800	$25,400
Total PBDA[a] indexed reduction to CPP coordination[b]:	$700	$5,400

a. As defined in appendix A.4.18, upon the breakdown of a spousal union, the member's benefits are reduced upon payment.
b. As defined in appendix A.4.7.

Table 92 Male retired pensioners
Number of retired pensioners and average annual pension in pay[a] as at 31 March 2023

	PSSA		RCA No. 1		RCA No. 2	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Up to 24	0	N/A	0	N/A	0	N/A
25 to 29	0	N/A	0	N/A	0	N/A
30 to 34	0	N/A	0	N/A	0	N/A
35 to 39	0	N/A	0	N/A	0	N/A
40 to 44	0	N/A	0	N/A	0	N/A
45 to 49	6	29,700	0	N/A	0	N/A
50 to 54	258	40,000	6	10,400	0	N/A
55 to 59	4,731	59,000	370	8,800	0	N/A
60 to 64	16,444	50,600	1,075	8,500	0	N/A
65 to 69	22,518	41,900	1,403	7,700	0	N/A
70 to 74	23,926	42,900	1,157	8,000	206	14,100
75 to 79	20,788	37,200	1,003	6,400	3,813	11,700
80 to 84	13,782	36,300	464	4,400	1,069	7,300
85 to 89	8,023	35,400	130	2,900	4	2,700
90 to 94	3,540	33,900	15	1,400	0	N/A
95 to 99	879	34,400	0	N/A	0	N/A
100 to 104	117	34,300	0	N/A	0	N/A
105 and over	4	13,500	0	N/A	0	N/A
All ages	115,016	41,800	5,623	7,400	5,092	10,900

a. Includes immediate annuity, annual allowance adjustments, PBDA reductions and CPP/QPP coordination in effect at the valuation date.

Table 93 Male retired pensioners - Summary

	31 March 2023	31 March 2020
Average age	73.4 years	72.9 years
Average age at termination	58.1 years	57.9 years
Average age at entitlement	58.9 years	58.7 years
Total annual pensions payable from		
PS Superannuation Account	$3,050 million	$3,006 million
PS Pension Fund	$1,760 million	$1,260 million
RCA No. 1 Account	$41 million	$32 million
RCA No. 2 Account	$55 million	$55 million

Table 94 Female retired pensioners
Number of retired pensioners and average annual pension in pay[a] as at 31 March 2023

	PSSA		RCA No. 1		RCA No. 2	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Up to 24	0	N/A	0	N/A	0	N/A
25 to 29	0	N/A	0	N/A	0	N/A
30 to 34	0	N/A	0	N/A	0	N/A
35 to 39	0	N/A	0	N/A	0	N/A
40 to 44	0	N/A	0	N/A	0	N/A
45 to 49	11	40,100	0	N/A	0	N/A
50 to 54	344	37,100	8	9,900	0	N/A
55 to 59	6,949	53,900	358	8,100	0	N/A
60 to 64	22,267	44,200	1,017	6,300	0	N/A
65 to 69	27,174	33,300	1,265	5,500	0	N/A
70 to 74	22,565	30,900	521	7,900	155	12,100
75 to 79	14,713	22,900	246	7,100	2,609	9,900
80 to 84	8,283	19,100	75	5,800	710	6,500
85 to 89	4,919	17,200	9	1,800	5	2,000
90 to 94	2,218	16,200	1	1,600	0	N/A
95 to 99	834	16,000	0	N/A	0	N/A
100 to 104	155	17,600	0	N/A	0	N/A
105 and over	13	15,800	0	N/A	0	N/A
All ages	110,445	32,600	3,500	6,500	3,479	9,300

a. Includes immediate annuity, annual allowance adjustments, PBDA reductions and CPP/QPP coordination in effect at the valuation date.

Table 95 Female retired pensioners - Summary

	31 March 2023	31 March 2020
Average age	70.9 years	70.2 years
Average age at termination	58.0 years	57.8 years
Average age at entitlement	58.9 years	58.6 years
Total annual pensions payable from		
PS Superannuation Account	$1,850 million	$1,704 million
PS Pension Fund	$1,750 million	$1,231 million
RCA No. 1 Account	$23 million	$16 million
RCA No. 2 Account	$32 million	$31 million

Table 96 Male disabled pensioners
Number of disabled pensioners and average annual pension in pay[a] as at 31 March 2023

	PSSA		RCA No. 1	
Age	Number	Pension ($)	Number	Pension ($)
Up to 24	0	N/A	0	N/A
25 to 29	1	6,100	0	N/A
30 to 34	12	9,300	0	N/A
35 to 39	36	10,800	0	N/A
40 to 44	90	15,000	0	N/A
45 to 49	220	18,200	0	N/A
50 to 54	396	21,800	1	123
55 to 59	768	23,900	7	7,330
60 to 64	904	24,200	11	6,996
65 to 69	894	22,400	9	1,327
70 to 74	824	21,700	3	227
75 to 79	583	21,200	0	N/A
80 to 84	398	20,200	0	N/A
85 to 89	249	23,100	0	N/A
90 to 94	83	19,600	0	N/A
95 to 99	17	19,900	0	N/A
100 to 104	4	14,900	0	N/A
105 and over	0	N/A	0	N/A
All ages	5,479	22,000	31	4,549

a. Includes immediate annuity, PBDA reductions and CPP/QPP coordination in effect at the valuation date.

Table 97 Male disabled pensioners - Summary

	31 March 2023	31 March 2020
Average age	67.0 years	67.1 years
Average age at disability	50.5 years	50.6 years
Total annual pensions payable from		
PS Superannuation Account	$67 million	$72 million
PS Pension Fund	$54 million	$39 million
RCA No. 1 Account	$141,000	$124,000

Table 98 Female disabled pensioners
Number of disabled pensioners and average annual pension in pay[a] as at 31 March 2023

	PSSA		RCA No. 1	
Age	Number	Pension ($)	Number	Pension ($)
Up to 24	0	N/A	0	N/A
25 to 29	0	N/A	0	N/A
30 to 34	15	8,100	0	N/A
35 to 39	100	11,400	0	N/A
40 to 44	328	14,200	0	N/A
45 to 49	637	17,300	0	N/A
50 to 54	1,006	20,500	3	604
55 to 59	1,641	23,400	10	1,927
60 to 64	2,171	23,300	23	6,351
65 to 69	1,793	19,900	8	4,174
70 to 74	1,208	18,600	3	2,159
75 to 79	679	15,000	1	1,257
80 to 84	463	13,900	0	N/A
85 to 89	281	13,600	0	N/A
90 to 94	94	12,700	0	N/A
95 to 99	18	11,400	0	N/A
100 to 104	9	15,400	0	N/A
105 and over	0	N/A	0	N/A
All ages	10,443	19,800	48	4,339

a. Includes immediate annuity, PBDA reductions and CPP/QPP coordination in effect at the valuation date.

Table 99 Female disabled pensioners - Summary

	31 March 2023	31 March 2020
Average age	63.9 years	63.4 years
Average age at disability	49.8 years	49.9 years
Total annual pensions payable from		
PS Superannuation Account	$91 million	$89 million
PS Pension Fund	$116 million	$82 million
RCA No. 1 Account	$208,000	$175,000

Table 100 Male deferred pensioners

Number of deferred pensioners and average annual deferred pension[a] as at 31 March 2023

	PSSA		RCA No. 1	
Age	Number	Pension ($)	Number	Pension ($)
Up to 24	72	1,700	0	N/A
25 to 29	557	2,900	0	N/A
30 to 34	1,124	4,400	0	N/A
35 to 39	1,865	7,600	0	N/A
40 to 44	2,386	10,700	5	2,700
45 to 49	2,552	13,200	18	6,000
50 to 54	2,610	16,100	43	8,300
55 to 59	2,750	18,400	69	7,500
60 to 64	218	7,700	12	6,000
65 to 69	7	22,900	0	N/A
70 to 74	0	N/A	0	N/A
75 to 79	1	10,700	0	N/A
80 to 84	0	N/A	0	N/A
85 to 89	0	N/A	0	N/A
90 to 94	0	N/A	0	N/A
95 to 99	0	N/A	0	N/A
100 to 104	0	N/A	0	N/A
105 and over	0	N/A	0	N/A
All ages	14,142	12,400	147	7,300

a. Includes PBDA reductions and CPP/QPP coordination that would be in effect at the valuation date.

Table 101 Male deferred pensioners - Summary

	31 March 2023	31 March 2020
Average age	46.4 years	46.4 years
Average age at termination	38.4 years	39.0 years
Average age at entitlement[a]	61.1 years	60.5 years
Total annual pensions payable from		
PS Superannuation Account	$14 million	$20 million
PS Pension Fund	$161 million	$137 million
RCA No. 1 Account	$1.1 million	$940,000

a. Age at which a deferred pensioner is entitled to receive its pension with no reduction. Age 60 for group 1 and age 65 for group 2.

Table 102 Female deferred pensioners

Number of deferred pensioners and average annual deferred pension[a] as at 31 March 2023

	PSSA		RCA No. 1	
Age	Number	Pension ($)	Number	Pension ($)
Up to 24	110	1,600	0	N/A
25 to 29	720	2,800	0	N/A
30 to 34	1,321	4,300	0	N/A
35 to 39	2,222	6,800	1	3,200
40 to 44	3,072	9,600	5	4,100
45 to 49	3,156	12,000	9	4,300
50 to 54	3,176	15,000	31	6,300
55 to 59	3,034	15,600	45	8,600
60 to 64	232	5,000	8	6,000
65 to 69	4	3,300	0	N/A
70 to 74	0	N/A	0	N/A
75 to 79	0	N/A	0	N/A
80 to 84	0	N/A	0	N/A
85 to 89	0	N/A	0	N/A
90 to 94	0	N/A	0	N/A
95 to 99	0	N/A	0	N/A
100 to 104	0	N/A	0	N/A
105 and over	0	N/A	0	N/A
All ages	17,047	11,000	99	7,000

a. Includes PBDA reductions and CPP/QPP coordination that would be in effect at the valuation date.

Table 103 Female deferred pensioners - Summary

	31 March 2023	31 March 2020
Average age	46.1 years	46.1 years
Average age at termination	38.0 years	38.6 years
Average age at entitlement[a]	61.1 years	60.5 years
Total annual pensions payable from		
PS Superannuation Account	$15 million	$22 million
PS Pension Fund	$170 million	$141 million
RCA No. 1 Account	$690,000	$500,000

a. Age at which a deferred pensioner is entitled to receive its pension with no reduction. Age 60 for group 1 and age 65 for group 2.

Table 104 Surviving spouses

Number of surviving spouses[a] and average annual allowance[b] as at 31 March 2023

	PSSA			RCA No. 1	
	Number				
Age	Widower	Widow	Allowance ($)	Number	Allowance ($)
Up to 24	0	0	N/A	0	N/A
25 to 29	1	2	13,800	0	N/A
30 to 34	7	15	6,000	0	N/A
35 to 39	19	46	8,700	3	1,400
40 to 44	44	100	11,700	7	1,100
45 to 49	118	156	12,100	19	1,300
50 to 54	205	355	14,000	50	2,300
55 to 59	419	778	15,900	166	1,600
60 to 64	726	1,669	17,200	517	1,600
65 to 69	1,045	3,064	18,800	1,085	1,300
70 to 74	1,408	4,662	19,000	1,943	1,300
75 to 79	1,354	6,214	18,900	2,837	1,200
80 to 84	1,051	6,995	18,300	2,476	1,000
85 to 89	809	6,855	18,200	1,408	800
90 to 94	413	5,128	17,500	514	700
95 to 99	107	2,366	17,800	76	700
100 to 104	15	472	17,500	6	600
105 and over	0	30	12,000	0	N/A
All ages	7,741	38,907	18,100	11,107	1,100

a. As defined in appendix A.4.14
b. As defined in appendix A.4.16

Table 105 Surviving spouses - Summary

	31 March 2023	31 March 2020
Male average age	74.1 years	73.6 years
Female average age	80.7 years	80.6 years
Total annual pensions payable from		
PS Superannuation Account	$700 million	$689 million
PS Pension Fund	$110 million	$65 million
RCA No. 1 Account	$10 million	$10 million

Appendix N — Acknowledgements

The Superannuation Directorate of the Department of Public Services and Procurement Canada provided the data on plan members.

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The following individuals assisted in the preparation of this report:

Linda Benjauthrit, ACIA, ASA
Simon Brien, ACIA, ASA
Yann Bernard, FCIA, FSA
Ayoub Ezzahouri
Alexandre Filiatreault, FCIA, FSA
Julie Fortier
Shufen Lee, ACIA, ASA
Guillaume Lepine-Mathieu, ACIA, ASA
Kelly Moore
Jeffrey Muller, FCIA, FSA
Mieke Steenbakker Lucuik