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

PENSION PLAN FOR THE ROYAL CANADIAN MOUNTED POLICE

as at 31 March 2021

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
Facsimile: 613-990-9900
E-mail: oca-bac@osfi-bsif.gc.ca
Web site: www.osfi-bsif.gc.ca

Cat. No. IN3-16/9
ISSN 1489-3800

28 September 2022

The Honourable Mona Fortier, P.C., M.P.
President of the 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 2021 of the pension plan for the Royal Canadian Mounted Police. This actuarial review is in respect of pension benefits and contributions which are defined by Parts I, III, and IV of *the Royal Canadian Mounted Police Superannuation Act*, the *Special Retirement Arrangements Act* and the *Pension Benefits Division Act*.

Yours sincerely,

Assia Billig, FCIA, FSA, PhD
Chief Actuary
Office of the Chief Actuary

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1 Highlights of the report

Main Findings for the 20th RCMP Actuarial Report

	Superannuation Account (Service prior to 1 April 2000)	Pension Fund (Service since 1 April 2000)
Financial Position	➢ The balance of the Superannuation Account is $13,359 million.	➢ The actuarial value of the assets in respect of the Pension Fund is $13,802 million.
	➢ The actuarial liability for service prior to 1 April 2000[1] is $14,503 million.	➢ The actuarial liability for service since 1 April 2000 is $12,720 million.
	➢ The resulting actuarial shortfall is $1,144 million.	➢ The resulting actuarial surplus is $1,082 million.
Funding Ratio/Special payments	➢ It is expected that the government will make a one-time nominal credit of $1,220 million as at 31 March 2023 to eliminate the actuarial shortfall.	➢ The funding ratio is 108.5%.
Member Contribution Rates	➢ No contribution is made to the Superannuation Account[2].	➢ For calendar year 2024, the contribution rate is assumed to be 9.35% of earnings below the YMPE and 12.25% of earnings above the YMPE[3].
Projected Current Service Cost in millions of dollars (Calendar year 2023)	➢ No current service cost for the Superannuation Account.	➢ Member contributions: $277 million. ➢ Government contributions: $339 million.

[1] The actuarial liability for service prior to April 1, 2000 refers to the actuarial liability for service accrued prior to that date except for service elections made on or after April 1, 2000. Service elections made on or after 1 April 2000 are deemed to be service accrued since that date.
[2] Except contributions towards prior service elections.
[3] Contribution rates are equal to the contribution rates of Group 1 contributors under the pension plan for the Public Service of Canada.

2 Introduction

This actuarial report on the pension plan for the Royal Canadian Mounted Police (RCMP pension plan) was made pursuant to the *Public Pensions Reporting Act* (PPRA).

This actuarial valuation is as at 31 March 2021 and is in respect of pension benefits and contributions defined by Parts I, III, and IV of the *Royal Canadian Mounted Police Superannuation Act* (RCMPSA), the *Special Retirement Arrangements Act* (SRAA), which covers the Retirement Compensation Arrangement (RCA), and the *Pension Benefits Division Act* (PBDA).

The previous actuarial report was prepared as at 31 March 2018. The date of the next periodic review is scheduled to occur no later than 31 March 2024.

2.1 Purpose of Actuarial Report

The purpose of this actuarial valuation is to determine the state of the Royal Canadian Mounted Police (RCMP) Superannuation Account and RCA Account, the financial position of the RCMP Pension Fund and the projected current service costs of the RCMP Pension Fund and RCA Account as well as to assist the President of the Treasury Board in making informed decisions regarding the financing of the government's pension benefit obligations. This report may not be suitable for another purpose.

2.2 Scope 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 of certificate.

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

The various appendices provide a summary of the RCMP pension plan provisions, a description of data, methodoly and assumptions employed. The appendices also provide the pension plan projections and the uncertainty of results.

3 Valuation Basis

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

The *Royal Canadian Mounted Police Superannuation Act* was amended by Bill C-97 which received Royal Assent on 21 June 2019. The amendment modified the rule regarding the non-permitted surplus under the Pension Fund, increasing the permitted surplus from 10% to 25% of liabilities. This change in legislation has no impact on this actuarial valuation.

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 and assumptions of this actuarial valuation are consistent with the provisions of the Funding Policy.

As a result of amendments contained in the *Economic Action Plan 2014 Act, No. 2*, it is expected that active RCMP Civilian Members will become Public Service Employees under the *Public Service Employment Act* and will join the pension plan for the Public Service of Canada (PS pension plan). All benefits accrued under the RCMP pension plan for the affected members will be transferred to the PS pension plan. Since the definitive date on which active RCMP Civilian Members will be deemed as Public Service Employees is not known yet, the impact of the transfer is not presented in the report.

Member contribution rates for calendar years 2022 to 2024 are equal to the contribution rates of Group 1 contributors under the pension plan for the Public Service of Canada (as approved by Treasury Board). For calendar years 2025 and beyond, member contribution rates are estimated to remain constant at the 2024 level.

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

- The Pension Fund, comprised of 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; and
- the RCA Account, established to track benefits 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 in Canada and is based on methods and assumptions summarized in Appendices E to H.

[1] The plans refer to the Pension Plans for the Public Service of Canada, the Canadian Forces (Regular Force and Reserve Force) and the RCMP.

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 and demographic trends experience. A complete description of the assumptions is shown in Appendices F to H.

Table 1 presents a summary of the ultimate economic assumptions used in this report and those used in the previous report.

Table 1 Ultimate Best-Estimate Economic Assumptions

	31 March 2021	31 March 2018
Assumed level of inflation	2.0%	2.0%
Real increase in average pensionable earnings	0.6%	0.7%
Real increase in YMPE and MPE[1]	0.9%	1.0%
Real rate of return on the Pension Fund	3.9%	4.0%
Real projected yield on the Superannuation Account	2.0%	2.6%
Real projected yield on the RCA Account	2.0%	2.6%

Table 2 presents a summary of main demographic assumptions used in this report and those used in the previous report.

Table 2 Demographic Assumptions

	31 March 2021	31 March 2018
Promotional and Seniority rate of Increase[2]		
Regular Members	0.2 - 2.6%	0.2 - 2.6%
Civilian Members	0.6 - 2.4%	0.7 - 2.8%
Cohort Life expectancy at age 65		
Regular Members Male	22.5	23.0
Regular Members Female	25.0	25.0
Civilian Members Male	22.4	22.3
Civilian Members Female	24.1	24.1
Average retirement age		
Regular Members	57.0	56.4
Civilian Members	59.1	58.9

The current conflict in Ukraine, notably the escalation in the conflict as of 24 February 2022, is considered to be a subsequent event and is not taken into account for the purpose of this 20th RCMP Actuarial Report. It should be noted that there is much uncertainty surrounding the evolving conflict and potential impacts on the actuarial assumptions used to measure the actuarial liability and the market value of Public Sector Pension Investment Board's (PSPIB) portfolio. The impacts of the COVID-19 pandemic on the economic assumptions are reflected in

1 Year's Maximum Pensionable Earnings and Maximum Pensionable Earnings.
2 Range of increase for years of service from 4 to 35. More details can be found in Appendix G .

the report. There were no other events determined by the Chief Actuary to be subsequent events with material effects on the results of this valuation.

4 Valuation Results

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

4.1 RCMPSA – Financial Position

Since 1 April 2000, member and government contributions to the RCMP pension plan are credited to the RCMP Pension Fund, and the total amount of contributions net of benefits paid and administrative expenses is transferred to the PSPIB and invested in the financial markets.

This section presents the financial positions for both RCMPSA financing arrangements as at 31 March 2021. The results of the previous valuation are also shown for comparison.

Table 3 State of the Superannuation Account
(Service prior to 1 April 2000)
($ millions)

	31 March 2021	31 March 2018
Recorded balance	13,353	13,116
Present value of prior service contributions	6	7
Total Recorded Balance	13,359	13,123
Actuarial Liability		
Regular Members		
Contributors	1,126	1,578
Retirement pensioners	9,923	9,466
Disability pensioners	1,502	1,241
Surviving dependents	807	657
Civilian Members		
Contributors	89	136
Retirement pensioners	778	706
Disability pensioners	106	99
Surviving dependents	56	51
Administrative expenses	115	74
Outstanding payments	1	1
Total Actuarial Liability	14,503	14,009
Actuarial Excess/(Shortfall)	(1,144)	(886)

In accordance with the RCMPSA, the actuarial shortfall of $1,144 million could be amortized over a maximum period of 15 years beginning on 31 March 2023. If the shortfall is amortized over the maximum period, 15 equal annual credits of $98 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 $1,220 million as at 31 March 2023 that takes into account the interest on the shortfall accumulated from 31 March 2021.

Table 4 Financial Position – Pension Fund
($ millions)

	31 March 2021	31 March 2018
Assets		
Market value of assets	14,681	11,097
Actuarial smoothing adjustment	(1,056)	(821)
Receivable Contributions	164	-
Present value of prior service contributions	13	17
Total Actuarial Value of Assets	13,802	10,293
Actuarial Liability		
Regular Members		
Contributors	7,001	5,493
Retirement pensioners	2,854	2,302
Disability pensioners	1,231	644
Surviving dependents	78	50
Civilian Members		
Contributors	956	826
Retirement pensioners	416	308
Disability pensioners	139	78
Surviving dependents	13	9
Outstanding payments	32	11
Total Actuarial Liability	12,720	9,721
Actuarial Surplus/(Deficit)	1,082	572

As at 31 March 2021, the Pension Fund has a surplus of $1,082 million and the funding ratio is 108.5%. As such, no special payments are required and there is no non-permitted surplus[1].

4.2 RCMPSA – Reconciliation of the Changes in Financial Positions

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

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

Table 5 Reconciliation of RCMP Financial Position
($ millions)

	Superannuation Account Actuarial Excess/(Shortfall)	Pension Fund Actuarial Surplus/(Deficit)
As at 31 March 2018	(886)	572
Recognized investment gains as at 31 March 2018	0	821
Change in methodology	(71)	(48)
Retroactive changes to the population data	17	(20)
Revised Initial Financial Position as at 31 March 2018	(940)	1,325
Expected interest on initial financial position	(111)	219
Special credits / payments	990	10
Net experience gains and (losses)	13	704
Revision of actuarial assumptions	(1,047)	(120)
Change in the present value of administrative expenses	(49)	0
Unrecognized investment gains as at 31 March 2021	0	(1,056)
As at 31 March 2021	(1,144)	1,082

4.2.1 Recognized Investment Gains as at 31 March 2018

An actuarial asset valuation method that minimizes the impact of short-term fluctuations in the market value of assets was used in the previous valuation report, causing the actuarial value of the Pension Fund assets to be $821 million less than their market value.

4.2.2 Change in Methodology

Two changes occurred since the last valuation:

- A new actuarial valuation software was used to complete the valuation.
- As a result of the change in actuarial valuation software, the Age Last approach was replaced by an Age Nearest approach. These two methodologies are detailed in Appendix E.2.4

The combined changes increased the Superannuation Account liability by $71 million and increased the Pension Fund liability by $48 million.

4.2.3 Retroactive Changes to the Population Data

The population data maintained by PSPC is subject to retroactive changes. The impacts of these changes decreased the Superannuation Account liability as at 31 March 2018 by $17 million and increased the initial Pension Fund liability as at the same date by $20 million.

4.2.4 Expected Interest on Revised Initial Financial Position

The amount of interest expected to accrue during the intervaluation period increased the revised shortfall by $111 million for the Superannuation Account and increased the revised surplus by $219 million for the Pension Fund.

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

4.2.5 Special Credits/Payments

The government made a one-time special credit to eliminate the $886 million shortfall reported in the Superannuation Account as at 31 March 2018. After factoring the expected interest, this credit resulted in an increase of $990 million in the recorded balance of the Superannuation Account as at 31 March 2021.

A deficit was reported in the Pension Fund as at 31 March 2015 which were to be amortized over a period of 15 years in accordance with the legislation. A special payment of $9 million was made to the Pension Fund during the intervaluation period that resulted in an increase of $10 million in the assets of the Pension Fund after factoring in the expected interest to 31 March 2021.

4.2.6 Experience Gains (Losses)

Since the previous valuation, experience gains and losses have decreased the Superannuation Account shortfall by $13 million and have increased the Pension Fund surplus by $704 million. The main items are described in Table 6.

Table 6 Experience Gains and (Losses)
($ millions)

	Superannuation Account	Pension Fund
Demographic experience (i)		
Terminations	(1)	(37)
Retirements	1	20
Disabilities	0	(30)
Mortality	0	(11)
Promotional and seniority increases	(2)	32
Total impact of demographic experience	(2)	(26)
Economic experience		
Interest and investment earnings (ii)	(26)	1,114
Pension indexation (iii)	98	39
Economic increases in pensionable earnings (iv)	(61)	(377)
YMPE and MPE increases	1	16
Service cost/Contributions difference	1	(37)
Transfer value rates	0	(12)
PBDA payments	(1)	(13)
Total impact of economic experience	12	730
Miscellaneous	3	0
Experience Gains and (Losses)	13	704

(i) The demographic experience increased the Superannuation Account shortfall by $2 million and decreased the Pension Fund surplus by $26 million. The most important items are as follows:

- The number of terminations was higher than expected. The Superannuation Account shortfall increased by $1 million and the Pension Fund surplus decreased by $37 million.
- The number of retirements was less than expected. The Superannuation Account shortfall decreased by $1 million and the Pension Fund surplus increased by $20 million.
- The number of disabled pensioners was higher than expected. The Pension Fund surplus decreased by $30 million.
- Mortality incidence was higher than expected for older members and lower than expected for younger members. The Pension Fund surplus decreased by $11 million.
- Promotional and seniority salary increases were higher than expected for long service members but lower than expected for members with short to medium service. The Superannuation Account shortfall increased by $2 million and the Pension Fund surplus increased by $32 million.

(ii) The rates of interest credited to the Superannuation Account were in aggregate lower than the corresponding projected Account yields in the previous valuation resulting in an experience loss of $26 million.

The return realized on the Pension Fund for plan years 2019 to 2021 were 7.1%, (0.6%) and 18.4% versus the expected returns of 5.3%, 5.1% and 5.3%. Consequently, the Pension Fund experienced an investment gain of $1,114 million.

(iii) The 2020 and 2021 pension indexation rates were lower than the corresponding rates projected in the previous valuation (2.0% and 1.0% vs 1.9 and 2.0% respectively). As a result, the Superannuation Account shortfall decreased by $98 million and the Pension Fund surplus increased by $39 million.

(iv) Following the signature of the RCMP collective agreement, the effective economic increases in pensionable earnings were higher than the those assumed over the three-year intervaluation period. As a result, the Superannuation Account shortfall increased by $61 million and the Pension Fund surplus decreased by $377 million.

4.2.7 Revision of Actuarial Assumptions

Actuarial assumptions were revised based on economic trends and demographic experience as described in Appendices F and G. These revisions have increased the Superannuation Account shortfall by $1,047 million and decreased the Pension Fund actuarial surplus by $120 million. The impact of these revisions is presented in Table 7 and the most significant items are discussed thereafter.

Table 7 Revision of Actuarial Assumptions [1]
($ millions)

	Superannuation Account	Pension Fund
Economic assumptions		
Yields and Rates of return	(788)	5
Increases in pensionable earnings and YMPE/MPE	(8)	(76)
Pension indexation	(404)	(174)
Transfer value rates	0	(25)
Total	(1,200)	(270)
Demographic assumptions		
Mortality rates of healthy members	172	48
Mortality rates of disabled members	(10)	(17)
Mortality rates of survivors	40	10
Mortality improvement factors	(82)	(41)
Withdrawal rates	0	23
Retirement rates	14	94
Disability rates	1	(6)
Seniority and promotional increases	0	28
Proportion opting for a deferred annuity	0	(11)
Proportion of disabled members that will receive a CPP/QPP disability pension	1	14
Family composition	17	8
Total	153	150
Net impact of revisions	(1,047)	(120)

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

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

- ultimate real projected yield on the Superannuation Account decreased from 2.6% to 2.0%;
- ultimate real increase in pensionable earnings, Year's Maximum Pensionable Earnings (YMPE), and in the Maximum Pensionable Earnings were decreased by 0.1%; and
- pension indexation in plan years 2022 to 2026 was increased.

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

The most significant changes to demographic assumptions are related to mortality assumptions. Details of the changes in demographic assumptions are described in Appendix G .

4.2.8 Change in the Present Value of Administrative Expenses

The previous report annual administrative expense assumption of 0.45% of total pensionable payroll remained the same in this report. This is based on an analysis of the trend in

[1] A negative number indicates an increase in the Superannuation Account shortfall and a decrease in the Pension Fund surplus.

administrative expenses charged to both the Superannuation Account and the Pension Fund over the last three years.

For plan year 2022, 54% 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 1.5% per year. In the previous valuation, they were expected to be 51% in plan year 2022, decreasing by 2% every year. This change in the allocation of administrative expenses to the Superannuation Account resulted in an increase in the Superannuation Account shortfall of $49 million as at 31 March 2021.

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. The method, which is described in Appendix E, resulted in an actuarial value of assets that is $1,056 million less than the market value of the Pension Fund assets as at 31 March 2021.

4.3 RCMPSA – Cost Certificate

4.3.1 Current Service Cost

The details of the current service cost for plan year 2023 and a reconciliation with the current service cost for plan year 2020 are shown in Table 8 and Table 9 respectively.

Table 8 Current Service Cost for Plan Year 2023
($ millions)

Member required contributions	269
Government current service cost	325
Total current service cost	594
Expected pensionable payroll	2,503
Total current service cost as % of expected pensionable payroll	23.73%

Table 9 Reconciliation of RCMPSA Current Service Cost
(% of pensionable payroll)

For plan year 2020	23.26
Expected current service cost change	0.04
Change in methodology	0.36
Intervaluation experience	0.09
Changes in actuarial assumptions	
Economic assumptions	0.41
Demographic assumptions	(0.43)
For plan year 2023	23.73

4.3.2 Projection of Current Service Cost

The current service cost is borne jointly by the members and the government. The member

contribution rates are determined on a calendar year basis and they have been changed since the last valuation. Contribution rates are equal to the contribution rates of Group 1 contributors under the pension plan for the Public Service of Canada. The contribution rates are as follows:

Table 10 Member Contribution Rates

Calendar year	Below YMPE	Above YMPE
2021	9.83%	12.26%
2022	9.36%	12.48%
2023	9.35%	12.37%
2024	9.35%	12.25%

Table 11 shows the RCMPSA current service costs expressed in millions of dollars and as a percentage of the projected pensionable payroll in each given plan year. Members' contributions and the government current service costs are also shown on a calendar year basis in Table 12.

Table 11 Projection of Current Service Cost on a Plan Year Basis

Plan Year	$ millions			Percentage of Pensionable Payroll			Portion Borne by the Government
	Contributors	Government	Total	Contributors	Government	Total	
2023	269	325	594	10.75%	12.98%	23.73%	54.7%
2024	279	344	623	10.68%	13.15%	23.83%	55.2%
2025[1]	291	361	652	10.62%	13.18%	23.80%	55.4%
2026[1]	302	374	676	10.63%	13.16%	23.79%	55.3%

Table 12 Projection of Current Service Cost on a Calendar Year Basis

Calendar Year	Current Service Cost ($ millions)			Current Service Cost (% of pensionable payroll)			Ratio of Government to Contributor Current Service Cost
	Contributors	Government	Total	Contributors	Government	Total	
2023	277	339	616	10.71%	13.11%	23.82%	1.22
2024	288	357	645	10.64%	13.19%	23.83%	1.24
2025	299	371	670	10.62%	13.17%	23.79%	1.24

4.3.3 Administrative Expenses

The Pension Fund administrative expenses are included in the total current service cost and are estimated to be as follows:

Table 13 Pension Fund Administrative Expenses

Plan Year	($ millions)
2023	5
2024	5
2025	6
2026	6

[1] Contributions for plan year 2025 and 2026are based on estimated employee contribution rates for Group 1 contributors under the pension plan for the Public Service of Canada.

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 14 Estimated Contributions for Prior Service Elections
($ millions)

Plan Year	Superannuation Account		Pension Fund	
	Contributors	Government	Contributors	Government
2023	0.2	0.2	0.7	0.8
2024	0.2	0.2	0.6	0.8
2025	0.2	0.2	0.6	0.7
2026	0.2	0.2	0.5	0.7

4.4 Sensitivity of Valuation Results to Assumptions

The information required by statute, which is presented in this 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 best-estimate assumptions that underlie the actuarial estimates. Individual sensitivity tests have been performed using alternative assumptions.

This valuation assumes that the current mortality rates applicable to members of the RCMP pension plan will improve over time. This assumption is based on the longevity improvement assumption contained in the 30th Actuarial Report on the Canada Pension Plan. Table 15 presents the effect of varying the longevity improvement assumptions on the plan year 2023 current service cost and the actuarial liabilities for the Superannuation Account and the Pension Fund as at 31 March 2021.

Table 15 Sensitivity of Valuation Results to Variations in Longevity Improvement Factors

	Current Service Cost as a percentage of pensionable payroll		Actuarial Liability ($ millions)				Cohort Life Expectancy at age 65 as at 31 March 2021 (in years) [1]	
			Superannuation Account		Pension Fund			
Longevity improvement factors	2023	Effect		Effect		Effect	Male	Female
Current basis	23.73	None	14,503	None	12,720	None	22.5	25.0
- if 0%	23.37	(0.86)	13,910	(593)	12,343	(377)	21.3	24.0
- if ultimate 50% higher	24.46	0.20	14,563	60	12,820	100	22.7	25.3
- if ultimate 50% lower	24.05	(0.20)	14,446	(57)	12,668	(52)	22.7	25.0
- if kept at 2022 level	24.96	0.69	14,865	362	13,044	324	23.5	25.8

The following table presents the effect on the plan year 2023 current service cost and the actuarial liabilities for the Superannuation Account and the Pension Fund as at 31 March 2021 when key economic assumptions are varied by one percentage point per annum.

[1] For a healthy Regular Member.

Table 16 Sensitivity of Valuation Results to Variations in Key Economic Assumptions

	Current Service Cost (%)		Actuarial Liability ($ millions)			
			Superannuation Account		Pension Fund	
Assumption(s) Varied	2023	Effect	31 March 2021	Effect	31 March 2021	Effect
None (i.e. current basis)	23.73	None	14,503	None	12,720	None
Investment yield/return						
- if 1% higher	19.28	(4.45)	12,887	(1,616)	10,751	(1,969)
- if 1% lower	31.09	7.36	16,480	1,977	15,353	2,633
Pension indexation						
- if 1% higher	27.68	3.95	16,391	1,888	14,499	1,779
- if 1% lower	21.48	(2.25)	12,925	(1,578)	11,308	(1,412)
Salary, YMPE and MPE						
- if 1% higher	26.59	2.86	14,525	22	13,280	560
- if 1% lower	22.24	(1.49)	14,485	(18)	12,272	(448)
Inflation[1]						
- if 1% higher	23.72	(0.01)	14,453	(50)	12,567	(153)
- if 1% lower	24.82	1.09	14,557	54	12,931	211

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 the key assumptions to the extent that such effects are linear.

4.5 RCA Account

This section shows the financial position of the RCA account as at 31 March 2021. The results of the previous valuation are also shown for comparison.

4.5.1 State of the RCA Account

Table 17 State of the RCA Account
($ millions)

	31 March 2021	31 March 2018
Recorded account balance	36	35
Refundable tax	35	35
Total Recorded Balance	71	70
Actuarial Liability		
• Contributors	12	15
• Pensioners	52	39
Total Actuarial Liability	64	54
Actuarial Excess/(Shortfall)	7	16

The sum of the recorded balance of the RCA Account and the refundable tax is $71 million; it exceeds the actuarial liability of $64 million by $7 million as at 31 March 2021 ($16 million as at 31 March 2018). The SRAA does not allow for an adjustment to be made to the RCA Account to track the actuarial liability when there is an actuarial excess.

[1] Change in inflation impacts nominal investment yield/return, pension indexation, as well as salary, YMPE, and MPE.

4.5.2 RCA - Current Service Cost

Borne jointly by the contributors and the government, the projected RCA current service cost of 0.03% of pensionable payroll for plan year 2023 is estimated to remain at the same level for the next three plan years.

Table 18 shows the RCA current service costs expressed in millions of dollars and as a percentage of the projected pensionable payroll in each given plan year. Members' contributions and the government current service costs are also shown on a calendar year basis in Table 19.

Table 18 RCA – Current Service Cost
($ millions)

Plan Year	2023	2024	2025	2026
Total current service cost				
Pensionable excess earnings[1]	0.42	0.44	0.47	0.48
Survivor allowance[1]	0.22	0.23	0.24	0.24
Total	0.64	0.67	0.71	0.72
Member contributions - pensionable excess earnings	0.21	0.22	0.23	0.24
Government current service cost	0.43	0.45	0.48	0.48
Total current service cost as % of pensionable payroll	0.03%	0.03%	0.03%	0.03%

Table 19 RCA Current Service Cost on a Calendar Year Basis

Calendar Year	Current Service Cost ($ millions)			Current Service Cost (% of pensionable payroll)			Ratio of Government to Contributor Current Service Cost[2]
	Contributors	Government	Total	Contributors	Government	Total	
2023	0.22	0.45	0.67	0.01	0.02	0.03	2.05
2024	0.23	0.47	0.70	0.01	0.02	0.03	2.04
2025	0.24	0.48	0.72	0.01	0.02	0.03	2.00

4.6 Summary of Estimated Government Contributions and Credits

Table 20 and Table 21 summarize the estimated total government contributions under the Pension Fund and total government credit under the RCA Account on a plan year basis.

[1] See Appendix B for details on the provisions of the RCA.
[2] Ratio based on unrounded dollar amounts.

Table 20 Estimated Government Contributions
($ millions)

Plan Year	Current Service Cost Pension Fund	Prior Service Contributions Pension Fund	Total Government Contributions
2023	325.0	0.8	325.8
2024	344.0	0.8	344.8
2025	361.0	0.7	361.7
2026	374.0	0.7	374.7

Table 21 Estimated Government Credit
($ millions)

Plan Year	RCA Account Current Service Cost	Expected Special Credit Superannuation Account	Prior Service Contributions Superannuation Account	Total Government Credit
2023	0.4	1,219.6	0.2	1,220.2
2024	0.5	0.0	0.2	0.7
2025	0.5	0.0	0.2	0.7
2026	0.5	0.0	0.2	0.7

5 Actuarial Opinion

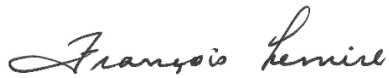
In our opinion, considering that this report was prepared pursuant to the *Public Pensions Reporting Act*,

- 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 the 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 opinions 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 – Specific Standards for Pension Plans) published by the Canadian Institute of Actuaries.

To the best of our knowledge, as of the date of the signing of this report and after discussion with Public Services and Procurement Canada and the Royal Canadian Mounted Police, we have not learned of any events, other than the events already accounted for in section 3 of this report, that would have a material impact on the results of this valuation.

Assia Billig, FCIA, FSA
Chief Actuary



François Lemire, FCIA, FSA

Yann Bernard, FCIA, FSA

Ottawa, Canada
28 September 2022

Appendix A — Summary of Pension Benefit Provisions

Pensions for members of the Royal Canadian Mounted Police ("the Force") were provided under the *Royal Canadian Mounted Police Act* until the *Royal Canadian Mounted Police Pension Continuation Act* and the *Royal Canadian Mounted Police Superannuation Act* (RCMPSA) were enacted in 1959. Benefits are also provided to members of the Force 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

The RCMPSA was amended by Bill C-97 which received Royal Assent on 21 June 2019. The amendment modified the rule regarding the non-permitted surplus under the Pension Fund, increasing the permitted surplus from 10% to 25% of liabilities.

There was no other amendment to the RCMPSA and the *Royal Canadian Mounted Police Superannuation Regulations* having a material impact on the plan provisions since the previous valuation.

Summary of Pension Benefit Provisions

This Appendix summarizes the pension benefits provided under the RCMPSA 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

Membership in the plan is compulsory for all members of the Force regardless of length of service. Continued membership in the plan became optional for members of the Force who transferred to the Canadian Security Intelligence Service when it was established in 1984.

A.2 Contributions

A.2.1 Members

During the first 35 years of pensionable service, members contribute according to the rates determined by the Treasury Board which must not exceed the contribution rates paid by Group 1 contributors under the Public Service pension plan (PS pension plan). Contribution rates of Group 1 contributors under the PS pension plan are shown in the following table. It is assumed that the RCMP contribution rates will be equal to those of the PS pension plan. More information on the rates assumed under the PS pension plan can be found in the Actuarial Report on the Pension Plan for the Public Service of Canada as at 31 March 2020.

Table 22 Member Contribution Rates

Calendar Year	2021	2022	2023	2024
Contribution rates on earnings up to the maximum covered by the Canada Pension Plan	9.83%	9.36%	9.35%	9.35%
Contribution rates on any earnings over the maximum covered by the Canada Pension Plan	12.26%	12.48%	12.37%	12.25%

After 35 years of pensionable service, members contribute 1% of pensionable earnings.

A.2.2 Government

A.2.2.1 Current Service

The government determines its ongoing monthly cost as an amount, which when combined with the required contributions by members in respect of current service, is sufficient to cover the cost, as estimated by the President of the Treasury Board, of all future 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 under the Superannuation Account for prior service elections. Government credits to the Pension Fund in respect of elected prior service are as described for current service.

A.2.2.3 Actuarial Excess and Surplus

The *Public Sector Pension Investment Board Act* (S.C. 1999, c. 34), which received Royal Assent on 14 September 1999, amended the RCMPSA to give the government the authority to:

- debit the excess of the balance 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 employee and/or government contributions or by making withdrawals.

A.2.2.4 Actuarial Shortfall and Deficit

In accordance with the RCMPSA, if an actuarial shortfall for the Superannuation Account is identified through a triennial statutory actuarial valuation, the actuarial shortfall can be amortized over a period of up to 15 years through annual credits of an amount that, in the opinion of the President of the Treasury Board will, at the end of the fifteenth fiscal year following the tabling of that report or at the end of the shorter period that the President of the Treasury Board may determine, together with the amount that the President of the Treasury Board estimates will be to the credit of the Superannuation Account at that time, meet the cost of the benefits payable in respect of pensionable service prior to April 2000.

Similarly, if an actuarial deficit for the Pension Fund is identified through a triennial statutory

actuarial valuation, the actuarial deficit can be amortized over a period of up to 15 years through annual payments of an amount that, in the opinion of the President of the Treasury Board will, at the end of the fifteenth fiscal year following the tabling of that report or at the end of a shorter period that the President of the Treasury Board may determine, together with the amount that the President of the Treasury Board estimates will be to the credit of the Pension Fund at that time, meet the cost of the benefits payable in respect of pensionable service since April 2000.

A.3 Summary Description of Benefits

The objective of the RCMP pension plan 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 of members 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 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 with the Consumer Price Index. Such indexation also applies to deferred pensions during the deferral period. Entitlement to benefits depends on either service in the Force or pensionable service, as defined in notes A.4.3 and A.4.4 below.

Detailed notes on the following overview are provided in section A.4.

A.3.1 Regular Members

Type of Termination	Service in the Force	Benefit
Retirement because of age (Note A.4.5)	Under 2 years	Greater of: • return of contributions (Note A.4.6), or • cash termination allowance (Note A.4.7)
	2 years or more	Immediate annuity (Note A.4.8)
Compulsory retirement to promote economy or efficiency in the Force	Under 2 years	Return of contributions
	2 years to less than 20 years	Choice of: • deferred annuity (Note A.4.9), or • reduced immediate annuity (Note A.4.11)
	20 years or more	Immediate annuity
Compulsory retirement because of misconduct	Any period	At the discretion of the Treasury Board (Note A.4.12)
Other voluntary withdrawal or retirement	Under 2 years	Return of contributions
	2 years to less than 20 years	Choice of: • deferred annuity, or • transfer value if under age 60 (Note A.4.10)
	20 years to less than 25 years	Annual allowance (Note A.4.13)
	25 years or more	Immediate annuity
Type of Termination	**Pensionable Service**	**Benefit**
Compulsory retirement because of disability	Under 2 years	Greater of: • return of contributions, or • cash termination allowance
	2 years or more	Immediate annuity
Death leaving no eligible survivor	Under 2 years	Return of contributions to nominated beneficiary, otherwise to estate
	2 years or more	Minimum death benefit (Note A.4.16)
Death leaving eligible survivor(s) (Notes A.4.14 and A.4.15)	Under 2 years	Greater of: • return of contributions, or • one month of pay per year of pensionable service
	2 years or more	Annual allowance to eligible survivor(s) (Note A.4.18)

A.3.2 Civilian Members

Type of Termination	Pensionable Service (Unless Stated Otherwise)	Benefit
Voluntary retirement at age 60 or over	Under 2 years	Return of contributions (Note A.4.6)
	2 years or more	Immediate annuity (Note A.4.8)
Compulsory retirement because of misconduct	Any period	At the discretion of the Treasury Board (Note A.4.12)
Other voluntary withdrawal or retirement	Under 2 years of service in the Force	Return of contributions
	2 years of service in the Force to less than 35 years of service in the Force: • Age 55 and above with at least 30 years of pensionable service	Immediate annuity
	• Less than age 55 or less than 30 years of pensionable service	Choice of • deferred annuity (Note A.4.9), or • transfer value if under age 50 (Note A.4.10), or • annual allowance if aged at least 50 (Note A.4.19)
	35 years of service in the Force or more	Immediate annuity
Compulsory retirement because of disability	Under 2 years	Greater of: • return of contributions, or • cash termination allowance (Note A.4.7)
	2 years or more	Immediate annuity
Death leaving no eligible survivor	Under 2 years	Return of contributions to nominated beneficiary, otherwise to estate
	2 years or more	Minimum death benefit (Note A.4.16)
Death leaving eligible survivor(s) (Notes A.4.14 and A.4.15)	Under 2 years	Greater of: • return of contributions, or • one month of pay per year of pensionable service
	2 years or more	Annual allowance to eligible survivor(s) (Note A.4.18)

A.3.3 Pensioners

Type of Termination	Benefit
Disability	Immediate annuity
Death leaving no eligible survivor	Minimum death benefit (Note A.4.16)
Death leaving eligible survivor(s) (Notes A.4.14 and A.4.15)	Annual allowance to eligible survivor(s) (Note A.4.18)

A.4 Explanatory Notes

A.4.1 Pensionable Earnings and Pensionable Payroll

Pensionable earnings mean 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.

A.4.2 Indexation

A.4.2.1 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.4.2.2 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.4.2.3 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 a Regular Member 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 years; or
- at least 60 years old.

A.4.3 Service in the Force

Service in the Force includes any period as a member of the Force and any period of prior service as a police officer that the member purchased under the elective service provisions or through a pension transfer agreement.

A.4.4 Pensionable Service

Pensionable service includes any period of service in the Force in respect of which a contributor either (1) had to make contributions that remain in the plan or (2) elected to contribute. It also includes any period of prior service with another employer in respect of which a contributor has elected to contribute in accordance with the provisions of the RCMPSA.

A.4.5 Retirement Because of Age

Retirement because of age means voluntarily ceasing to be a Regular Member on or after reaching age 60, for a reason other than disability or misconduct. Regular Members who joined the Force before July 1988 may elect to retain the prescribed retirement ages (56 for ranks up to corporal, 57 for sergeants, and 58 for staff sergeants and majors) in effect at that time.

A.4.6 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 RCMP Pension Fund or in accordance with the interest credited on the Superannuation Account, depending on where contributions were credited.

A.4.7 Cash Termination Allowance

Cash termination allowance means an amount equal to one month's salary, as at the date of termination, multiplied by the number of years of pensionable service, reduced by an amount which takes into consideration the coordination of contributions under the RCMP pension plan with those under the CPP/QPP.

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 annual pensionable earnings of the contributor over any period of five[1] 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 salary calculation are based on a full 40 hour work week and the pension benefit is prorated to take periods of part-time service into account.

When a pensioner attains age 65 or becomes entitled to a disability pension from the CPP/QPP, the annual pension amount is reduced by a percentage of the *indexed CPP annual pensionable earnings*[2] (or, if lesser, the indexed five-year pensionable earnings average on which the immediate annuity is based), multiplied by the *years of CPP pensionable service*[3]. The applicable percentage is 0.625%.

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.4.18) or a residual death

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

2 *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.

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

benefit (Note A.4.17) may be payable.

A.4.9 Deferred Annuity

Deferred annuity means an annuity that normally becomes payable to a former contributor who reaches age 60. The annual payment is determined as for an immediate annuity (Note A.4.8) but is also adjusted to reflect the indexation (Note A.4.2) from the date of termination to the commencement of benefit payments.

The deferred annuity 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.4.13 and A.4.19) that is the prescribed actuarial equivalent to the deferred annuity.

A.4.10 Transfer Value

Regular Members and Civilian Members who, at their date of termination of pensionable service, are under age 60 and 50 respectively, and who are eligible for a deferred annuity may elect to transfer the commuted value of their benefits, determined in accordance with the regulations, to

- a locked-in Registered Retirement Savings Plan of the prescribed kind; 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 of the prescribed kind.

A.4.11 Reduced Immediate Annuity

Reduced immediate annuity means an immediate annuity for which the annual amount of annuity determined as described in Note A.4.8 is reduced until age 65 by 5% for each full year, not exceeding six, by which the period of service in the Force is less than 20 years. This type of annuity may be chosen by a Regular Member who has completed between 2 and 20 years of service in the Force upon being compulsorily retired:

- on account of a reduction in the Force, or
- to promote economy or efficiency in the force (only at the discretion of the Treasury Board).

A.4.12 Retirement Because of Misconduct

Upon compulsory retirement because of misconduct, a contributor is entitled to

- a return of contributions, or
- a greater benefit as specified by the Treasury Board but not exceeding that available in the absence of misconduct.

A.4.13 Annual Allowance for Regular Members

Annual allowance means, for a Regular Member, an immediate annuity reduced by 5% for each full year by which

- the period of service in the Force is less than 25 years, or
- the age at retirement is less than the applicable retirement age (as defined in Note A.4.5), whichever is the lesser.

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 Minister 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;
- the pensioner married at age 60 or over, 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; or
    - the pensioner is a female who retired before 20 December 1975 and did not make an optional survivor benefit election within the one-year period ending 6 May 1995.

A.4.15 Eligible Surviving Children

Eligible surviving children include 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 Minimum Death Benefit

If a contributor or a pensioner dies leaving no eligible survivor, the lump sum normally paid is the amount by which 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,

exceeds any pension payments already received.

Indexation adjustments are excluded from these calculations.

A.4.17 Residual Death Benefit

The same formula described in Note A.4.16 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 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* equal to 1% of the highest average 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 an eligible surviving spouse is equal to the basic allowance unless the eligible surviving 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 annuity otherwise payable to an eligible surviving child is doubled if the child is an orphan.

Survivor annual allowances are not coordinated with the CPP/QPP and are payable in equal monthly instalments at the end of month until 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.4.19 Annual Allowance for Civilian Members

Annual allowance means, for a Civilian Member, an annuity payable immediately on retirement, upon attaining age 50 or upon exercising the option, whichever occurs later. The amount of the allowance is equal to the amount of the deferred annuity to which the Civilian Member would otherwise be entitled, reduced by 5% for each year between age 60 and the age when the allowance becomes payable. However, if the Civilian Member is at least 50 years old, and has at least 25 years of pensionable service, then the difference is reduced to the greater of

- 55 minus the age, and
- 30 minus the number of years of pensionable service.

The Treasury Board can waive all or part of the reduction for Civilian Members who are involuntarily retired at ages 55 and over with at least ten years of service in the Force.

If a former Civilian Member entitled to an annual allowance commencing at age 50 becomes disabled before then, the entitlement changes to an immediate annuity (Note A.4.8). If disability

ceases before age 60, then the entitlement changes to a deferred annuity (Note A.4.9) unless the pensioner elects an annual allowance that is the prescribed actuarial equivalent to the deferred annuity.

A.4.20 Division of Pension with Former Spouse

In accordance with the *Pension Benefits Division Act*, 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 the benefit limitations of registered pension plans and are less tax-advantageous as the fund must transfer a 50% refundable tax to the Canada Revenue Agency (CRA) immediately. Under the RCMP RCA, a debit is made from the RCA Account such that in total roughly half the recorded balances in the account are held as a tax credit (CRA refundable tax). This Appendix describes the RCMP pension benefits financed through retirement compensation arrangements that have a material impact on this valuation.

B.1 Annual Allowance for Eligible Survivors

If the annual allowance for eligible survivors described in Appendix A.4.18 exceeds the tax-related limits described hereafter for registered pension plans, then the excess in respect of service from 1 January 1992 onwards is debited from the RCA Account.

B.1.1 Tax-Related Limits on Preretirement Survivor Benefits

The total of all preretirement survivor pensions payable in respect of a deceased member may not exceed the member's projected lifetime retirement benefit and the amount of spouse allowance may not exceed two-thirds of the projected lifetime retirement benefit.

The member's projected lifetime retirement benefit is the greater of:

- the deceased member's accrued pension reduced by the CPP coordination offset; and
- the lesser of:
    - the member's projected retirement benefit at age 65 based on current salary history, and
    - 1.5 times the YMPE in effect during the year of the member's death.

B.1.2 Tax-Related Limits on Post-Retirement Survivor Benefits

The amount of the spouse allowance provided 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.

B.2 Excess Pensionable Earnings

Starting in 1995, the highest average of pensionable earnings under the RCMPSA is subject to a prescribed yearly maximum. Because the RCMPSA is coordinated with the pensions paid by the CPP/QPP, the prescribed maximum is derived from both the maximum annual pension benefit accrual ($3,420.00 for calendar year 2022) payable from a registered defined benefit pension plan for each year of pensionable service and the YMPE. The maximum is $191,300 for calendar year 2022. To the extent that a member's average earnings at retirement exceed the prescribed yearly maximum, the corresponding excess pension is debited from the RCA Account.

Appendix C — Assets, Accounts and Intervaluation Rates of Return

C.1 Assets and Account Balances

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

With respect to the unfunded portion of the RCMP pension plan, accounts were established to track government's pension benefit obligations such as the Superannuation Account, for service prior to 1 April 2000, and the RCA Account for benefits in excess of those that can be provided under the *Income Tax Act* limits for registered pension plans.

C.1.1 RCMP Superannuation Account

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

The Superannuation Account was credited with all RCMPSA 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 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.

Table 23 Reconciliation of Balances in Superannuation Account [1] ($ millions)				
Plan Year	2019	2020	2021	2019-2021
Opening balance	**13,116**	**12,917**	**13,621**	**13,116**
INCOME				
Interest earnings	508	471	461	1,440
Employer contributions	-	-	-	-
Member contributions	1	1	1	3
Transfers from other pension plans	-	-	-	-
Actuarial liability adjustments	-	956	-	956
Subtotal	**509**	**1,428**	**462**	**2,399**
EXPENDITURES				
Annuities	699	712	720	2,131
Pension divisions	5	6	4	15
Return of contributions and cash allowances	-	1	-	1
Pension transfer value payments	-	-	-	-
Transfers to other pension plans	-	-	-	-
Minimum benefits	-	-	-	-
Administrative expenses	4	5	6	15
Subtotal	**708**	**724**	**730**	**2,162**
Closing balance	**12,917**	**13,621**	**13,353**	**13,353**

Since the last valuation, the Superannuation Account balance has increased by $237 million (a 1.8% increase) to reach $13,353 million as at 31 March 2021.

C.1.2 RCMP 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 RCMPSA contributions since 1 April 2000, as well as with prior service contributions in respect of elections made since that date and leave without pay contributions for periods after that date. The Pension Fund is also credited with the net investment returns generated by the capital assets managed by PSPIB. 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.

[1] Numbers may not add up due to rounding.

Table 24 Reconciliation of Balances in Pension Fund[1]
($ millions)

Plan Year	2019	2020	2021	2019-2021
Opening balance	**11,097**	**12,131**	**12,254**	**11,097**
INCOME				
Gross Investment earnings	881	15	2,346	3,242
Employer contributions	262	270	269	801
Member contributions	223	220	220	663
Transfers from other pension plans	5	10	16	31
Actuarial liability adjustments	9	-	-	9
Subtotal	**1,380**	**515**	**2,851**	**4,746**
EXPENDITURES				
Annuities	217	244	268	729
Pension divisions	11	12	15	38
Return of contributions and cash allowances	-	-	1	1
Pension transfer value payments	35	40	59	134
Transfers to other pension plans	1	-	2	3
Minimum benefits	-	1	1	2
Administrative expenses	4	4	5	13
PSPIB Investment Expenses	78	91	73	242
Subtotal	**346**	**392**	**424**	**1,162**
Closing balance	**12,131**	**12,254**	**14,681**	**14,681**

Since the last valuation, the Pension Fund balance has increased by $3,584 million (a 32.3% increase) to reach $14,681 million as at 31 March 2021.

C.1.3 RCA Account

The amount in the RCA account is composed of the recorded balance in the Retirement Compensation Arrangement Account, which forms part of the Public 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 balances in the Account is held as a tax credit (CRA refundable tax).

No formal debt instrument is issued to the RCA 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.

[1] Numbers may not add up due to rounding.

Table 25 Reconciliation of Balances in RCA Account
($ millions)

Plan Year	2019	2020	2021	2019-2021
Opening balance	35	35	35	35
INCOME				
Interest earnings	1	1	1	3
Employer contributions	1	1	1	3
Member contributions	0	0	0	0
Transfers from other pension plans	0	0	0	0
Subtotal	2	2	2	6
EXPENDITURES				
Annuities	2	2	1	5
Amount transfer to CRA	0	0	0	0
Subtotal	2	2	1	5
Closing balance	35	35	36	36
CRA Refundable tax	35	35	35	35

Since the last valuation, the RCA Account balance has increased by 2.9% to reach $36 million as at 31 March 2021 and the tax credit (CRA refundable tax) remained at $35 million over the period.

C.1.4 Interest Earnings/Rates of Return

The interest earnings in respect of the Superannuation Account were calculated using the foregoing entries. The Account yields are based on book values since the notional bonds are deemed to be held to maturity. The result was computed using the dollar-weighted approach and assumes that cash flows occur in the middle of the plan year (except for actuarial liability adjustments, if any, which occur on 31 March). The Pension Fund rates of return are from the Public Sector Pension Investment Board (PSPIB) Annual Reports.

Table 26 Interest Earnings/Rates of Return

Plan Year	Superannuation Account	Pension Fund [1]
2019	4.0%	7.1%
2020	3.8%	(0.6%)
2021	3.5%	18.4%

C.2 Sources of Asset and Accounts Data

The RCMP Superannuation Account, RCA Account and RCMP Pension Fund entries shown in C.1 above were taken from the Public Accounts of Canada and the financial statements of the Public Sector Pension Investment Board.

[1] Net of all expenses.

Appendix D — Membership Data

D.1 Sources and Validation of Membership Data

The individual data in respect of contributors, pensioners, and eligible survivors were provided as at 31 March 2021. The data are extracted from master computer files maintained by the Public Services and Procurement Canada (PSPC). PSPC also provided a listing of pension benefits paid in March 2021 for each pensioner and eligible survivor.

For validation and comparison purposes, individual salaries as at 31 March 2021 were provided by the RCMP Pension Accounting Unit for each active contributor as at that date.

Various tests of 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, sex, etc.), pensionable service, salary levels and pensions to retirees and survivors were performed. Based on the omissions and discrepancies identified by these tests, and after consulting with PSPC and the RCMP, appropriate adjustments were made to the membership data.

D.2 Summary of Membership Data

A summary of the valuation data as at 31 March 2021 and the reconciliation of contributors, pensioners, and survivors from 31 March 2018 to at 31 March 2021 are shown in this section. Relevant detailed statistics on contributors, pensioners and survivors are shown in Appendix K .

Table 27 Summary of Membership Data

	As at 31 March 2021	As at 31 March 2018
Contributors		
Number	22,269	22,474
Average Pensionable Earnings	110,200 [1]	$94,800 [2]
Average Age	42.2	41.5
Average Pensionable Service	13.9	13.3
Retirement Pensioners in Pay		
Number	15,311	14,997
Average Annual Pension in Pay	$51,300	$49,000
Average Age	69.8	68.1
Deferred Pensioners		
Number	515	419
Average Annual Deferred Pension	$14,000	$13,600
Average Age	44.2	43.5
Disability Pensioners		
Number	3,841	3,016
Average Annual Pension	$40,100	$36,900
Average Age	59.0	59.5
Eligible Surviving Spouse		
Number	3,003	2,646
Average Annual Pension	$23,200	$21,200
Average Age	74.8	73.3
Eligible Surviving Children		
Number	134	144
Average Annual Pension	$3,200	$2,900

1 Includes all known economic increases up to plan year 2021.
2 Includes assumed economic increases of 2.0% for plan year 2017 for Regular Members but excludes assumed economic increases of 2.0% for plan year 2018 for both Regular and Civilian Members that were still to be negotiated.

Table 28 Reconciliation of Membership

	Contributors	Retirement Pensioners in Pay	Deferred Pensioners	Disability Pensioners	Surviving Spouses	Surviving Children
As at 31 March 2018	22,474	14,997	419	3,016	2,646	144
Data corrections	(3)	44	2	(50)	(11)	10
New members	2,565	-	-	-	-	-
Rehired pensioners	13	(1)	(9)	(3)	-	-
Withdrawal - lump sums	(519)	-	(41)	-	-	-
Deferred annuities	(173)	-	173	-	-	-
Pensionable disabilities	(957)	-	(3)	960	-	-
Pensionable retirements	(1,088)	1,114	(26)	-	-	-
Emerging survivors	-	-	-	-	653	53
Deaths	(43)	(843)	-	(82)	(285)	-
Termination of benefits	-	-	-	-	-	(73)
As at 31 March 2021	22,269	15,311	515	3,841	3,003	134

Table 29 Reconciliation of Contributors

	Regular Members		Civilian Members		
	Male	Female	Male	Female	Total
As at 31 March 2018	14,759	4,061	1,762	1,892	22,474
Data corrections	16	19	(17)	(21)	(3)
New members	1,980	581	1	3	2,565
Rehired pensioners	8	4	-	1	13
Withdrawal - lump sums	(352)	(86)	(27)	(54)	(519)
Deferred annuities	(84)	(19)	(30)	(40)	(173)
Pensionable disabilities	(565)	(230)	(41)	(121)	(957)
Pensionable retirements	(732)	(150)	(109)	(97)	(1,088)
Deaths	(30)	(5)	(6)	(2)	(43)
As at 31 March 2021	15,000	4,175	1,533	1,561	22,269

Table 30 Reconciliation of Retirement Pensioners in Pay

	Former Regular Members		Former Civilian Members		
	Male	Female	Male	Female	Total
As at 31 March 2018	12,783	698	874	642	14,997
Data corrections	51	(16)	3	6	44
Rehired pensioners	-	(1)	-	-	(1)
New pensioners	741	151	112	110	1,114
Deaths	(755)	(16)	(45)	(27)	(843)
As at 31 March 2021	12,820	816	944	731	15,311

Table 31 Reconciliation of Disability Pensioners

	Former Regular Members		Former Civilian Members		
	Male	Female	Male	Female	Total
As at 31 March 2018	2,022	547	125	322	3,016
Data corrections	(62)	19	1	(8)	(50)
Rehired pensioners	(1)	(1)	-	(1)	(3)
New pensioners	566	230	43	121	960
Deaths	(64)	(4)	(7)	(7)	(82)
As at 31 March 2021	2,461	791	162	427	3,841

Table 32 Reconciliation of Deferred Pensioners

	Former Regular Members		Former Civilian Members		
	Male	Female	Male	Female	Total
As at 31 March 2018	167	50	77	125	419
Data corrections	1	2	-	(1)	2
Rehired pensioners	(7)	(2)	-	-	(9)
Lump sums (previously deferred)	(27)	(5)	(3)	(6)	(41)
Deferred annuities	84	19	30	40	173
Pensionable disabilities	(1)	-	(2)	-	(3)
New pensioners	(9)	(1)	(3)	(13)	(26)
Deaths	-	-	-	-	-
As at 31 March 2021	208	63	99	145	515

Appendix E — RCMPSA Valuation Methodology

E.1 Pension Assets and Accounts

E.1.1 RCMP Superannuation Account (Service prior to 1 April 2000)

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

The only other Superannuation Account-related amount consists of the discounted value of future member contributions and government costs in respect of prior service elections. The discounted value of future member contributions was calculated using the projected Account yields. The government cost is assumed to be equal to these future contributions.

E.1.2 RCMP Pension Fund (Service since 1 April 2000)

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. As a result, the actuarial value of assets is a five-year smoothed market value where the investment gains or losses are recognized at the rate of 20% per year subject to a 10% corridor to 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 other Pension Fund-related assets consist of the discounted value of future member and government contributions in respect of prior service elections and receivable contributions on the retroactive salary increases following the signature of the collective agreement in force for the period from 1 April 2017 to 31 March 2023. The discounted value of future member contributions was calculated using the assumed rates of return on the Pension Fund. The government is assumed to contribute in the same proportion as for the RCMPSA current service cost.

The actuarial value of the assets, determined as at 31 March 2021, under the adjusted market value method is $13,802 million and was determined as follows:

Table 33 Actuarial Value of Pension Fund Assets [1]
($ millions)

Plan Year	2017	2018	2019	2020	2021	Total
Actual net investment return (A)	1,101	980	803	(76)	2,273	
Expected investment return (B)	396	499	594	624	653	
Investment gains (losses) (C = A - B)	705	481	209	(700)	1,620	
Unrecognized percentage (D)	0%	20%	40%	60%	80%	
Unrecognized investment gains (losses) (C x D)[2]	-	96	84	(420)	1,296	1,056
Market value as at 31 March 2021						14,681
Less						
Total Unrecognized investment gains (losses)						1,056
Actuarial value as at 31 March 2021 (before application of corridor)						13,625
Impact of application of corridor[3]						-
Actuarial value as at 31 March 2021 (after application of corridor)						13,625
Plus						
Receivable Contributions						164
Present value of prior service contributions						13
Actuarial value as at 31 March 2021						13,802

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 valuations, 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 average 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 RCMPSA and those payable under the RCA.

E.2.1 Current Service Cost

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

1 Numbers may not add up due to rounding.
2 The impact of previous applications of the corridor is not taken into account in this calculation.
3 The corridor is 90% - 110% of market value, that is ($13,213 - $16,149).

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, service and gender distribution of the total population remain constant.

For a given year, the government current service cost is the total current service cost reduced by the members' contributions during the year. Future members' contribution rates are assumed to be equal to the contribution rates of Group 1 contributors under the PS pension plan; they are estimates only and subject to change. More information on the methodology used to determine the rates assumed under the PS pension plan can be found in the Actuarial Report on the Pension Plan for the Public Service of Canada as at 31 March 2020.

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.

Amounts paid from 1 April 2021 onward for terminations that occurred prior to that date were estimated from actual payments made using information provided in the valuation data at 31 March 2021. For this valuation, a total of $26 million was added to the liability for the Pension Fund.

Another adjustment was made to the liability to account for the retroactive pension and lumpsum payments adjustments due to the retroactive salary increases since April 1, 2017. Provisions of $1 million and $8 million were added to the liability for the Superannuation Account and the Pension Fund respectively.

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.

E.2.4 Age and Service Determination

In the previous valuation, the Age Last methodology was applied to determine ages and services used for eligibility and decrements. Under this approach, age is the age at the most recent birthday and service is based on the member's completed years of pensionable service.

In this valuation, the Age Nearest methodology is applied; age and service are determined by rounding the exact value to the nearest integer.

The change from Age Last to Age Nearest methodology mainly affects the timing of benefit eligibility and application of age and/or service-dependent decrements.

Appendix F — RCMPSA Economic Assumptions

As per the Funding Policy, all economic assumptions used in this report are best-estimate assumptions, i.e., they reflect our best judgement of the future long-term experience of the plan and do not include margins. The current conflict in Ukraine, notably the escalation in the conflict as of 24 February 2022, is considered to be a subsequent event for the purpose of this valuation. As such, this event was not taken into account while developing the assumptions for the purpose of this valuation report.

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 renewed their commitment to keep inflation between 1% and 3% with a target at the mid-point of 2% until the end of 2026[1]. The Bank of Canada renewed its monetary policy framework in 2021 and came up with new Canada's flexible inflation-targeting framework for 2022 to 2026. Based on economic forecasts as of January 2022, the CPI is expected to increase at a rate 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 this report, it is assumed that the level of inflation will decrease from 4.4% in plan year 2022 to 3.5% in plan year 2023 and 2.4% in plan year 2024. The ultimate rate of 2.0% is reached in 2027, it is unchanged from the assumed rate in the previous valuation.

F.1.2 Increase in Pension Amounts

The assumption related to increase in pension amounts is required to account for indexation of pensions every 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[2] is calculated based on the YMPE, an assumption for the increase in the YMPE is required. The assumed increase in the YMPE for a given calendar year is derived, in accordance with the *Canada Pension Plan*, to correspond to 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 $64,900 for calendar year 2022. It increased by 5.4% compared to 2021,

1 https://www.bankofcanada.ca/2021/12/joint-statement-of-the-government-of-canada-and-the-bank-of-canada-on-the-renewal-of-the-monetary-policy-framework/

2 Or becomes entitled to a disability pension from the CPP or the QPP.

which is the largest increase in the YMPE since the early 1990s. It is assumed that the 2023 YMPE will increase by 3.3%. Subsequent increases in the YMPE are assumed to be lower, as it is assumed that employment levels for lower wage earners gradually increase over time. Future increases in the YMPE correspond to the assumed real[1] 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. After the initial disruption due to COVID-19, it is assumed to gradually converge to the ultimate assumption of 0.9% by 2026 (1.0% in the previous valuation). The ultimate real-wage differential assumption combined with the ultimate price increase assumption results in an assumed annual increase in nominal wages of 2.9% in 2026 and thereafter. Thus, the ultimate rate of increase for the YMPE is 2.9%.

F.2.2 Economic 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 seperate from the seniority and promotional increase which is accounted for in the demographic assumptions. The economic increases in pensionable earnings up to plan year 2023 are based on the current collective agreements. Subsequent increases are assumed to gradually converge to the ultimate level in 2027. The ultimate annual increase in pensionable earnings is assumed to be 0.6% higher than the corresponding increase in CPI. This corresponds to an ultimate rate of 2.6% in 2027 and thereafter (2.7% in the previous valuation for plan year 2026 and thereafter).

F.2.3 Increase in Maximum Pensionable Earnings (MPE)

The maximum annual pension accrual of $3,245.56 for 2021 will increase to $3,420.00 for 2022, in accordance with *Income Tax Regulations*. 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 $191,300 for calendar year 2022.

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 real yield on long-term Canadian

[1] 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 3.8% (derived from 1.059/1.020) rather than 3.9%.

federal bonds as at 31 March 2021 is set at -2.50% and is assumed to gradually increase to reach 2.0% by 2033 and remain at that level.

The annual nominal yield on 10-year-plus federal bonds is assumed to be 1.9% in plan year 2022. Then it is projected to increase gradually to its ultimate level of 4.0% in plan year 2033. The assumed rates over the short-term (2022-2026) are consistent with the average of private sector forecasts and take into account the recent market conditions as of 31 March 2022. The ultimate level of 4.0% is equivalent to an ultimate real rate of 2.0%. The ultimate real yield was assumed to be 2.6% in 2030 in the previous valuation. The assumed real new money rates over the plan years 2022 to 2033 are on average 0.9% lower 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 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,

taking into account that 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 3.3% in plan year 2022. It is projected to reach a low of 2.5% in 2031 and to reach its ultimate value of 4.0% in 2047.

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 and Asset Mix

Since 1 April 2000, government and employee contributions, net of benefit payments and administrative expenses, are invested in capital markets by the Public Sector Pension Investment Board (PSPIB). PSPIB's mandate is to achieve a maximum rate of return, without undue risk of

loss, with regard to the funding, policies and requirements of the PSPP. PSPIB's 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 PSPIB, which then uses this portfolio as an anchor for its investment policy.

For the purpose of this report and in line with the PSPIB 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 2021, PSPIB's assets consisted of 21% fixed income securities (including 3% cash), 45% equity (including 0.1% complementary investments), 27% real assets and 7% credit. PSPIB has developed a long-term target Policy Portfolio (approved by its Board of Directors in the fall of 2021 and subject to an annual review), which consists of 21% fixed income securities, 39% 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 PSPIB as at 31 March 2021) will gradually converge towards the long-term target Policy Portfolio. The ultimate asset mix is assumed to be reached in plan year 2024.

Net cash flows (contributions less expenditures, excluding special payments, if any) are expected to become negative during plan year 2032 at which point a portion of investment income will be required to pay benefits. Changes to the assumed asset mix may be required in the future to reduce funding risks and to take into account the maturity of the plan.

Table 34 presents the assumed asset mix for each plan year throughout the projection period.

Table 34 Asset Mix
(in percentage)

Plan Year	Fixed Income Securities[1]	Cash	Public Equity	Private Equity	Real Assets	Credit
2022	18	3	29	16	27	7
2023	18	2	28	13	30	9
2024+	19	2	27	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

[1] For presentation purposes, PSPIB includes real return bonds as part of real return assets. However, for the purpose of this report, real return bonds are allocated to fixed income securities.

securities' rates of return reflects the current context of low yields and the general outlook that yields will remain low for a few years and slowly increase thereafter. A constant rate of return is assumed for more volatile asset classes, reflecting the difficulty to predict annual market returns.

The long-term rates of return were developed by looking at historical returns (expressed in Canadian dollars) and not taking into account any subsequent events; 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 were 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. Details are presented in section F.3.3.4.

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

Cash

The real yield on cash is expected to be negative over the first years of the projection period, particularly in plan year 2022 and 2023 as a result of higher expected inflation. Yield on cash, which is currently near-zero (in nominal terms) due to central banks' response to the pandemic, is expected to gradually increase over time. The real yield on cash is expected to reach 0.5% in plan year 2032.

Fixed Income Securities

As at 31 March 2021, PSPIB had 21% 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 will remain at the level of 21% over the projection period.

As per the information communicated by PSPIB, the allocation to Canadian fixed income is expected to change, going from 12% as at 31 March 2021 to a target allocation of 7% in plan year 2023. Cash allocation is expected to decrease from 3% to 2% and the allocation to emerging market debt is expected to reach 5%. Consequently, the fixed income securities' ultimate mix (excluding cash) in plan year 2023 and thereafter is expected to consist of 18% federal bonds, 19% provincial bonds, 37% US TIPS and 26% emerging market debt, which reflects PSPIB's long-term target allocation.

As described in subsection F.3.1 above, the assumed real yield on 10-year-plus federal bonds is expected to be negative for plan year 2022 and 2023, then increase gradually to its ultimate level of 2% in plan year 2033. Compared to cash, the yield on 10-year-plus federal bond is 181 basis points higher at the valuation date. The spread is assumed to reach 150 basis points in 2033.

Since the current PSPIB Policy Portfolio and its long-term target Policy Portfolio are composed of universe bonds (long, mid and short terms), 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 decrease from 103 basis points in plan year 2021 to 82 basis points in plan year 2033.

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 195 basis points while the ultimate spread is assumed to be 168 basis points (in plan year 2033). The initial spread of emerging market debt over cash is assumed to be 293 basis points and the ultimate spread is assumed to decrease to 272 basis points in plan year 2034. Inflation-linked bonds offer protection against inflation, which tend to lower spread versus cash. The initial spread of inflation-linked bonds (US TIPS) over cash is assumed to be 147 basis points and is expected to decrease to 110 basis points in plan year 2033.

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. The real yield on 10-year-plus federal bonds is assumed to be negative for plan year 2022 and 2023, then gradually increase between plan years 2024 and 2033. Consequently, bond returns are quite low for the plan years prior to 2033. The assumed ultimate real rate of return for 10-year-plus federal bonds is 2.0% starting in plan year 2033. An ultimate fixed income real rate of return of 2.1% is assumed for 2033 and thereafter.

Equity

Currently, forty-three percent 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 PSPIB's 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 return on public equities, based on PSPIB's relative allocation to developed market, small caps and emerging market equities, is projected to be 4.3%.

The expected 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

Real assets such as real estate, infrastructure, and natural resources are considered to share some characteristics of fixed income and equities, as well as to have some unique features related to their specific nature (such as illiquidity). The expected real rate of return on real assets is thus influenced by these features. Considering the inherent difficulties in modelling short-term returns for volatile assets, real assets are projected to earn 3.8% throughout the projection period.

Credit

Currently, eight percent of the assets of the Pension Fund are invested in credit. Based on the information received, PSPIB exposure to this asset class is made through High yield US treasury bonds. It is assumed that the return on credit would yield 250bps[1] above Canadian federal universe bonds (1.3%) adjusted to U.S. market (-10bps). Thus, Credit is projected to earn 3.7% throughout the projection period.

Summary of Real Rate of Return by Asset Class

In Table 35, The real rates of return by asset type are presented without any allowance for rebalancing and diversification. The rebalancing and diversification allowance is presented at the portfolio level in Table 36.

It is important to recognize that rates of return for most assets are volatile. The real rates of return presented in the following table represent expected trends and assumed levels of returns to be obtained over a long horizon. As such, limited emphasis should be put on individual projection years.

This report considers the escalation of the conflict in Ukraine as a subsequent event. Therefore, its impacts are not reflected in this valuation.

[1] bps means 1/100th of 1%.

Table 35 Real Rate of Return by Asset Class
(in percentage)

Plan Year	Fixed Income Securities	Cash	Public Equity	Private Equity	Real Assets	Credit
2022	(7.4)	(4.3)	4.3	5.0	3.8	3.7
2023	(3.6)	(2.9)	4.3	5.0	3.8	3.7
2024	(1.2)	(0.7)	4.3	5.0	3.8	3.7
2025	(0.1)	(0.1)	4.3	5.0	3.8	3.7
2026	-	0.1	4.3	5.0	3.8	3.7
2027	0.9	0.2	4.3	5.0	3.8	3.7
2028	1.1	0.3	4.3	5.0	3.8	3.7
2029	0.3	0.3	4.3	5.0	3.8	3.7
2030	1.0	0.4	4.3	5.0	3.8	3.7
2031	1.6	0.4	4.3	5.0	3.8	3.7
2032	1.6	0.5	4.3	5.0	3.8	3.7
2033+	2.1	0.5	4.3	5.0	3.8	3.7

F.3.3.3 Investment Expenses

Over the last three plan years, PSPIB's operating and asset management expenses averaged 0.7% of average net assets. It is assumed that going forward, PSPIB 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. For the purpose of this valuation and in accordance with the Canadian Institute of Actuaries' guidance, it is assumed that additional returns generated by active management will equal additional expenses incurred from active management. These expenses are assumed to be the difference between total investment expenses of 0.7% and the assumed expenses of 0.2%[1] 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 diversificiation, and reduced to reflect all investment expenses.

[1] The unrounded assumed expenses assumption is 0.18%. The rounding has no impact on the total portfolio long term expected return.

Table 36 shows how the ultimate nominal and real rates of return are developed.

Table 36 Overall Rate of Return on Assets of the Pension Fund

	Nominal	Real
Weighted average rate of return	5.6%	3.6%
Additional returns due to active management	0.5%	0.5%
Allowance for rebalancing and diversification[1]	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%)
Net rate of return	5.9%	3.9%

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

Table 37 Rates of Return on Assets in Respect of the Pension Fund
(in percentage)

Plan Year	Nominal	Real
2022	6.5	2.1
2023	6.4	2.9
2024	5.7	3.3
2025	5.7	3.5
2026	5.6	3.5
2027	5.7	3.7
2028	5.7	3.7
2029	5.6	3.6
2030	5.7	3.7
2031	5.8	3.8
2032	5.8	3.8
2033+	5.9	3.9
2022-2026	6.0	3.1
2022-2031	5.8	3.4
2022-2033	5.8	3.5
2022-2041	5.9	3.6

It is assumed that the ultimate real rate of return on investments will be 3.9% in 2033 , net of all investment expenses. This represents a reduction of 0.1% from the previous valuation. The real rates of return over the first ten years of the projection are on average 0.3% lower 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.

[1] 0.45% before rounding.

Using the variable nominal rates of return on assets shown in previous table is equivalent to using a flat nominal discount rate of 5.9% for purpose of calculating the liability as at 31 March 2021 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. In particular, the nominal interest rates for the computation of commuted values as at a particular date are as follows:

First 10 years: $i_7 + s_{1-10}$

After 10 years: $i_L + 0.5 \times (i_L - i_7) + s_{10+}$

Both rates for the first 10 years and after 10 years can't however be less than zero.

Implied increase in CPI is then determined as follows:

First 10 years: $(1 + i_7)/(1 + r_7) - 1$

After 10 years $(1 + i_L + 0.5 * (i_L - i_7))/(1 + r_L + 0.5 * (r_L - r_7)) - 1$

Where $r_7 = (1 + r_L) \times \left(\frac{1+i_7}{1+i_L}\right) - 1$, and

r_L is the long-term real-return Government of Canada bond yield, annualized,

i_L is the long-term Government of Canada benchmark bond yield, annualized,

i_7 is the 7-year Government of Canada benchmark bond yield, annualized,.

s_{1-10} is a weighted average of mid-term provincial and corporate spreads over mid-term federal bonds, with two third of the weight on the provincial spread and one third on the corporate spread, annualized, and

s_{10+} is a weighted average of long-term provincial and corporate spreads over long-term federal bonds, with two third of the weight on the provincial spread and one third on the corporate spread, annualized.

Real interest rates are obtained by adjusting the nominal interest rates with the implied increase in CPI.

The obtained rates of interest are rounded to the nearest multiple of 0.10%.

More details regarding the Standards of Practice can be found in the Section 3540 of the following paper: https://www.cia-ica.ca/docs/default-source/standards/sp020122e.pdf

For example, for plan year 2023, the assumed real interest rates are 0.7% for the first 10 years and 2.0% thereafter. The rates are derived from the assumed CPI increase, the assumed 10-year-plus Government of Canada benchmark bond yield which corresponds to the new money rate in this valuation and the assumed spreads[1] between the new money rate and the long-term real-return Government of Canada bond yield, the long-term Government of Canada benchmark bond yield and the 7-year Government of Canada benchmark bond yield.

Table 38 shows the assumed transfer value real interest rates used in this report:

Table 38 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
2022[2]	0.2	1.9	1.4	-0.4	0.8	1.4
2023	0.7	2.5	1.9	0.1	0.7	2.0
2024	1.0	2.9	2.3	0.5	1.1	2.4
2025	1.3	3.1	2.5	0.7	1.3	2.5
2026	1.4	3.3	2.7	0.8	1.4	2.6
2027	1.5	3.4	2.9	1.0	1.6	2.8
2028	1.6	3.5	3.0	1.1	1.7	2.9
2029	1.6	3.6	3.1	1.1	1.8	2.8
2030	1.8	3.8	3.3	1.3	1.9	3.0
2031	1.9	3.9	3.4	1.4	2.1	3.1
2032	1.9	3.9	3.5	1.5	2.1	3.2
2033+	2.0	4.0	3.5	1.5	2.2	3.1

[1] The spreads for the first year are based on the average spreads for plan year 2022 of -176, 5 and -52 basis points (bps) between 10-year-plus Government of Canada bond yield and the bonds underlying r_L, i_L and i_7 respectively. The ultimate spreads of - 201, 0 and -45 bps (starting in plan year 2033) are based on the average spreads over the last 10 years. The spreads for $S_{1\text{-}10}$ and S_{10+} are assumed to be 61 and 105 bps respectively for the first year, 65 and 99 bps ultimate. An interpolation reflecting the variation in new money rates is applied for intermediate years.

[2] Monthly real interest rates for plan year 2022 are available. As such, both short-term and long-term real interest rates for plan year 2022 are the average of the respective 12 month actual rates.

F.3.4.1 Administrative Expenses

PSPIB 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.

Assumed administrative expenses remain at 0.45% of pensionable payroll. For plan year 2022, the Account is assumed to be charged with 54% of total expenses reducing, by 1.5% each year thereafter. 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.3.5 Summary of Economic Assumptions

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

Table 39 Economic Assumptions[1]
(As a percentage)

	Inflation		Employment Earning Increases			Interest		
Plan Year	CPI Increase[2]	Pension Indexation[3]	YMPE[3]	Average Pensionable Earnings[4,5]	Maximum Pensionable Earnings[3,6]	New Money Rate	Projected Yield on Account	Projected Return on Fund
2022	**4.4**	**2.4**	**5.4**	**3.3/2.5/1.5**	**5.4**	1.9	3.3	6.5
2023	3.5	4.8	3.3	**4.1/4.5/2.8**	3.3	2.5	3.2	6.4
2024	2.4	2.2	3.1	2.8	3.1	2.8	3.1	5.7
2025	2.2	2.1	3.0	2.8	3.0	3.1	3.0	5.7
2026	2.1	2.2	2.9	2.7	2.9	3.2	2.9	5.6
2027	2.0	2.0	2.9	2.6	2.9	3.4	2.8	5.7
2028	2.0	2.0	2.9	2.6	2.9	3.5	2.7	5.7
2029	2.0	2.0	2.9	2.6	2.9	3.6	2.7	5.6
2030	2.0	2.0	2.9	2.6	2.9	3.8	2.6	5.7
2031	2.0	2.0	2.9	2.6	2.9	3.9	2.5	5.8
2032	2.0	2.0	2.9	2.6	2.9	3.9	2.5	5.8
2033	2.0	2.0	2.9	2.6	2.9	4.0	2.5	5.9
2035	2.0	2.0	2.9	2.6	2.9	4.0	2.5	5.9
2040	2.0	2.0	2.9	2.6	2.9	4.0	3.1	5.9
2045	2.0	2.0	2.9	2.6	2.9	4.0	3.9	5.9
2048+	2.0	2.0	2.9	2.6	2.9	4.0	4.0	5.9

1 Bold figures denote actual experience.
2 Assumed to be effective during Plan Year.
3 Assumed to be effective as at 1 January.
4 Assumed to be effective as at 1 April. Exclusive of seniority and promotional increases.
5 Economic increases in pensionable earnings for plan years 2022 and 2023 reflect the most recent agreements for regular non-commissioned, regular commissioned and civilian members in that order.
6 Calendar year 2022 Maximum Pensionable Earnings is $191,300.

Appendix G — RCMPSA Demographic Assumptions

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

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

The demographic assumptions in the previous report were based on the members' completed years of pensionable service, age at most recent birthday, or both. In this valuation, members age and service are determined by rounding the exact value to the nearest integer. Previous assumptions were converted to reflect this change of methodology.

All references to assumptions from the previous valuation in this section refer to assumptions converted to Age Nearest basis.

G.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 was developed by giving equal credibility to the plan's experience over the last three plan years and the assumption from the previous valuation.

The assumption for regular members recognizes the increases applicable at the entry level rank for Constables in the first four years of service, the Service Pay Allowance of 1.5% granted at durations 4, 10, 15, 20, 25, 30 and at duration 35, and the 5% Senior Constable Provisional Allowance granted after seven completed years of service.

The assumption for Civilian Members is on average 0.2% lower than assumed in the previous valuation.

Table 40 Sample of Assumed Seniority and Promotional Salary Increases
(Percentage of annual earnings)

Years of Service	Regular Members	Civilian Members
0	40.0[1]	4.6
1	7.6	4.3
2	6.5	3.7
3	5.0	2.8
5	0.2	2.0
10	1.4	1.4
15	1.6	1.2
20	1.9	1.1
25	1.6	1.0
30	1.7	0.7

G.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 proportion of female Regular Members joining the Plan currently is assumed to remain constant at around 22%. This proportion is in line with both the current representation of female Regular Members and the recent distribution of new contributors. As a result of the planned transfer of active Civilian Members to the PS pension plan, it is assumed that no new Civilian Members will be joining the RCMP pension plan in the future.

The assumed percentage increase in the number of contributors for each plan year is shown in Table 41.

Table 41 Assumed Annual Increases in Number of Contributors (both genders)
(Percentage)

Plan Year	Regular Members
2022	(0.26)
2023	2.80
2024	2.80
2025	1.40
2026	1.20
2030	1.10
2032	0.80
2033+	0.80

The new contributor assumption was changed from the previous valuation. As demographic

[1] The 40% increase applicable in the first year reflects the negotiated salary increases for Constables after 6 and 12 months of service. The change from the 23 % assumption in the previous report follows from the change in methodology from age last to age neareast basis and has no impact on the valuation results.

characteristics at entry and qualifications are constantly evolving, short-term experience was deemed a better approach to determine the demographics of new entrants. The age distribution of new Regular Members is based on the distribution of actual new contributors during the intervaluation period. Most new Regular Members (98% of new members) are assumed to be hired at the entry level rank for Constables. Their initial pensionable earnings for plan year 2022 is therefore assumed to be $63,210[1]. The initial pensionable earnings for the remaining new contributors is $119,728 to reflect that not all new employees are hired at the entry level rank for Constables. The initial pensionable earnings is assumed to increase in future plan years in accordance with the assumption for pensionable earnings increases.

G.3 Pensionable Retirement

As in the previous valuations, assumed rates of pensionable retirement for Regular Members were updated for this valuation.

Analysis of past experience shows that Regular Members have been delaying retirement[2]. Since 2012, the data shows that this trend continues, but with less service in the force at retirement[3]. This could be linked to the fact that members are being hired at higher ages.

Based on the intervaluation experience, pensionable retirement rates were adjusted to reflect fewer retirements before age 50 and slightly more between ages 50 and 55. Furthermore, rates for ages 59 and above have been decreased.

Table 42 Sample of Assumed Rates of Pensionable Retirement – Regular Members
(Per 1,000 individuals)

Age Nearest Birthday[4]	Years of Service in the Force						
	19	20	23	25	30	33	35+
40	5	5	5	5	5	5	250
45	5	5	5	25	25	80	250
50	10	10	10	50	100	130	250
55	10	50	21	100	150	180	250
60	100	150	150	150	200	200	250
65	1,000	1,000	1,000	1,000	1,000	1,000	1,000

The retirement incidence during the intervaluation period for Civilian Members was much lower than expected. As a result, pensionable retirement rates were reduced at almost all ages but more significantly for ages above 60.

1 Salary at entry level rank for Constables at 1 April 2021.
2 From 2002 to 2012, the average age at retirement increased from 51.5 to 55.3 (and the average service in the force increased from 29.7 to 32.0).
3 From 2012 to 2021, the average age at retirement increased 55.3 to 56.0, and the average service in the force decreased by 1.4 years from 32.0 to 30.6.
4 Expressed in rounded years calculated at the beginning of the plan year.

Table 43 Sample of Assumed Rates of Pensionable Retirement – Civilian Members
(Per 1,000 individuals)

Age Nearest Birthday[1]	Years of Pensionable Service							
	2	5	10	15	20	25	30	35+
50	5	5	5	5	10	10	20	400
55	10	10	10	10	20	20	250	400
60	100	100	100	200	300	400	400	500
65	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

G.4 Disability Retirement

To reflect the intervaluation experience, disability retirement rates for male and female Regular Members were slightly increased before age 50 and were decreased for ages between 50 and 60.

Similar to the previous valuation, the disability retirement rates for Civilian Members are determined using an equal weighted blend between disability rates for Regular Members from this report and disability rates from the most recent Actuarial Report on the Pension Plan for the Public Service of Canada as at 31 March 2020.

In the previous valuation, disability retirement rates were assumed to be nil for ages between 60 and 65. However, experience suggests that both Regular Members and Civilian Members do retire for cause of disability in a significant proportion at these ages. This modification in the disability retirement rates assumption is however offset by the decrease in pensionable retirement rates between ages 60 and 65 mentioned in the previous section.

Based on experience since 2015, it is assumed that 30% of future new disability pensioners will receive a CPP/QPP disability pension. In the previous valuation, 15% of Regular Members and 75% Civilian Members were assumed to receive a CPP/QPP disability pension.

Table 44 Sample of Assumed Rates of Pensionable Disability
(Per 1,000 individuals)

Age Nearest Birthday	Regular Members		Civilian Members	
	Male	Female	Male	Female
30	1.0	3.0	0.60	1.60
40	4.0	10.0	2.40	5.90
50	18.0	37.5	10.20	21.20
59	57.0	81.0	31.00	59.20

Both deferred pensioners and pensioners receiving an annual allowance while under age 60 are assumed to have a 0% disability rate. Furthermore, no recoveries are assumed for disability pensioners

G.5 Withdrawal

Withdrawal means ceasing to be employed for reasons other than death or retirement with an immediate annuity or an annual allowance. A contributor with at least two years of service upon termination can opt for a deferred annuity payable commencing at age 60 or for the commuted value of such a deferred annuity.

Based on the intervaluation experience, there were significantly more withdrawals than expected for both Regular and Civilian Members at almost all service durations. The withdrawal rates for this valuation were therefore increased compared to the previous valuation's rates. Furthermore, Regular Members tend to terminate in the year preceding their 20th year of service. This trend has been observed since 2015. The withdrawal rates for Regular Members with 19 years of service were therefore increased by an additional 1%.

Table 45 Sample of Assumed Withdrawal Rates
(Per 1,000 individuals)

Years of Service	Regular Members	Civilian Members
0	25	30
1	25	28
5	10	24
10	6	18
15	5	8
19	15	2
20	5	1
21+	-	-

G.6 Proportion of Terminating Contributor Opting for a Deferred Annuity

In the previous valuation, 40% of all contributors who terminated with at least five years of service were assumed to choose the deferred annuity option. Based on the experience from the intervaluation period, the proportion of terminating members electing a deferred annuity option was revised to 25% for Regular Members and 45% for Civilian Members who terminated with at least 2 years of service. The other contributors who withdraw are assumed to opt for the commuted value of the deferred annuity.

G.7 Mortality

The intervaluation mortality experience did not suggest higher than expected deaths in the plan year 2021 due to the COVID-19 pandemic. As such, future mortality rates were not adjusted to account for increased mortality.

The mortality rates for the healthy male Regular Members were adjusted by applying 50% credibility to the intervaluation experience and 50% to the previous rates. However, due to low credibility at higher ages, mortality rates for ages beyond 85 are those for the general population taken from the 30th Actuarial Report on the Canada Pension Plan (CPP30).

Mortality rates for healthy female Regular Members are based on the combined (public and private) 2014 Canadian Pensioners Mortality Table (CPM2014) published by the Canadian Institute of Actuaries, projected with CPM Improvement Scale B (CPM-B).

Mortality rates for healthy Civilian Members and surviving spouses are assumed to be the same as those used in the 19th Actuarial Report on the PS pension plan (PSSA20)[1].

Table 46 Sample of Assumed Rates of Mortality
For Plan Year 2022
(Per 1,000 individuals)

Age Nearest Birthday	Regular Members		Civilian Members		Surviving Spouses	
	Male	Female	Male	Female	Male	Female
30	0.3	0.3	0.3	0.2	0.0	0.0
40	0.6	0.6	0.4	0.4	0.0	0.0
50	1.0	1.2	1.1	0.9	0.0	0.0
60	3.5	3.2	3.8	2.7	8.4	5.1
70	11.0	8.0	11.6	9.3	17.2	13.4
80	40.0	24.5	39.1	28.1	55.2	36.0
90	134.5	97.0	139.4	112.0	148.4	110.1
100	331.6	315.2	355.9	320.9	362.6	302.6
110	558.0	526.6	499.9	499.8	499.9	499.8

Based on the intervaluation experience, there were fewer deaths than expected for disabled male Regular Members. As such, the mortality rates were determined as a blend[2] of 75% of the mortality rates for healthy male Regular Member and 25% of the mortality rates for disabled pensioners assumed in the PSSA20 report.

Due to the small size of the disabled female Regular Members group, there was no credible experience for their mortality rates. In order to reflect generally higher expected mortality rates of disabled members, mortality rates for disabled female Regular Members are assumed to be a blend of 75% of the mortality rates for healthy female Regular Member and 25% of the mortality rates for disabled pensioners assumed in the PSSA20 report.

Mortality rates for disabled Civilian Members are the same as those used in the PSSA20 report.

1 More information on the basis to develop the mortality rates for the PS pension plan can be found in the Actuarial Report on the Pension Plan for the Public Service of Canada as at 31 March 2020.

2 This blend was 50/50 in the previous valuation.

Table 47 Sample of Assumed Rates of Mortality For Disabled Members
For Plan Year 2022
(Per 1,000 individuals)

Age Nearest Birthday	Regular Members		Civilian Members	
	Male	Female	Male	Female
30	1.6	0.8	5.6	2.3
40	3.0	1.5	10.1	4.4
50	3.3	3.0	10.1	8.4
60	7.5	5.3	19.6	11.7
70	17.1	11.8	35.4	23.4
80	49.5	32.3	77.7	55.5
90	146.9	109.8	183.2	148.4
100	351.8	341.5	409.9	420.5
110	544.0	519.9	499.9	499.8

Mortality rates are reduced in the future in accordance with the mortality improvement assumption of the CPP30 report[1]. Mortality improvement rates shown in the CPP30 report are based on calendar years. These rates have been interpolated to plan year basis.

A sample of assumed longevity improvement factors is shown in the following table.

Table 48 Sample of Assumed Longevity Improvement Factors
(applicable at the beginning of the plan year)

Age Nearest Birthday	Initial and Ultimate Plan Year Mortality Reductions (%)			
	Male		Female	
	2023	2036+	2023	2036+
30	1.06	0.80	0.62	0.80
40	1.47	0.80	1.34	0.80
50	1.40	0.80	0.96	0.80
60	2.00	0.80	1.54	0.80
70	1.90	0.80	1.40	0.80
80	1.91	0.80	1.41	0.80
90	1.71	0.65	1.56	0.65
100	0.59	0.29	0.63	0.29
110	0.03	0.01	0.03	0.01

[1] More information on the mortality improvement rates can be found in the 30th Actuarial Report of the Canada Pension Plan.

The following tables present the calculated life expectancy for Regular and Civilian healthy members based on the mortality assumptions, including longevity improvement factors, as described in this section.

Table 49 Cohort Life Expectancy of Healthy Regular Members
(Years)

	As at 31 March 2021		As at 31 March 2036	
Age Nearest	Male	Female	Male	Female
60	27.3	29.8	28.2	30.6
65	22.5	25.0	23.4	25.8
70	18.0	20.5	18.8	21.2
75	13.8	16.1	14.5	16.8
80	10.1	12.0	10.8	12.6
85	7.0	8.5	7.6	9.0
90	4.8	5.6	5.2	6.0

Table 50 Cohort Life Expectancy of Healthy Civilian Members
(Years)

	As at 31 March 2021		As at 31 March 2036	
Age Nearest	Male	Female	Male	Female
60	27.1	28.9	28.0	29.7
65	22.4	24.1	23.3	24.9
70	18.0	19.5	18.8	20.2
75	13.8	15.2	14.5	15.9
80	10.0	11.3	10.7	12.0
85	6.9	7.9	7.5	8.5
90	4.5	5.4	4.9	5.7

G.8 Family Composition

The probabilities of having an eligible spouse at death for male members before age 50 is the same as the previous valuation. The assumption for female members before age 50 was modified to be the same as the one used for males. The probabilities for members aged 50 and over were revised by giving 50% credibility to the intervaluation experience.

The surviving spouse of male and female members are assumed to be 3 years younger and 2 years older respectively. The gender of each eligible surviving spouse is assumed to be the opposite of the deceased member's gender. Furthermore, it is assumed that deceased members will have no eligible child survivors.

Table 51 Assumptions for Survivor Spouse Allowances[1]

Age Nearest Birthday	Male	Female
	Probability of an Eligible Spouse at Death of Member	Probability of an Eligible Spouse at Death of Member
30	0.70	0.70
40	0.85	0.85
50	0.85	0.85
60	0.80	0.55
70	0.80	0.40
80	0.68	0.29
90	0.48	0.06
100	0.20	0.00

For the purpose of the valuation, no future pension benefits divisions were assumed.

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

Appendix H — RCA Valuation Methodology and Assumptions

H.1 Account Balance

The amount in the RCA account is composed of the recorded balance in the RCA Account, which forms part of the Public Accounts of Canada, and a tax credit (CRA refundable tax).

Interest is credited 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 Royal Canadian Mounted Police pension plans. The actuarial value of the account is equal to the book value.

H.2 Actuarial Liability

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

H.2.1 RCA Post-Retirement Survivor Benefits

The limit on the amount of spousal annual allowance that can be provided under the RCMPSA decreases at the same time the member's pension is reduced due to the CPP coordination offset, which usually occurs at age 65.

This benefit was valued by assuming the plan limit is always reduced by the CPP coordination offset independent of age. 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 preretirement survivor benefit. The projected accrued benefit cost method was used to estimate the liability and current service cost for this RCA benefit.

H.2.2 Excess Pensionable Earnings

The projected accrued benefit cost method (described in detail in Appendix E.2) was used to estimate the liability and current service cost for retirement benefits in excess of the Maximum Pensionable Earnings.

H.2.3 Administrative Expenses

To compute the liability and current service cost, no provision was made regarding the expenses incurred for the administration of the RCA since these expenses are not debited from the RCA Account.

H.3 Actuarial Assumptions

The valuation economic assumptions are those described in Appendix F and shown in Table 39 without any modifications. This is the same approach used in the last valuation.

The demographic assumptions for the RCA valuation are the same as those used for the RCMPSA valuation as described in Appendix G .

H.4 Valuation Data

Pension benefits in payment to be debited from the RCA were provided as at 31 March 2021. Details on the RCA valuation data for current pensioners are shown in Appendix K .

Appendix I — RCMP Pension Plan Projection

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

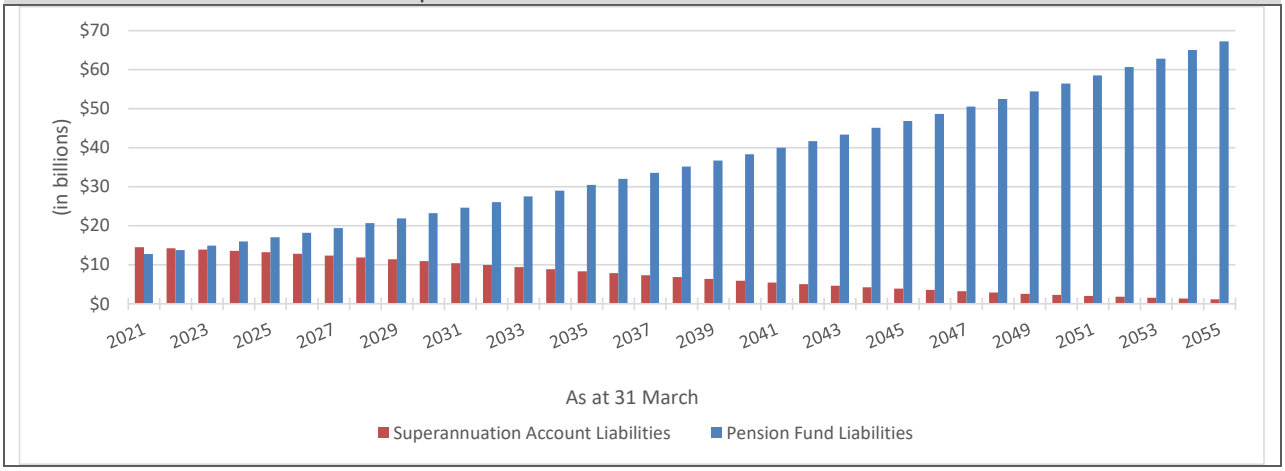
I.1 Projection of the Superannuation Account and the Pension Fund Liabilities

Prior to 1 April 2000, the RCMPSA Superannuation Account tracked all government pension benefit obligations related to the RCMPSA. 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 RCMPSA is financed through the Pension Fund. The Pension Fund is credited with employer and member contributions as well as 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 Superannuation Account liabilities for service prior to 1 April 2000 and the Pension Fund liabilities for service after 31 March 2000.It is expected that the Pension Fund liabilities will exceed the Superannuation Account liabilities in 2023.

Chart 1 Evolution of Liabilities of Superannuation Account and Pension Fund over Time

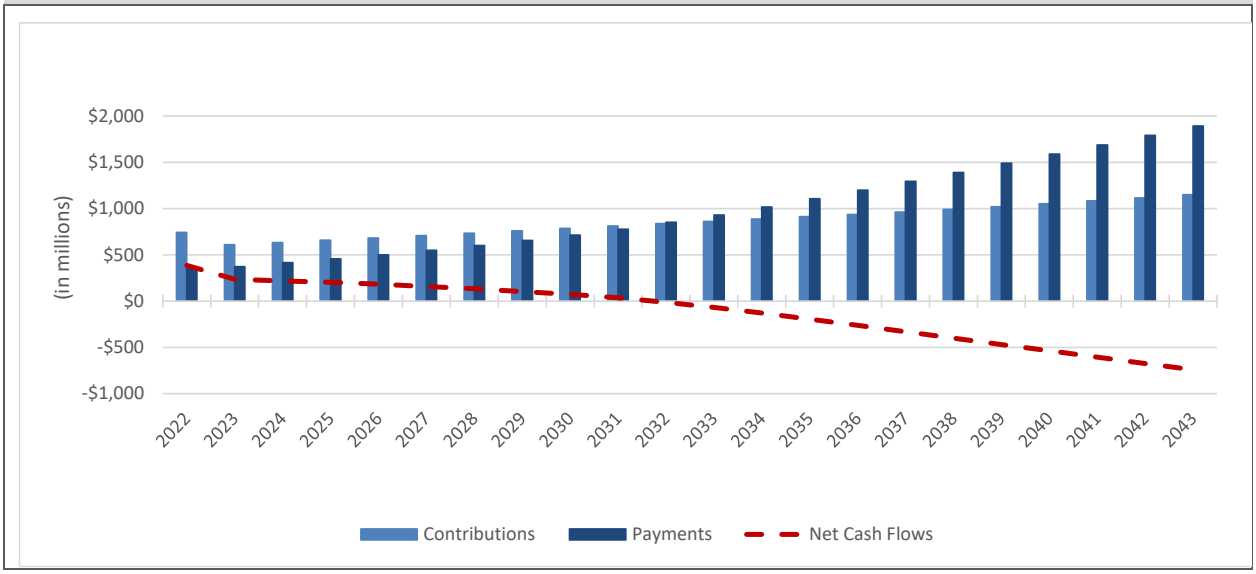


I.2 Evolution of Cash Flows under the Pension Fund

In plan year 2022, contributions to the Pension Fund are expected to reach $743 million, whereas payouts, including benefit payments and administrative expenses, are expected to reach $358 million. 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.

Chart 2 shows the Pension Fund is expected to have negative cash flows starting in plan year 2032, at which point a portion of the assets will be required to pay benefits. This implies that from plan year 2032, some portion of the Pension Fund's assets must be invested in liquid investments in order to be readily available to cover the excess payouts. Nevertheless, although negative cash flows will begin in the plan year 2032, the Pension Fund's overall assets are expected to grow for the entire duration of the projection presented below when investment incomes is taken into consideration.

Chart 2 Evolution of Cash Flows over Time



Appendix J — Uncertainty of Future Investment Returns

J.1 Introduction

The projected financial status of the plan 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 plan 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. In this appendix, any references to assets, liabilities, surplus/(deficit), annual special payments and service cost are related to the Pension Fund.

Section J.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 J.3, where a severe one-time financial shock is applied to the PSPIB's portfolio with the purpose of quantifying the impact on the funding ratio over the short-term horizon.

J.2 Range of Potential Funding Ratio due to Investment Volatility

Chart 3 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 valuations would occur every three years starting in 2020, that deficits are covered by additional government contributions, and that legislated non-permitted surplus (surplus in excess of 25% of liabilities) results in a full or partial contribution holiday for the government. The median expected funded ratios range between 109% - 116% over the projection period.

Chart 3 Range of Potential Funding Ratios

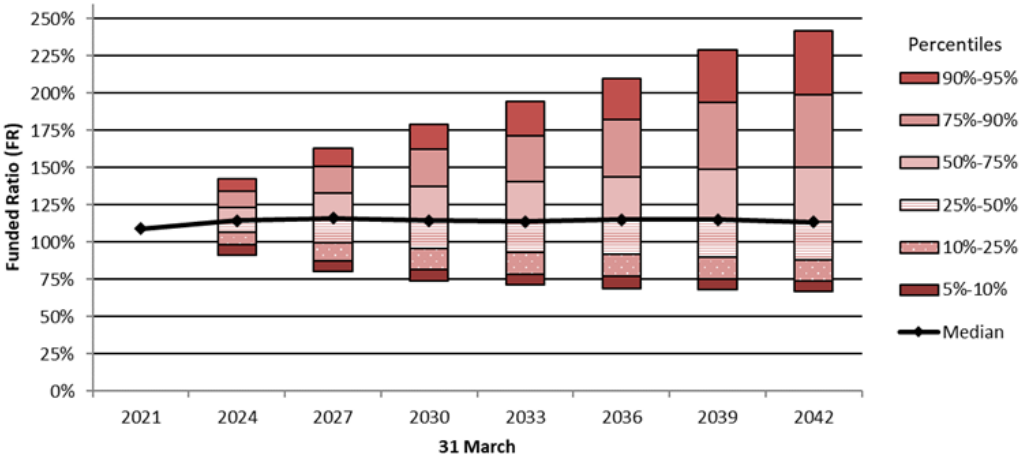
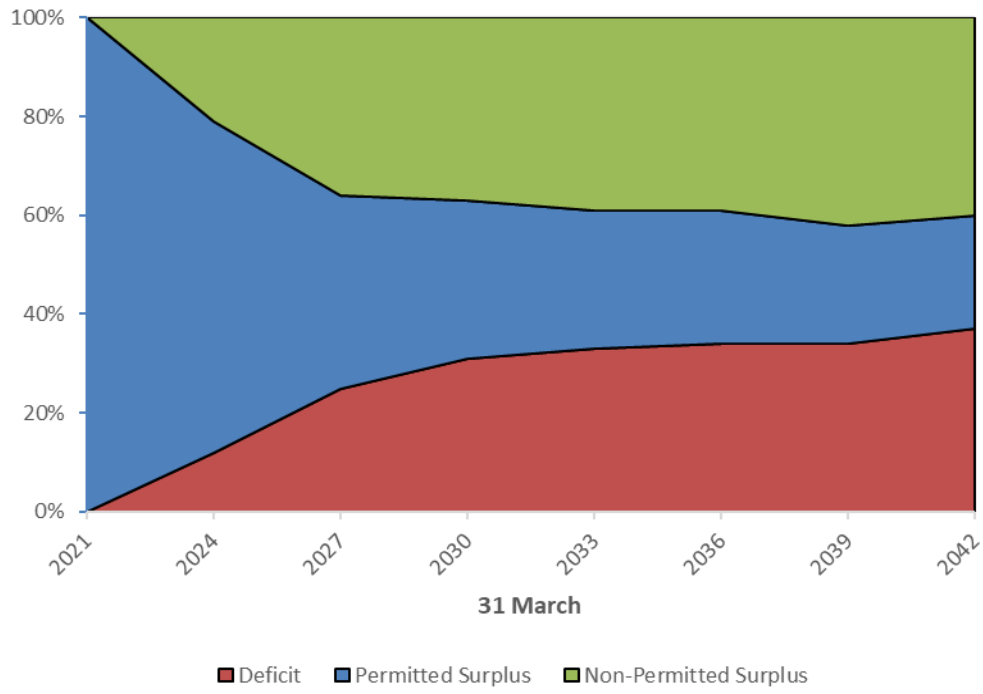


Chart 4 shows that the range of potential outcomes widens with time. It illustrates the probabilities associated with three possible funded statuses over the next 20 years: deficit, surplus less than 25% of liabilities, and non-permitted surplus.

Chart 4 Likelihood of Deficits and Non-Permitted Surplus due to Investment Volatility



J.3 Financial Market Tail Events

This section focuses on the inherent volatility in the PSPIB's 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 funding 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 2024 (the expected date of the next actuarial review).

To illustrate this, returns other than the best-estimate are assumed to occur in plan year 2022 followed by the best-estimate returns for plan years 2023 and 2024.

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%).

Table 52 shows that extreme events occurring during 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. 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 due to extreme returns.

Table 52 Financial Position at Tail-Events as at 31 March 2024

	Nominal Return (in percentage)		As at 31 March 2024					
	Plan Year 2022	Average 2022-2024	Market Value of Assets	Actuarial Value of Assets	Liability	Funding Ratio	Surplus / (Deficit)	Annual Special Payments
Current basis	6.5	6.2	18,532	18,208	15,959	114%	2,249	0
- Left tail event at the 2nd percentile	(16.4)	(2.0)	14,703	15,741	15,959	99%	(218)	23
- Left tail event at the 10th percentile	(7.5)	1.3	16,184	16,695	15,959	105%	736	0
- Right tail event at the 10th percentile	21.8	11.1	21,096	19,860	15,959	124%	3,901	0
- Right tail event at the 2nd percentile	30.7	13.7	22,576	20,814	15,959	130%	4,855	0

Appendix K — Detailed Membership Data

Table 53 Male Regular Member Contributors
Number and Average Annual Pensionable Earnings[1] as at 31 March 2021

Age	Completed Years of Service in the Force								All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35	
To 24	222								222
	$88,054								$88,054
25-29	1,243	205	1						1,449
	$93,891	$104,362	$108,967						$95,383
30-34	955	683	485	2					2,125
	$95,329	$105,630	$112,332	$110,718					$102,535
35-39	459	556	1,489	316					2,820
	$95,955	$105,926	$112,666	$119,443					$109,377
40-44	193	267	1,081	1,023	194				2,758
	$97,146	$106,059	$112,664	$120,027	$126,801				$114,664
45-49	105	148	659	913	679	68			2,572
	$99,691	$106,547	$111,924	$118,911	$128,925	$137,477			$118,759
50-54	40	46	310	415	533	338	188	2	1,872
	$110,069	$106,647	$111,832	$118,056	$128,599	$138,893	$147,735	$174,869	$126,380
55-59	8	11	93	111	118	149	386	33	909
	$132,791	$106,695	$111,837	$117,331	$123,806	$132,818	$142,011	$152,189	$131,901
60+		6	24	26	21	40	76	78	273
		$99,502	$115,178	$115,564	$121,107	$130,952	$133,789	$140,840	$130,124
All Ages	3,227	1,922	4,142	2,806	1,545	595	650	113	15,000
	$94,900	$105,722	$112,441	$119,152	$128,049	$136,676	$142,705	$144,757	$113,186

Average age:	41.8 years
Average service in the Force:	13.3 years
Average pensionable service:	13.6 years
Annualized pensionable payroll:	$1,681.4 millions

[1] As defined in Appendix A.4.1.

Table 54 Female Regular Member Contributors
Number and Average Annual Pensionable Earnings[1] as at 31 March 2021

Age	Completed Years of Service in the Force								All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35	
To 24	67								67
	$88,310								$88,310
25-29	405	76							481
	$93,264	$104,546							$95,046
30-34	284	245	105						634
	$95,940	$105,535	$111,244						$102,183
35-39	121	144	413	122					800
	$92,136	$106,267	$111,882	$116,524					$108,593
40-44	44	65	266	363	105				843
	$97,355	$105,715	$111,791	$117,675	$125,604				$114,823
45-49	19	36	115	191	321	36	2		720
	$97,213	$104,972	$112,526	$117,348	$126,980	$141,365	$131,658		$120,962
50-54	9	13	49	78	147	86	39		421
	$100,120	$107,189	$111,795	$117,214	$124,976	$134,669	$147,736		$125,012
55-59		3	12	30	36	19	61	10	173
		$107,966	$110,700	$117,926	$122,449	$137,289	$152,481	$159,310	$134,821
60+			1	5	5	4	12	7	36
			$110,453	$110,784	$130,982	$139,442	$146,406	$135,172	$134,481
All Ages	952	583	961	789	614	145	114	17	4,175
	$94,003	$105,628	$111,843	$117,338	$126,032	$136,807	$149,853	$149,371	$112,090

Average age:	40.6 years
Average service in the Force:	13.1 years
Average pensionable service:	13.4 years
Annualized pensionable payroll:	$465.4 millions

[1] As defined in Appendix A.4.1.

Table 55 Male Civilian Member Contributors
Number and Average Annual Pensionable Earnings[1] as at 31 March 2021

Age	Completed Years of Pensionable Service								All Years of Service
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35	
To 24									-
25-29	5 $78,843	12 $86,523							17 $84,264
30-34	18 $86,443	39 $87,510	24 $91,552						81 $88,470
35-39	13 $82,893	47 $87,543	121 $97,617	50 $100,400					231 $95,341
40-44	8 $88,201	27 $90,957	126 $95,069	146 $101,371	33 $105,716				340 $98,321
45-49	10 $80,788	29 $88,365	87 $96,047	97 $99,482	74 $104,890	17 $110,342	1 $105,541		315 $98,792
50-54	6 $88,360	22 $92,017	51 $96,899	54 $99,605	60 $104,302	35 $111,094	20 $100,341		248 $100,920
55-59	2 $109,301	9 $90,937	39 $94,156	42 $98,669	30 $106,956	33 $110,591	28 $107,497	6 $94,551	189 $102,056
60+	1 $86,016	6 $80,380	16 $88,455	34 $97,949	25 $96,032	11 $100,345	11 $104,314	8 $115,352	112 $97,221
All Ages	63 $85,334	191 $88,530	464 $95,631	423 $100,055	222 $104,135	96 $109,556	60 $104,496	14 $106,437	1,533 $98,093

Average age:	47.1 years
Average pensionable service:	16.3 years
Annualized pensionable payroll:	$148.9 millions

[1] As defined in Appendix A.4.1.

Table 56 Female Civilian Member Contributors
Number and Average Annual Pensionable Earnings[1] as at 31 March 2021

	Completed Years of Pensionable Service								All Years of
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35	Service
To 24									-
25-29	13 $68,257	8 $67,022							21 $67,787
30-34	21 $72,009	66 $80,203	32 $85,560	1 $63,112					120 $80,055
35-39	18 $73,932	85 $80,290	168 $87,437	31 $91,797					302 $85,068
40-44	9 $72,386	51 $79,213	123 $89,460	153 $97,586	25 $99,481				361 $91,725
45-49	5 $73,661	40 $75,791	60 $87,564	99 $92,476	94 $96,125	10 $105,238	1 $94,144		309 $90,586
50-54	2 $69,684	24 $75,271	56 $85,611	57 $90,636	52 $95,765	41 $98,898	24 $88,022		256 $90,053
55-59	2 $89,904	15 $78,812	26 $93,612	34 $80,775	26 $92,135	26 $99,414	16 $102,848	2 $70,148	147 $90,533
60+	1 $93,798	1 $61,032	9 $80,151	11 $75,114	10 $84,992	4 $71,858	5 $100,342	4 $91,925	45 $82,427
All Ages	71 $72,719	290 $78,536	474 $87,836	386 $92,574	207 $95,401	81 $98,511	46 $94,651	6 $84,666	1,561 $88,338

Average age:	45.3 years
Average pensionable service:	15.2 years
Annualized pensionable payroll:	$137.4 millions

[1] As defined in Appendix A.4.1.

Table 57 Male Former Regular Member Retirement Pensioners in Pay
Number and Average Annual Pension[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Less than 45	-	-	1	38,660	-	-
45-49	20	8,734	23	36,746	8	951
50-54	338	20,539	345	38,735	45	1,337
55-59	1,067	29,461	1,075	35,642	34	8,248
60-64	2,022	40,830	1,995	27,252	36	9,264
65-69	2,895	39,595	2,363	14,188	49	6,992
70-74	3,028	42,701	1,700	7,627	63	4,307
75-79	1,675	43,883	267	3,009	22	3,107
80-84	1,039	45,300	6	724	6	490
85-89	541	45,030	-	-	-	-
90-94	133	43,357	-	-	-	-
95-99	5	24,862	-	-	-	-
100+	1	44,114	-	-	-	-
All Ages	12,764	40,419	7,775	19,837	263	5,197
	Average Age	70.3 years				
	Average Age at Retirement	52.3 years				

Table 58 Male Former Regular Member Disabled Pensioners in Pay
Number and Average Annual Pension[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Less than 35	-	-	19	16,013	-	-
35-39	-	-	52	18,101	-	-
40-44	2	393	92	23,305	-	-
45-49	60	7,223	148	30,404	3	121
50-54	207	14,792	272	33,154	19	147
55-59	506	23,348	535	30,085	10	480
60-64	544	30,459	541	23,380	3	-
65-69	423	31,121	351	12,691	1	-
70-74	263	33,020	167	6,451	1	2,026
75-79	63	32,914	20	3,847	-	-
80-84	18	38,669	-	-	-	-
85-89	6	34,961	-	-	-	-
90-94	1	43,568	-	-	-	-
95-99	-	-	-	-	-	-
100+	-	-	-	-	-	-
All Ages	2,093	27,115	2,197	23,332	37	270
	Average Age	60.4 years				
	Average Age at Retirement	50.4 years				

[1] Equals initial amounts of all pensions in pay plus all accrued indexation, reduced by any CPP coordination and PBDA offsets in effect as at 31 March 2021. All accrued indexation is in pay except that in respect of retirement pensioners who have not yet satisfied at least one of the relevant criteria for receiving indexation payments. There were also 208 male former Regular Members who are entitled to an average deferred pension of $12,056 payable at age 60, their average age is 41.4.

Table 59 Female Former Regular Member Retirement Pensioners in Pay
Number and Average Annual Pension[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Less than 45	1	3,596	2	27,497	-	-
45-49	16	11,445	16	41,244	6	1,107
50-54	115	18,279	116	34,717	18	1,833
55-59	247	28,789	245	33,270	8	4,252
60-64	220	35,503	209	23,891	5	6,017
65-69	150	33,580	122	15,133	5	10,661
70-74	32	36,541	22	12,689	1	13,412
75-79	13	26,481	8	5,557	-	-
80-84	6	17,089	-	-	-	-
85-89	7	25,285	-	-	-	-
90-94	2	19,951	-	-	-	-
95-100	2	17,200	-	-	-	-
100+	-	-	-	-	-	-
All Ages	811	29,735	740	27,103	43	3,964
	Average Age	61.3 years				
	Average Age at Retirement	51.9 years				

Table 60 Female Former Regular Member Disabled Pensioners in Pay
Number and Average Annual Pension[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Less than 35	-	-	8	14,004	-	-
35-39	-	-	28	15,361	-	-
40-44	3	5,553	61	25,089	-	-
45-49	57	6,480	109	28,515	7	129
50-54	156	14,527	188	29,316	19	133
55-59	183	22,194	194	27,249	5	158
60-64	121	27,373	105	24,400	-	-
65-69	51	25,694	43	15,984	-	-
70-74	16	25,707	10	8,509	-	-
75-79	3	20,778	1	6,028	-	-
80-84	-	-	-	-	-	-
85-89	1	8,763	-	-	-	-
90-94	-	-	-	-	-	-
95-99	-	-	-	-	-	-
100+	-	-	-	-	-	-
All Ages	591	19,998	747	25,862	31	136
	Average Age	54.6 years				
	Average Age at Retirement	47.4 years				

[1] Equals initial amounts of all pensions in pay plus all accrued indexation, reduced by any CPP coordination and PBDAoffsets in effect as at 31 March 2021. All accrued indexation is in pay except that in respect of retirement pensioners who have not yet satisfied at least one of the relevant criteria for receiving indexation payments. There were also 63 male former Regular Members who are entitled to an average deferred pension of $12,807 payable at age 60, their average age is 41.4.

Table 61 Male Former Civilian Member Retirement Pensioners in Pay
Number and Average Annual Pension [1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Less than 45	-	-	-	-	-	-
45-49	-	-	-	-	-	-
50-54	2	15,292	2	32,874	-	-
55-59	53	25,514	61	35,742	-	-
60-64	159	31,637	183	30,888	1	3,686
65-69	202	32,136	227	17,832	4	7,963
70-74	186	36,666	190	10,992	6	2,167
75-79	131	33,530	72	5,967	2	3,347
80-84	77	32,642	17	3,589	-	-
85-89	43	28,631	2	3,723	-	-
90-94	8	38,099	-	-	-	-
95-99	3	8,262	-	-	-	-
100+	-	-	-	-	-	-
All Ages	864	32,628	754	19,275	13	4,249
	Average Age	70.8 years				
	Average Age at Retirement	58.3 years				

Table 62 Male Former Civilian Member Disabled Pensioners in Pay
Number and Average Annual Pension[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Less than 35	-	-	1	4,118	-	-
35-39	-	-	4	13,032	-	-
40-44	-	-	6	25,309	-	-
45-49	1	3,783	8	23,212	-	-
50-54	6	9,580	20	20,683	-	-
55-59	17	16,449	27	21,625	-	-
60-64	23	21,449	36	22,198	-	-
65-69	20	25,762	20	11,823	-	-
70-74	12	27,083	10	7,224	-	-
75-79	11	23,314	2	5,162	-	-
80-84	5	23,614	-	-	-	-
85-89	2	22,338	1	6	-	-
90-94	-	-	-	-	-	-
95-99	-	-	-	-	-	-
100+	-	-	-	-	-	-
All Ages	97	21,584	135	18,589	-	-
	Average Age	61.4 years				
	Average Age at Retirement	51.5 years				

[1] Equals initial amounts of all pensions in pay plus all accrued indexation, reduced by any CPP coordination and PBDA offsets in effect as at 31 March 2021. There were also 99 male former Civilian Members who are entitled to an average deferred pension of $16,423 payable at age 60, their average age is 47.5.

Table 63 Female Former Civilian Member Retirement Pensioners in Pay
Number and Average Annual Pension[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
less than 45	-	-	-	-	-	-
45-49	-	-	2	15,433	-	-
50-54	2	13,194	4	21,693	-	-
55-59	58	21,170	77	31,403	-	-
60-64	123	25,275	177	23,420	-	-
65-69	173	24,612	192	14,542	2	11,029
70-74	131	26,590	131	9,652	1	4,304
75-79	51	23,184	43	7,505	-	-
80-84	43	25,712	16	5,297	1	1,331
85-89	20	22,038	1	4,379	-	-
90-94	8	31,321	-	-	-	-
95-99	1	15,772	-	-	-	-
100+	1	18,224	-	-	-	-
All Ages	611	24,742	643	17,339	4	6,923
	Average Age	68.6 years				
Average Age at Retirement		57.9 years				

Table 64 Female Former Civilian Member Disabled Pensioners in Pay
Number and Average Annual Pension[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Pension ($)	Number	Pension ($)	Number	Pension ($)
Less than 35	-	-	2	15,578	-	-
35-39	-	-	17	11,694	-	-
40-44	-	-	33	14,939	-	-
45-49	9	3,480	49	18,590	-	-
50-54	21	10,470	48	19,411	-	-
55-59	57	14,878	99	19,974	-	-
60-64	49	18,873	66	16,487	-	-
65-69	53	18,984	51	9,126	-	-
70-74	31	20,038	26	6,079	-	-
75-79	7	16,304	2	10,314	-	-
80-84	2	20,605	1	869	-	-
85-89	1	15,911	-	-	-	-
90-94	1	23,827	-	-	-	-
95-99	-	-	-	-	-	-
100+	-	-	-	-	-	-
All Ages	231	16,651	394	15,929	-	-
	Average Age	57.7 years				
Average Age at Retirement		49.3 years				

[1] Equals initial amounts of all pensions in pay plus all accrued indexation, reduced by any CPP coordination and PBDA offsets in effect as at 31 March 2021. There were also 145 female former Civilian Members who are entitled to an average deferred pension of 15,721 payable at age 60, their average age is 47.4.

Table 65 Female Eligible Spouses
Number and Average Annual Allowance[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Allowance ($)	Number	Allowance ($)	Number	Allowance ($)
to 39	2	2,897	17	8,344	-	-
40-44	5	9,043	20	9,612	-	-
45-49	17	9,872	33	9,166	-	-
50-54	45	10,867	53	11,151	1	19,120
55-59	116	17,041	92	10,107	-	-
60-64	220	19,842	133	8,364	-	-
65-69	400	22,020	187	5,446	4	4,309
70-74	514	23,054	143	3,771	2	2,785
75-79	462	24,285	37	2,424	1	398
80-84	528	23,217	10	1,522	2	151
85-89	387	23,282	1	538	-	-
90-94	132	21,013	-	-	-	-
95-99	23	15,943	-	-	-	-
100+	7	14,022	-	-	-	-
All Ages	2,858	22,195	726	6,795	10	4,262
		Average Age	75.1 years			
	Average Age at Death of Contributor		63.1 years			

Table 66 Male Eligible Spouses
Number and Average Annual Allowance[1] as at 31 March 2021

	Superannuation Account		Pension Fund		RCA	
Age	Number	Allowance ($)	Number	Allowance ($)	Number	Allowance ($)
to 39	1	2,082	3	8,102	-	-
40-44	-	0	2	10,078	-	-
45-49	1	4,264	2	15,768	-	-
50-54	4	7,860	6	12,325	-	-
55-59	6	10,837	5	14,569	-	-
60-64	7	11,737	7	11,007	2	1,671
65-69	15	14,457	10	8,074	-	-
70-74	14	13,090	10	6,010	2	182
75-79	6	15,783	7	3,790	1	472
80-84	3	26,487	2	1,712	-	-
85-89	2	6,901	-	-	-	-
90-94	-	0	-	-	-	-
95-99	1	4,795	-	-	-	-
100+	-	0	-	-	-	-
All Ages	60	12,964	54	8,716	5	836
		Average Age	65.6 years			
	Average Age at Death of Contributor		57.6 years			

[1] Equals initial amounts of annual allowance plus all indexation in effect as at 31 March 2021.

Table 67 Children
Number and Average Annual Pension[1] as at 31 March 2021

	Superannuation Account		Pension Fund	
Age	Number	Pension ($)	Number	Pension ($)
0 to 18	30	1,103	103	2,405
19 to 25	25	2,972	28	2,684
All Ages	55	1,953	131	2,465

[1] Equals initial amounts of annual allowance plus all indexation in effect as at 31 March 2021.

Appendix L — Acknowledgements

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

The co-operation and able assistance received from the above-mentioned data providers deserve to be acknowledged.

The following individuals assisted in the preparation of this report:

Linda Benjauthrit ACIA, ASA
Hao Chen, FCIA, FSA
Ayoub Ezzahouri
Alexandre Filiatreault, FCIA, FSA
Nicholas Landry, ACIA, ASA
Guillaume Lépine-Mathieu, ACIA, ASA
Yan Liu, ACIA, ASA
Kelly Moore
Natalija Rajic
Mieke Steenbakker Lucuik