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Financial Institutions Canada

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Office of the Chief Actuary

Bureau de l'actuaire en chef

Actuarial Report

20th

Pension Plans for the Canadian Forces

Regular Force and Reserve Force
as at 31 March 2022

Canada 

Office of the Chief Actuary

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29 September 2023

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

Dear Minister,

Pursuant to section 6 of the *Public Pensions Reporting Act*, I am pleased to submit the report on the actuarial review as at 31 March 2022 of the Canadian Forces Pension Plans. This actuarial review is in respect of pension benefits and contributions of both the Regular Force Pension Plan and the Reserve Force Pension Plan. The Regular Force Pension Plan is established by Parts I, III and IV of the *Canadian Forces Superannuation Act*, includes the Canadian Forces-related benefits provided under the *Special Retirement Arrangements Act*, and is subject to the *Pension Benefits Division Act*. The Reserve Force Pension Plan is established by Part I.1 of the *Canadian Forces Superannuation Act* and subject to the *Pension Benefits Division Act*.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'ABillig', with a long horizontal flourish extending to the right.

Assia Billig, FCIA, FSA, PhD
Chief Actuary

TABLE OF CONTENTS

	Page
1 Highlights of the report	8
2 Introduction.....	10
2.1 Purposes of the report.....	10
2.2 Scope of the report.....	10
3 Valuation basis	11
4 Valuation results.....	13
4.1 Financial position	13
4.2 CFSA - Reconciliation of the changes in financial position	16
4.3 CFSA - Cost certificate.....	21
4.4 Sensitivity to variations in key economic assumptions	24
4.5 Assessing and illustrating downside risks.....	26
4.6 RCA – Financial position.....	27
4.7 RCA – Current service cost.....	28
4.8 Summary of estimated government cost	29
5 Actuarial opinion	30
Appendix A — Summary of pension benefit provisions.....	31
Appendix B — RCA benefit provisions under the Regular Force Plan.....	47
Appendix C — Assets, accounts and rates of return	48
Appendix D — Membership data	54
Appendix E — CFSA Valuation methodology	60
Appendix F — CFSA Economic assumptions.....	65
Appendix G — CFSA Demographic assumptions	76
Appendix H — RCA Valuation methodology and assumptions	91
Appendix I — Canadian Forces Pension Plans projection	93
Appendix J — Uncertainty of future investment returns	97
Appendix K — Detailed information on membership.....	100
Appendix L — Acknowledgements	126

TABLES

	Page
Table 1	Ultimate best-estimate economic assumptions..... 12
Table 2	Demographic assumptions as at 31 March 2022 and as at 31 March 2019 12
Table 3	State of the Canadian Forces Superannuation Account..... 13
Table 4	Balance Sheet of the Canadian Forces Pension Fund..... 14
Table 5	Financial Position - Reserve Force Pension Fund 15
Table 6	Reconciliation of financial position from plan year 2019 to 2022 by account 16
Table 7	Experience gains and losses from plan year 2019 to 2022 by account 18
Table 8	Impact of the revision of actuarial assumptions on the actuarial liability by account 19
Table 9	Current service cost for plan year 2024 21
Table 10	Reconciliation of current service cost by account..... 21
Table 11	Member contribution rates by pension plan 22
Table 12	Projection of current service cost of the CFPF on a plan year basis (\$ millions) 22
Table 13	Projection of current service cost of the CFPF on a plan year basis (% of pensionable payroll) 22
Table 14	Projection of current service cost of the RFPF on a plan year basis (\$ millions) 22
Table 15	Projection of current service cost of the RFPF on a plan year basis (% of pensionable payroll) 23
Table 16	CFPF current service cost on a calendar year basis (\$ millions) 23
Table 17	CFPF current service cost on a calendar year basis (% of pensionable payroll) 23
Table 18	RFPF current service cost on a calendar year basis (\$ millions) 23
Table 19	RFPF current service cost on a calendar year basis (% of pensionable payroll) 23
Table 20	Administrative expenses by account..... 24
Table 21	Estimated contributions for prior service by account ^a 24
Table 22	Sensitivity of current service cost for plan year 2024 to variations in key economic assumptions by pension plan 25
Table 23	Sensitivity of actuarial liability as at 31 March 2022 to variations in key economic assumptions by account..... 25
Table 24	Sensitivity of cohort life expectancy at age 65 to variation in longevity improvement factors as at 31 March 2022 and as at 31 March 2042 27
Table 25	State of the RCA Account 27
Table 26	Current service cost of the RCA by plan year 28
Table 27	RCA current service cost on a calendar year basis (\$ millions)..... 28
Table 28	RCA current service cost on a calendar year basis (% of pensionable payroll)..... 28
Table 29	Estimated government credit..... 29
Table 30	Estimated government cost 29
Table 31	Regular forces member contribution rates 33
Table 32	Reconciliation of balances in Superannuation Account for plan year 2019 to 2022..... 49
Table 33	Reconciliation of Balances in Canadian Forces Pension Fund 50
Table 34	Reconciliation of balances in RCA Account 51
Table 35	Reconciliation of balances in Reserve Force Pension Fund for plan year 2019 to 2022 52
Table 36	Interest earnings and rates of return 53

Table 37	Summary of membership data by plan	55
Table 38	Reconciliation of Regular Force Plan contributors	56
Table 39	Reconciliation of Reserve Force plan contributors.....	57
Table 40	Reconciliation of Regular Force Plan pensioners	58
Table 41	Reconciliation of Reserve Force plan pensioners.....	58
Table 42	Reconciliation of spouse survivors by plan.....	59
Table 43	Reconciliation of children/students survivors by plan.....	59
Table 44	Actuarial value of Canadian Forces Pension Fund assets	61
Table 45	Actuarial value of Reserve Force Pension Fund assets.....	61
Table 46	Asset mix	68
Table 47	Real rate of return by asset type ^a	71
Table 48	Overall rate of return on assets of the CFPF and RFPF.....	72
Table 49	Rates of return on assets in respect of the CFPF and the RFPF ^a	73
Table 50	Transfer value.....	74
Table 51	Economic assumptions.....	75
Table 52	Sample of assumed seniority and promotional salary increases.....	77
Table 53	Proportion of female members joining the plans	77
Table 54	Assumed annual increases in number of contributors per pension plan	78
Table 55	Sample of assumed rates of retirement for members of the Regular Force Plan.....	78
Table 56	Sample of assumed rates of retirement of the Reserve Force members.....	79
Table 57	Sample of assumed 3B disability incidence rates (own occupation) for the Regular Force Plan	80
Table 58	Sample of assumed withdrawal rates of the Regular Force plan	81
Table 59	Assumed withdrawal rates for Reserve Force Plan for members below age 50	81
Table 60	Sample of assumed rollover rates for Reserve Force Plan	82
Table 61	Sample of assumed rates of mortality for Plan Year 2023 for contributors and retirement pensioners.....	83
Table 62	Sample of assumed rates of mortality for Plan Year 2023 for disability (3A) pensioners	83
Table 63	Sample of assumed rates of mortality Plan Year 2023 for surviving spouses	84
Table 64	Sample of assumed longevity improvement factors at initial and ultimate plan year mortality reductions	85
Table 65	Cohort life expectancy of contributors and retirement pensioners.....	85
Table 66	Probability of an eligible spouse at death of member	86
Table 67	Spouse age difference with the member at death of member	86
Table 68	Assumed rates of children ceasing to be eligible for a survivor allowance	87
Table 69	Wage Measure - RFPF	89
Table 70	Financial position of the CFPF as at 31 March 2025 due to asset return tail-events	99
Table 71	Regular Force - Male officers	100
Table 72	Regular Force - Male officers - Summary	100
Table 73	Regular Force - Male other ranks	101
Table 74	Regular Force - Male other ranks - Summary.....	101
Table 75	Regular Force - Female officers.....	102
Table 76	Regular Force - Female officers - Summary.....	102
Table 77	Regular Force - Female other ranks	103

Table 78	Regular Force - Female other ranks - Summary	103
Table 79	Reserve Force - Male officers	104
Table 80	Reserve Force - Male officers - Summary	104
Table 81	Reserve Force - Male other ranks	105
Table 82	Reserve Force - Male other ranks - Summary	105
Table 83	Reserve Force - Female officers	106
Table 84	Reserve Force - Female officers - Summary	106
Table 85	Reserve Force - Female other ranks	107
Table 86	Reserve Force - Female other ranks - Summary	107
Table 87	Regular Force - Male officers - Retirement pensioners	108
Table 88	Summary of Regular Force - Male officers - retirement pensioners	108
Table 89	Regular Force - Female officers - Retirement pensioners	109
Table 90	Summary of Regular Force - Female officers - Retirement pensioners	109
Table 91	Regular Force - Male other ranks - Retirement pensioners	110
Table 92	Summary of Regular Force - Male other ranks - Retirement pensioners	110
Table 93	Regular Force - Female other ranks - Retirement pensioners	111
Table 94	Summary of Regular Force - Female other ranks - Retirement pensioners	111
Table 95	Regular Force - Male officers - 3B Pensioners	112
Table 96	Summary of Regular Force - Male officers - 3B Pensioners	112
Table 97	Regular Force - Female officers - 3B Pensioners	113
Table 98	Summary of Regular Force - Female officers - 3B Pensioners	113
Table 99	Regular Force - Male other ranks - 3B Pensioners	114
Table 100	Summary of Regular Force - Male other ranks - 3B Pensioners	114
Table 101	Regular Force - Female other ranks - 3B Pensioners	115
Table 102	Summary of Regular Force - Female other ranks - 3B Pensioners	115
Table 103	Regular Force - Male officers - 3A Pensioners	116
Table 104	Summary of Regular Force - Male officers - 3A Pensioners	116
Table 105	Regular Force - Female officers - 3A Pensioners	117
Table 106	Summary of Regular Force - Female officers - 3A Pensioners	117
Table 107	Regular Force - Male other ranks - 3A Pensioners	118
Table 108	Summary of Regular Force - Male other ranks - 3A Pensioners	118
Table 109	Regular Force - Female other ranks - 3A Pensioners	119
Table 110	Summary of Regular Force - Female other ranks - 3A Pensioners	119
Table 111	Reserve Force - Male officers - Retirement pensioners	120
Table 112	Summary of Reserve Force - Male officers - Retirement pensioners	120
Table 113	Reserve Force - Male other ranks - Retirement pensioners	120
Table 114	Summary of Reserve Force - Male other ranks - Retirement pensioners	121
Table 115	Reserve Force - Female officers - Retirement pensioners	121
Table 116	Summary of Reserve Force - Female officers - Retirement pensioners	121
Table 117	Reserve Force - Female other ranks - Retirement pensioners	122
Table 118	Summary of Reserve Force - Female other ranks - Retirement pensioners	122
Table 119	Reserve Force - Officers - Disability pensioners	122
Table 120	Summary of Reserve Force - Officers - Disability pensioners	123
Table 121	Reserve Force - Other ranks - Disability pensioners	123

Table 122 Summary of Reserve Force - Other ranks - Disability pensioners.....	123
Table 123 Regular Force - Surviving spouses	124
Table 124 Summary of Regular Force - Surviving spouses.....	124
Table 125 Reserve Force - Surviving spouses.....	125
Table 126 Summary of Reserve Force - Surviving spouses	125

CHARTS

	Page
Chart 1 Evolution of liabilities of Superannuation Account and CFPP over time	93
Chart 2 Evolution of cash flows of the CFPP over time	94
Chart 3 Evolution of liabilities of the RFPF over time.....	95
Chart 4 Evolution of cash flows of the RFPF over time	96
Chart 5 Range of potential funding ratio for the best-estimate portfolio - CFPP.....	97
Chart 6 Likelihood of deficits and non-permitted surplus due to investment volatility.....	98

1 Highlights of the report

Main findings for actuarial report on the Pension Plan for the Regular Force as at 31 March 2022

	Superannuation Account (Service prior to 1 April 2000)	Pension Fund (Service since 1 April 2000)
Financial Position	➤ The balance of the Superannuation Account is \$45,322 million.	➤ The actuarial value of the assets in respect of the Pension Fund is \$41,091 million.
	➤ The actuarial liability for service prior to 1 April 2000 ^a is \$48,422 million.	➤ The actuarial liability for service since 1 April 2000 is \$36,972 million.
	➤ The resulting actuarial shortfall is \$3,100 million.	➤ The resulting actuarial surplus is \$4,119 million.
Funding Ratio/Special credits or payments	<ul style="list-style-type: none"> ➤ It is expected that the government will make a one-time nominal credit of \$3,298 million as at 31 March 2024 to eliminate the actuarial shortfall. ➤ The payment takes into account the interest on the shortfall accumulated from 31 March 2022 to 31 March 2024. 	➤ The funding ratio is 111.1%.
Member Contribution Rates	➤ No contribution is made to the Superannuation Account ^b .	➤ 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 ^c .
Projected Current Service Cost in millions of dollars (Calendar year 2024)	➤ No current service cost for the Superannuation Account.	<ul style="list-style-type: none"> ➤ Member contributions: \$606 million. ➤ Government contributions: \$904 million. ➤ Ratio of government to contributor service cost: 1.49

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

**Main findings for actuarial report on the Pension Plan for the Reserve Force
as at 31 March 2022**

	Pension Fund (Service since 1 March 2007)
Financial Position	<ul style="list-style-type: none"> ➤ The actuarial value of the assets in respect of the Pension Fund is \$738 million. ➤ The actuarial liability is \$792 million. ➤ The resulting actuarial deficit is \$54 million.
Funding Ratio/Special payments	<ul style="list-style-type: none"> ➤ The funding ratio is 93.2%. ➤ It is expected that the government will make 15 equal annual special payments of \$4.1 million beginning on 31 March 2024 to eliminate the actuarial deficit. ➤ The payments take into account the interest on the actuarial deficit accumulated from 31 March 2022 to 31 March 2024.
Member Contribution Rates	<ul style="list-style-type: none"> ➤ 5.2% of earnings, as set by Regulation
Projected Current Service Cost in millions of dollars (Calendar year 2024)	<ul style="list-style-type: none"> ➤ Member contributions: \$25.2 million. ➤ Government contributions: \$48.0 million. ➤ Ratio of government to contributor service cost: 1.90

2 Introduction

This actuarial report on the Canadian Forces Regular Force Pension Plan (Regular Force Plan) and the Reserve Force Pension Plan (Reserve Force Plan) was made pursuant to the *Public Pensions Reporting Act* (PPRA).

This actuarial valuation is as at 31 March 2022 and is in respect of the pension benefits and contributions defined by Parts I, III and IV of the *Canadian Forces Superannuation Act* (CFSA), the *Special Retirement Arrangements Act* (SRAA), which covers the *Retirement Compensation Arrangements* (RCA), and the *Pension Benefits Division Act* (PBDA) for members of the Regular Force Plan. This valuation is also in respect of the pension benefits and contributions defined by Part I.1 of the CFSA and the PBDA for members of the Reserve Force Plan.

The previous actuarial report was prepared as at 31 March 2019. The date of the next periodic review is scheduled to occur no later than 31 March 2025.

2.1 Purposes of the report

The purposes of this actuarial valuation are to:

- determine the state of the Regular Force Plan composed of the Canadian Forces Superannuation Account (Superannuation Account), the Canadian Forces Pension Fund (CFPF) and the Retirement Compensation Arrangements (RCA) Account;
- determine the state of the Reserve Force Plan composed of the Reserve Force Pension Fund (RFPF);
- determine the projected current service costs for the CFPF, the RFPF and the RCA Account; and
- assist the President of the Treasury Board in making informed decisions regarding the financing of the government's pension benefit obligation.

This report may not be suitable for other purposes.

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 Regular Force Plan and Reserve Force Plan provisions, a description of data, methodology 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, summarized in Appendices A and B.

Contribution rates for Regular Force members for calendar years 2022 to 2024 (as approved by the Treasury Board) and for calendar year 2025 and beyond (estimated) have been updated since the last valuation and are assumed to be equal to the contribution rates of Group 1 contributors under the pension plan for the Public Service of Canada (PS pension plan).

Contribution rates for Reserve Force members are set by regulation.

The *Canadian Forces 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, increasing the permitted surplus from 10% to 25% of liabilities. The regulations which outline the corresponding provisions for the Reserve Force Plan remain unchanged. There have been no other changes to the plan provisions of either plan since the previous 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 plans¹ 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.

For the Regular Force Plan, the financial data on which this valuation is based are composed of:

- The CFPF 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 for benefits in excess of those that can be provided under the *Income Tax Act* limits for registered pension plans.

For the Reserve Force Plan, the financial data on which this valuation is based are composed of RFPF invested assets that the government has earmarked for the payment of benefits for Reserve Force service.

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

The membership data are provided by the 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.

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

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

purposes of the valuation at the date of this report.

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

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

Table 1 Ultimate best-estimate economic assumptions

Economic assumptions	31 March 2022	31 March 2019
Assumed level of inflation	2.00%	2.00%
Real increase in pensionable earnings	0.60%	0.70%
Real increase in YMPE and MPE ^a	0.90%	1.00%
Real rate of return on the Pension Fund	4.00%	4.00%
Real rate of return on the Superannuation Account and RCA Account	2.00%	2.50%

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

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

Table 2 Demographic assumptions as at 31 March 2022 and as at 31 March 2019

Demographic assumptions	31 March 2022	31 March 2019
Promotional and seniority rate of increase ^a		
Officer	0.5% to 10.6%	0.5% to 9.5%
Other rank	0.5% to 5.4%	0.5% to 7.3%
Cohort life expectancy at age 65		
Male officer	23.5	23.6
Male other rank	20.8	21.2
Female	24.4	24.6
Average age at retirement		
Regular Force members	52.7	53.7
Reserve Force members	58.8	57.0

a. Range of increase for years of service from 4 to 35. More details can be found in Appendix A

As of the date of the signing of this report, we were not aware of any subsequent events that may have a material impact 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 in Canada as well as methods and assumptions summarized in Appendices E to H. Emerging experience that differs from the corresponding assumptions will result in gains or losses to be revealed in subsequent reports.

Projections of the financial positions of the Superannuation Account, the CFPF and the RFPF are shown in Appendix I.

4.1 Financial position

Beginning on 1 April 2000, member and government contributions of the Regular Force Plan are no longer credited to the Superannuation Account. Rather, they are credited to the CFPF, and the total amount of contributions net of benefits paid and administrative expenses is transferred to the Public Sector Pension Investment Board (PSP) and invested in the financial markets.

Contributions made by the government and members of the Reserve Force Plan are credited to the RFPF. The total amount of contributions net of benefits paid and administrative expenses is transferred to PSP and invested in the financial markets.

The valuation results of this section show the financial position as at 31 March 2022 for each financing arrangement under the CFSA. The results of the previous valuation are also shown for comparison.

4.1.1 Canadian Forces Superannuation Account

Table 3 State of the Canadian Forces Superannuation Account (\$ millions)		
Components of financial position	31 March 2022	31 March 2019
Assets		
Recorded account balance	45,303	45,607
Present value of prior service contributions	<u>19</u>	<u>23</u>
Asset Subtotal	45,322	45,630
Actuarial liability		
Active contributors	2,443	4,153
Retirement pensioners	32,329	31,609
Disabled 3B	9,639	8,602
Disabled 3A	114	122
Deferred vested members	83	69
Eligible survivors	3,703	3,356
Outstanding payments	-	1
Administrative expenses	<u>111</u>	<u>145</u>
Total actuarial liability	48,422	48,057
Actuarial excess or shortfall	(3,100)	(2,427)

In accordance with the CFSA, the actuarial shortfall of \$3,100 million could be amortized over a maximum period of 15 years beginning on 31 March 2024. If the shortfall is amortized over the maximum period, 15 equal annual credits of \$264 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 amortize the actuarial shortfall through a one-time special credit to the Superannuation Account of \$3,298 million as at 31 March 2024 that takes into account the interest on the shortfall accumulated from 31 March 2022 to 31 March 2024.

4.1.2 Canadian Forces Pension Fund

Components of financial position	<u>31 March 2022</u>	<u>31 March 2019</u>
Actuarial value of assets		
Market value of assets	44,663	33,123
Actuarial smoothing adjustment	(3,942)	(1,928)
Present value of prior service contributions	297	328
Amount receivable from Part I.1 - Rollover members	<u>73</u>	<u>63</u>
Total actuarial value of assets	41,091	31,586
Actuarial Liability		
Active contributors	18,652	17,720
Retirement pensioners	9,328	7,213
Disabled 3B	8,399	5,701
Disabled 3A	11	7
Deferred vested members	273	147
Eligible survivors	212	136
Outstanding payments	<u>97</u>	<u>83</u>
Total actuarial liability	36,972	31,007
Actuarial Surplus/(Deficit)	4,119	579

As at 31 March 2022, the Pension Fund has a surplus of \$4,119 million and the funding ratio is 111.1%. As such, no special payments are required and there is no non-permitted surplus¹.

¹ A non-permitted surplus exists when the amount by which assets exceed liabilities in the CFPF as determined by the actuarial valuation report referred to in section 56 of the CFSA or one requested by the President of Treasury Board is greater than 25 percent of the amount of liabilities as determined in that report.

4.1.3 Reserve Force Pension Fund

Table 5 Financial Position - Reserve Force Pension Fund (\$ millions)		
Components of financial position	31 March 2022	31 March 2019
Actuarial Value of Assets		
Market value of assets	864	613
Actuarial smoothing adjustment	(86)	(50)
Present value of prior service contributions	33	38
Amount payable to Regular Force pension plan	<u>(73)</u>	<u>(63)</u>
Total Actuarial Value of Assets	738	538
Actuarial Liability		
Active contributors	483	481
Retirement pensioners	287	215
Disability pensioners	0	1
Surviving dependents	5	4
Outstanding payments	<u>17</u>	<u>10</u>
Total Actuarial Liability	792	711
Actuarial Surplus/(Deficit)	(54)	(173)

In accordance with section 87 of the *Reserve Force Pension Plan Regulations*, the actuarial deficit is amortized with equal annual instalments over a period of 15 years. Taking into account the special payment of \$17.4 million that was made on 31 March 2023, the actuarial deficit of \$54 million could be amortized in 15 equal annual payments of \$4.1 million beginning on 31 March 2024.

4.2 CFSA - Reconciliation of the changes in financial position

Table 6 presents the reconciliation of the changes in financial positions of the Superannuation Account, CFPF and the RFPF. Explanations of the main items responsible for the changes follow the table.

Table 6 Reconciliation of financial position from plan year 2019 to 2022 by account
(\$ millions)

Components of Reconciliation of the financial position	Superannuation Account Actuarial Excess/(Shortfall)	CFPF Actuarial Surplus/(Deficit)	RFPF Actuarial Surplus/(Deficit)
Financial position as at 31 March 2019	(2,427)	579	(173)
Recognized investment gains/(losses) as at 31 March 2019	n/a	1,928	50
Change in methodology	(70)	34	0
Retroactive changes to the population data	(59)	(15)	0
Revised initial financial position as at 31 March 2022	(2,556)	2,526	(123)
Expected interest on initial financial position	(218)	412	(26)
Special credits or payments	2,691	159	40
Net experience gains and (losses)	(268)	4,113	84
Revision of actuarial assumptions	(2,739)	935	68
Change in the present value of prior service contributions	(7)	(84)	(11)
Change in the present value of administrative expenses	(3)	n/a	n/a
Unrecognized investment (gains)/losses as at 31 March 2022	0	(3,942)	(86)
Financial position as at 31 March 2022	(3,100)	4,119	(54)

4.2.1 Recognized investment gains as at 31 March 2019

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, causing the actuarial value of the CFPF assets to be \$1,928 million less than their market value. The same actuarial asset valuation method was used for the RFPF, causing the actuarial value of the RFPF assets to be \$50 million less than their market value.

4.2.2 Change in methodology

Two changes occurred since the last valuation:

- 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.2.6.

The combined changes increased the Superannuation Account liability by \$70 million and decreased the Pension Fund liability by \$34 million. The impact was negligible for the Reserve Force Pension Fund.

4.2.3 Retroactive changes to the population data

The net impact of the retroactive changes to the population data received from PSPC resulted in an increase of \$59 million in the Superannuation Account actuarial liabilities and an increase of \$15 million in the CFPF actuarial liabilities.

4.2.4 Expected interest on revised initial financial position

The amount of interest expected to accrue during the intervaluation period increased the revised actuarial shortfall by \$218 million for the Superannuation Account, increased the revised actuarial surplus by \$412 million for the CFPF and increased the revised actuarial deficit by \$26 million for the RFPF.

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

4.2.5 Special credit and payments made in the intervaluation period

An actuarial shortfall of \$2,427 million was reported in the Superannuation Account as at 31 March 2019. The government made a one-time credit of \$2,605 million as at 31 March 2021 which resulted in an increase of \$2,691 million in the recorded balance of the Account as at 31 March 2022.

Even though no actuarial deficit was reported in the CFPF in the 31 March 2019 report, before the 31 March 2019 report was tabled, the government made a special payment of \$145 million as at 31 March 2020 as per requested in the 31 March 2016 report. This payment resulted in an increase of \$159 million in the CFPF as at 31 March 2022.

A deficit of \$173 million was reported in the RFPF as at 31 March 2019 which was to be amortized over a period of 15 years in accordance with the *Reserve Force Pension Plan Regulations*. A total of \$39 million of special payments were made to the RFPF during the intervaluation period that resulted in an increase of \$40 million in assets after including the expected interest to 31 March 2022.

4.2.6 Experience gains and losses

Since the previous valuation, experience gains and losses have increased the Superannuation Account actuarial shortfall by \$268 million. The CFPF actuarial surplus has increased by \$4,113 and RFPF actuarial deficit has decreased by \$84 million due to the experience gains and losses over the three-year intervaluation period. The main experience gain and loss items are described in Table 7.

Table 7 Experience gains and losses from plan year 2019 to 2022 by account
(\$ millions)

Component of experience gains and (losses))	Superannuation		
	Account	CFPF	RFPP
Terminations	3	39	2
Rollover Experience	n/a	n/a	(39)
Retirements	43	12	2
Disabilities	22	(6)	0
Mortality (i)	(105)	46	4
Promotional and seniority salary increases (ii)	(74)	(309)	0
Interest and investment earnings (iii)	8	4,845	137
Pension indexation (iv)	(120)	(49)	(1)
Economic increases in pensionable earnings (v)	(37)	(273)	(5)
Transfer value rates (vi)	0	(71)	(9)
PBDA payments	32	(93)	0
Miscellaneous	(40)	(28)	(8)
Total experience gains and (losses)	(268)	4,113	84

- (i) The actual number of deaths was different than expected which resulted in a loss of \$105 million in the Superannuation Account, a gain of \$46 million in the CFPP, and a gain of \$4 million in the RFPP
- (ii) Salary increases not attributable to the economic increases during the intervaluation period were significantly higher than expected. This resulted in losses of \$74 million in the Superannuation Account and of \$309 million in the CFPP.
- (iii) The investment return on both Pension Funds exceeded expectations during the intervaluation period. This resulted in an investment gain of \$4,845 million for the CFPP and an investment gain of \$137 million for the RFPP.
- (iv) The Pension indexation awarded in 2021 and 2022 was higher than expected which created losses of \$120 million for the Superannuation Account, \$49 million for the CFPP and \$1 million for the RFPP.
- (v) Economic salary increases during the intervaluation period were higher than expected. This resulted in losses of \$37 million in the Superannuation Account and of \$273 million in the CFPP and \$5 million in the RFPP.
- (vi) Real interest rates (see Appendix F.3.4) during the intervaluation period from which the transfer values are derived were lower than expected, resulting in higher lump sum payments. Under the CFPP, \$71 million more than expected was paid in lump sum as well as \$9 million more than expected from the RFPP.

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. This revision has increased the Superannuation Account actuarial liability by \$2,739 million, reduced the CFPF actuarial liability by \$935 million and decreased the RFPF actuarial liability by \$68 million. The impacts of these revisions are shown in the following table and the most important items are discussed thereafter.

Table 8 Impact of the revision of actuarial assumptions on the actuarial liability by account
(\$ millions)

Actuarial assumption	Superannuation Account	CFPF	RFPF
Yields and rates of return	206	2,103	40
Increases in pensionable earnings and YMPE/MPE	(1)	44	2
Pension indexation	(3,172)	(1,366)	(24)
Transfer value rates	0	154	35
Mortality rates and improvement factors	165	40	1
Withdrawal rates ^a	0	(113)	(39)
Retirement rates	4	21	33
Disability rates	1	144	3
Seniority and promotional increases	(1)	(186)	0
Proportion opting for a deferred annuity	0	56	15
Family composition	59	38	2
Net impact of revision	(2,739)	935	68

a. Including rollover rates from the Reserve Force Plan to the Regular Force Plan.

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

- the known pension indexation of 6.3% of 1 January 2023 and the increase of our assumption of 1 January 2024 to 5.1%; and
- the increase in the expected return on assets assumptions for the Canadian Forces Pension Fund and the Reserve Force Pension Fund.

The impact of the change on the yields to the Superannuation Account are of lesser importance than the CFPF and the RFPF as the ultimate nominal yield was reduced from 4.5% to 4.0%; while nominal yields for the plan years 2023 through 2040 were increased. The equivalent flat nominal yield for the purpose of calculating the actuarial liability as at 31 March 2022 is 3.00% compared to a flat rate of 2.97% based on the stream of nominal yields from the previous valuation. As a result, there is a negligible decrease in the actuarial liability of the Superannuation Account.

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

Details of the changes in demographic assumptions, in particular for mortality rates, are described in Appendix G.

4.2.8 Change in the present value of prior service contributions

The expected total government cost is shown in Table 30. The government is expected to make additional contributions in excess of the current service cost for members' prior service elections. The change in the present value of prior service contributions corresponds to members' elections since the last report where the members opted to pay for these elections by instalments. Members' prior service elections paid through instalments increased the Superannuation Account by \$7 million and the CFPF and the RFPF assets by \$84 million and \$11 million less than expected respectively.

4.2.9 Change in the present value of administrative expenses for the Superannuation Account

The previous report annual administrative expenses assumption of 0.55% of total pensionable payroll is increased to 0.60% in this report. This increase is based on average administrative expenses observed during the intervaluation period.

For plan year 2023, 40.0% 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 same rate of 2.5% per year as assumed in the previous valuation.

4.2.10 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.2, resulted in an actuarial value of the CFPF and the RFPF assets that are \$3,942 and \$86 million less than their respective market values as at 31 March 2022.

4.3 CFSA - Cost certificate

4.3.1 Current service cost

The details of the current service cost for plan year¹ 2024 and reconciliation with the 2021 current service cost are shown below.

Components of current service cost	CFPF	RFPF
Members required contributions	590.0	24.1
Government current service cost	<u>869.7</u>	<u>45.8</u>
Total current service cost	1,459.7	69.9
Total current service cost as % of expected pensionable payroll	25.30%	15.12%

Component of reconciliation of current service cost	CFPF	RFPF
Current service cost for plan year 2021	27.54	18.65
Expected current service cost change between plan years 2021 and 2024	(0.82)	(0.66)
Change in methodology	0.39	(0.13)
Intervaluation experience	(0.19)	(0.39)
Changes in administration expenses assumption	0.04	(0.47)
Changes in demographic assumptions	0.02	0.20
Changes in economic assumptions	(1.68)	(2.08)
Current service cost for plan year 2024	25.30	15.12

¹ Any reference to a given plan year throughout this report should be taken as the 12-month period ending 31 March of the given year.

4.3.2 Projection of current service costs

The current service cost is borne jointly by the plan members and the government. The Regular Force Plan member contribution rates are determined on a calendar year basis and they have been changed since the last valuation. Contribution rates are set equal to the contribution rates of Group 1 contributors under the PS pension plan. Contribution rates for the Reserve Force Plan members are set by regulation. The contribution rates are as follows:

Table 11 Member contribution rates by pension plan

Calendar year	Regular Force below YMPE	Regular Force above YMPE	Reserve Force
2022	9.36%	12.48%	5.20%
2023	9.35%	12.37%	5.20%
2024 and after	9.35%	12.25%	5.20%

Current service costs on a plan year basis, expressed as a percentage of the projected pensionable payroll as well as in dollar amounts are shown in Table 12 and Table 13 for Regular Force Plan members and in Table 14 and Table 15 for Reserve Force Plan members. Member contributions and the government current service costs are also shown on a calendar year basis in Table 16 to Table 19.

Table 12 Projection of current service cost of the CFPF on a plan year basis (\$ millions)

Plan Year	Contributors	Government	Total
2024	590	870	1,460
2025	611	916	1,527
2026	638	968	1,606
2027	669	1,025	1,694

Table 13 Projection of current service cost of the CFPF on a plan year basis (% of pensionable payroll)

Plan Year	Contributors	Government	Total
2024	10.23	15.07	25.30
2025	10.19	15.28	25.47
2026	10.16	15.40	25.56
2027	10.12	15.52	25.64

Table 14 Projection of current service cost of the RFPF on a plan year basis (\$ millions)

Plan year	Contributors	Government	Total
2024	24.0	45.9	69.9
2025	25.6	48.7	74.3
2026	27.2	51.4	78.6
2027	28.9	54.2	83.1

Table 15 Projection of current service cost of the RFPF on a plan year basis
(% of pensionable payroll)

Plan year	Contributors	Government	Total
2024	5.20	9.92	15.12
2025	5.20	9.89	15.09
2026	5.20	9.81	15.01
2027	5.20	9.77	14.97

Table 16 CFPPF current service cost on a calendar year basis
(\$ millions)

Calendar year	Contributors	Government	Total
2024	606	904	1,510
2025	631	955	1,586
2026	661	1,011	1,672

Table 17 CFPPF current service cost on a calendar year basis
(% of pensionable payroll)

Calendar year	Contributors	Government	Total	Ratio of Government to contributors' current service cost
2024	10.20	15.23	25.43	1.49
2025	10.16	15.38	25.54	1.51
2026	10.13	15.49	25.62	1.53

Table 18 RFPF current service cost on a calendar year basis
(\$ millions)

Calendar year	Contributors	Government	Total
2024	25.2	48.0	73.2
2025	26.8	50.7	77.5
2026	28.5	53.5	82.0

Table 19 RFPF current service cost on a calendar year basis
(% of pensionable payroll)

Calendar year	Contributors	Government	Total	Ratio of Government to contributors' current service cost
2024	5.20	9.90	15.10	1.90
2025	5.20	9.83	15.03	1.89
2026	5.20	9.78	14.98	1.88

4.3.3 Administrative expenses

Based upon the assumptions described in Appendix F.3.5, the CFPF and the RFPF administrative expenses are included in the total current service costs. As for the previous report, the expected administration expenses exclude PSP operating expenses as these are recognized implicitly through a decrease in the real rate of return. The estimated administrative expenses are shown in the following table:

Plan Year	Superannuation Account	CFPF	RFPF
2023	13.9	20.9	6.5
2024	13.4	22.3	6.9
2025	13.0	24.1	7.3
2026	12.6	26.2	7.8
2027	12.3	28.6	8.2

The Superannuation Account administrative expenses have been capitalized and increase the liability for service accrued prior to 1 April 2000.

4.3.4 Contributions for prior service elections

Based on the valuation data and the assumptions described in Appendices F.2 and F.3 and recent statistical information provided by the PSPC, member and government contributions for prior service elections were estimated as follows:

Plan Year	Superannuation		CFPF		RFPF	
	Account contributors	Account government	contributors	government	contributors	RFPF government
2025	1.3	1.3	15.0	24.5	2.0	3.2
2025	1.3	1.3	15.0	24.5	1.9	3.1
2026	1.2	1.2	14.4	23.5	1.9	3.0
2027	1.0	1.0	13.6	22.2	1.7	2.8
2028	0.9	0.9	12.6	20.5	1.4	2.4

a. There is no contribution for prior service to the RCA

4.4 Sensitivity to variations in key economic assumptions

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

Given the length of the projection period and the number of assumptions required, it is unlikely that the actual experience will develop precisely in accordance with best-estimate assumptions that underlie the

actuarial estimates. Individual sensitivity tests have been performed using alternative assumptions.

Table 22 presents the effect on the plan year 2024 current service cost for the Regular Force Plan and the Reserve Force Plan when key economic assumptions are varied by one percentage point per annum.

Similarly, Table 23 presents the effect on the liabilities as at 31 March 2022 for the Regular Force Plan and the Reserve Force Plan when key economic assumptions are varied by one percentage point per annum.

Table 22 Sensitivity of current service cost for plan year 2024 to variations in key economic assumptions by pension plan (% of pensionable payroll)

Assumption Varied	Regular Force	Effect	Reserve Force	Effect
None (i.e. current basis)	25.30	None	15.12	None
Investment yield is 1% higher	20.33	(4.97)	13.30	(1.81)
Investment yield is 1% lower	32.18	6.88	18.01	2.89
Pension indexation is 1% higher	28.94	3.64	16.33	1.21
Pension indexation is 1% lower	22.43	(2.87)	14.19	(0.93)
Salary, wage, YMPE and MPE are 1% higher	27.47	2.16	15.94	0.83
Salary, wage, YMPE and MPE are 1% lower	23.42	(1.88)	14.39	(0.73)
Inflation is 1% higher ^a	24.75	(0.56)	14.84	(0.27)
Inflation is 1% lower ^a	25.89	0.58	15.39	0.27

a. The inflation is an underlying assumption for most economic assumptions. A change in inflation impacts nominal investment yield/return, pension indexation, as well as salary, wage, YMPE, and MPE

Table 23 Sensitivity of actuarial liability as at 31 March 2022 to variations in key economic assumptions by account (in \$ millions)

Assumption Varied	Superannuation		CFPF	Effect	RFPF	Effect
	Account	Effect				
None (i.e. current basis)	48,422	None	36,972	None	792.0	None
Investment yield is 1% higher	42,887	(5,535)	31,612	(5,360)	683.1	(108.9)
Investment yield is 1% lower	55,255	6,833	44,172	7,200	936.5	144.5
Pension indexation is 1% higher	55,002	6,580	42,386	5,414	894.6	102.6
Pension indexation is 1% lower	42,984	(5,438)	32,806	(4,166)	711.8	(80.2)
Salary, wage, YMPE and MPE are 1% higher	48,454	32	38,161	1,189	820.0	28.0
Salary, wage, YMPE and MPE are 1% lower	48,390	(32)	36,092	(880)	767.6	(24.4)
Inflation is 1% higher ^a	48,294	(128)	36,664	(308)	784.0	(8.0)
Inflation is 1% lower ^a	48,554	132	37,497	525	800.4	8.4

a. Change in inflation impacts nominal investment yield/return, pension indexation, as well as salary, wage, YMPE, and MPE

4.5 Assessing and illustrating downside risks

This section focuses on assessing and illustrating downside risks due to potential adverse scenarios. It illustrates the potential impacts of a decrease in the nominal yield on 10-year-plus Government of Canada bonds, as well as the potential impact of a scenario where future longevity improvement is higher than expected. Downside risks of future investment returns are illustrated in Appendix J.3.

Given the purpose of this section, only adverse scenarios are presented. This section is not meant to represent forecasts or predictions and should be interpreted with caution.

4.5.1 Decrease in the nominal yield on 10-year-plus Government of Canada bonds

In the event of a decrease of 1% in the nominal yield on 10-year-plus Government of Canada bonds, the resulting new money rate and consequently, the government's real cost of borrowing would also decrease by 1%. The financial impact on the Superannuation Account of this plausible adverse scenario would be an increase of \$6,833 million in actuarial liabilities.

Considering the high termination and rollover incidence in the Reserve Force Plan, there would be a notable potential impact to the RFPF if a similar event resulted in a decrease of 1% in the assumed transfer value real interest rates (details in Appendix F.3.4). The financial impact on the RFPF of this plausible adverse scenario would be an increase of \$72.7 million in actuarial liabilities, and an estimated increase representing 3.28% of pensionable payroll in the current service cost.

4.5.2 Future longevity improvement higher than expected

Mortality rates are reduced in the future in accordance with the same longevity improvement assumption used in the 31st Actuarial Report on the Canada Pension Plan. Mortality improvements are expected to continue in the future but at a slower pace, reaching the ultimate improvement rate of 0.8% for ages below 89 in plan year 2040. If these improvement factors were underestimated, future mortality would be lower than expected. For example, the financial impact of a possible adverse scenario where the ultimate longevity improvement was 50% higher than projected would be:

- an increase of \$132 million in actuarial liabilities of the Superannuation Account,
- an increase of \$172 million in actuarial liabilities of the CFPF,
- an increase of \$6 million in actuarial liabilities of the RFPF,
- an increase of 0.18% of pensionable payroll in the CFPF current service cost, and
- an increase of 0.18% of pensionable payroll in the RFPF current service cost.

The cohort life expectancy of a member aged 65 would be impacted, as presented in the table below:

Table 24 Sensitivity of cohort life expectancy at age 65 to variation in longevity improvement factors as at 31 March 2022 and as at 31 March 2042
(Years)

Longevity improvement factors	As at 31 March 2022			As at 31 March 2042		
	Male officer	Male other rank	Female	Male officer	Male other rank	Female
Best-Estimate	23.5	20.8	24.4	24.6	22.0	25.5
if ultimate 50% higher	23.6	20.9	24.6	25.1	22.6	26.2

4.6 RCA – Financial position

This section shows the financial position of the RCA Account as at 31 March 2022. The results of the previous valuation are also shown for comparison.

Table 25 State of the RCA Account
(\$ millions)

Components of financial position	31 March 2022	31 March 2019
Actuarial value of assets		
Recorded account balance	499	443
Tax credit (CRA refundable tax)	<u>493</u>	<u>439</u>
Total assets	992	882
Actuarial liability		
Pensionable excess earnings from active contributors	482	415
Pensionable excess earnings from pensioners	356	264
Survivor allowance from active contributors	18	7
Survivor allowance from pensioners	<u>64</u>	<u>41</u>
Total actuarial liability	920	727
Actuarial excess or shortfall	72	155

The sum of the recorded balance of the RCA Account and the tax credit (CRA refundable tax) is \$992 million; it exceeds the actuarial liability of \$920 million by \$72 million as at 31 March 2022 (\$155 million as at 31 March 2019). The SRAA does not allow for an adjustment to be made to the RCA Account that would allow the recorded balance to track the actuarial liability when there is an actuarial excess.

4.7 RCA – Current service cost

The projected current service cost, borne jointly by the members and the government, of 0.67% of pensionable payroll for plan year 2024 calculated in the previous valuation has increased to 0.76% in this valuation. The RCA current service cost is estimated to stay at 0.76% of pensionable payroll for Plan year 2024 to Plan year 2027 as shown the following table. Members' contributions and the government current service costs are also shown on a calendar year basis in Table 27 and Table 28.

Table 26 Current service cost of the RCA by plan year
(\$ millions)

Components of current service cost	Plan year 2024	Plan year 2025	Plan year 2026	Plan year 2027
Pensionable excess earnings	43.0	44.7	46.8	49.4
Survivor Allowance	1.0	1.0	1.0	1.0
Total current service cost	44.0	45.7	47.8	50.4
Less member contributions	(5.9)	(6.1)	(6.4)	(6.8)
Government current service cost	38.1	39.6	41.4	43.6
Current service cost as % of total pensionable payroll	0.76%	0.76%	0.76%	0.76%

Table 27 RCA current service cost on a calendar year basis
(\$ millions)

Calendar year	Contributors	Government	Total
2024	6.1	39.2	45.3
2025	6.3	41.0	47.3
2026	6.7	43.0	49.7

Table 28 RCA current service cost on a calendar year basis
(% of pensionable payroll)

Calendar year	Contributors	Government	Total	Ratio of Government to contributors current service cost
2024	0.10	0.66	0.76	6.60
2025	0.10	0.66	0.76	6.60
2026	0.10	0.66	0.76	6.60

4.8 Summary of estimated government cost

The following tables summarize the estimated total government credit and cost on a plan year basis.

Table 29 Estimated government credit
(\$ millions)

Plan year	Superannuation Account				Total government credit
	RCA current service cost	total prior service contributions	Superannuation Account special credit	RCA special credit	
2024	38.1	1.4	3,298.4	0.0	3,337.9
2025	39.6	1.3	0.0	0.0	40.9
2026	41.4	1.2	0.0	0.0	42.6

Table 30 Estimated government cost
(\$ millions)

Plan year	CFPF current service cost	RFPF current service cost	CFPF prior service contributions	RFPF prior service contributions	RFPF special payment	Total government cost
	CFPF current service cost	RFPF current service cost	CFPF prior service contributions	RFPF prior service contributions	RFPF special payment	
2024	869.7	45.9	25.5	3.2	17.4	961.7
2025	915.9	48.7	24.5	3.1	4.1	996.3
2026	967.8	51.4	23.5	3.0	4.1	1,049.8

5 Actuarial opinion

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

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

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

To the best of our knowledge, after discussion with the Department of National Defence, there were no events between the valuation date and the date of this report that would have a material impact on the results of this valuation.



Assia Billig, FCIA, FSA
Chief Actuary



John Kmetc, FCIA, FSA
Senior Actuary



Yann Bernard, FCIA, FSA
Senior Actuary

Ottawa, Canada

29 September 2023

Appendix A — Summary of pension benefit provisions

Pensions for members of the regular force were first provided under the Militia Pension Act of 1901, when in 1950 it became the *Defence Services Pension Act* until the *Defence Services Pension Continuation Act* and the *Canadian Forces Superannuation Act* (CFSA) were enacted in 1959. Benefits are also provided to members of the regular force under the *Special Retirement Arrangements Act*.

The enactment of Bill C-78 on 21 September 1999 gave authority to create a pension plan for the members of the reserve force. The Reserve Force Plan was established on 1 March 2007 and provides pension benefits to part-time members of the reserve force who meet the threshold requirements for becoming plan members. The benefit eligibility rules under this plan are the same as the rules that apply to Regular Force members starting on 1 March 2007.

Benefits under both the Regular Force Plan and the Reserve Force Plan may be reduced in accordance with the *Pension Benefits Division Act* if there is a breakdown of a spousal union.

This appendix summarizes the pension benefits for both Regular Force members and Reserve Force members, provided under the CFSA registered provisions, which are in compliance with the *Income Tax Act*. For the Regular Force Plan, the portion of the benefits in excess of the *Income Tax Act* limits for the registered provisions is provided under the RCA described in Appendix B.

The legislation shall prevail if there is a discrepancy between it and this summary.

A.1 Changes since the last valuation

The previous valuation report was based on the pension benefit provisions as they stood as at 31 March 2019. There were no changes to the plan provisions since the last valuation.

A.2 Membership

Regular Force membership in the Regular Force Plan is compulsory for all full-time members of the Canadian Forces.

As of 1 March 2007, a member of the reserve force is considered to be a member of the regular force and will become a member of the Regular Force Plan,

- on 1 March 2007 if, on that date,
 - the member's total number of days of paid Canadian Forces service during any period of 60 months beginning on or after 1 April 1999 was no less than 1,674,
 - the member already was or became a member of the Canadian Forces during the first month of the period and remained a member of the Canadian Forces throughout the period without any interruption of more than 60 days,
 - the member is not a person required to contribute to the Public Service Pension Fund or the Royal Canadian Mounted Police Pension Fund, and
 - the member does not have any pensionable service to their credit under Part I of the CFSA;
- in any other case, on the first day of the month following a period of 60 months ending after 1 March 2007 if

- the member's total number of days of paid Canadian Forces service during the period was no less than 1,674,
- the member already was or became a member of the Canadian Forces during the first month of the period and remained a member of the Canadian Forces throughout the period without any interruption of more than 60 days, and
- the member does not have any pensionable service to their credit under Part I of the CFSA.

The general rule is that, once a Reserve Force member is deemed a Regular Force member for the purposes of Part I of the CFSA and does not fail to receive pensionable earnings in any 12 consecutive months, the member remains a contributor under Part I of the CFSA as long as they remain a member of the Reserve Force. There are exceptions to the general rule previously described but for the purpose of this report, these were considered immaterial.

A member of the reserve force is deemed to become a participant in the Reserve Force Plan, defined under Part I.1 of the CFSA, if,

- during each of any two consecutive periods of 12 months beginning on or after 1 April 1999 and ending no later than 1 March 2007, the earnings that the member was entitled to receive were at least 10 per cent of the Annual Earnings Threshold¹, provided that the member already was or became a member of the Canadian Forces during the first month of the first period and remained a member of the Canadian Forces, without any interruption of more than 60 days, until 1 March 2007; or
- in any other case, on the first day of the month following two consecutive periods of 12 months, the second of which ending after 1 March 2007 and during each of which the earnings that they were entitled to receive were at least 10 per cent of the Annual Earnings Threshold, provided that the member already was or became a member of the Canadian Forces during the first month of the first period and remained a member of the Canadian Forces, without any interruption of more than 60 days, throughout those two periods.

¹ Annual Earnings Threshold is equal to the sum of 1/12 of the Year's Maximum Pensionable Earnings over any 12-month period.

A.3 Contributions

A.3.1 Members

For Regular Force 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 Regular Force member 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. The contribution rates shown after calendar year 2024 are not final and are subject to change.

Calendar year	2022	2023	2024	2025
Contribution rates on earnings up to the maximum covered by the Canada Pension Plan	9.36%	9.35%	9.35%	9.35%
Contribution rates on earnings over the maximum covered by the Canada Pension Plan	12.48%	12.37%	12.25%	12.25%

For Reserve Force members, during the first 35 years of pensionable service, members contribute 5.2% on all earnings up to 66 2/3 times the defined benefit limit as determined under the Income Tax Regulations. After 35 years of pensionable service, members contribute only 1% of pensionable earnings.

A.3.2 Government

A.3.2.1 Current service

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

A.3.2.2 Elected prior service

The government matches Regular Force member contributions credited under the Superannuation Account for prior service elections; however, no contributions are credited if the member is paying the double rate.

Government credits to the Canadian Forces Pension Fund in respect of elected prior service are as described for current service; however, if the member is paying the double rate the government contribution rate is generally adjusted so that total member and government contributions match the current service cost.

For Reserve Force members, this valuation assumes that the government will match member contributions for prior service elections.

A.3.2.3 Actuarial excess and surplus

In accordance with the CFSA, the government has the authority to:

- debit the excess of accounts available for benefits over the actuarial liability from the Superannuation Account subject to limitations, and
- deal with any actuarial surplus, subject to limitations, in the Canadian Forces Pension Fund as it occurs, either by reducing members and/or employer contributions or by making withdrawals.

The regulations under Part I.1 of the CFSA give the government the authority to deal with any actuarial surplus, subject to limitations, in the RFPF as it occurs by reducing employer contributions.

A.3.2.4 Actuarial shortfall and actuarial deficit

In accordance with the CFSA, if an actuarial shortfall under the Superannuation Account is identified through a statutory actuarial report, the actuarial shortfall can be amortized over a period of up to 15 years, such that the 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 1 April 2000.

If an actuarial deficit under the CFPP is identified through a statutory actuarial report, the actuarial deficit can be amortized over a period of up to 15 years, such that the 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 Canadian Forces Pension Fund at that time, meet the cost of the benefits payable in respect of pensionable service since 1 April 2000.

Similarly, if an actuarial deficit under the RFPF is identified through a statutory actuarial report, the RFPF is to be credited with such annual amounts that will fully amortize the actuarial deficit over a period of 15 years.

A.4 Summary description of benefits under the Regular Force Plan and the Reserve Force Plan

The objective of the Regular Force Plan and the Reserve Force 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 in case of death are also provided.

Regular Force Plan pension benefits are coordinated with the pensions paid by the CPP. The initial rate of a Regular Force Plan member's retirement pension is equal to 2% of the highest average of annual pensionable earnings over any period of five consecutive¹ years, multiplied by the number of years of pensionable service not exceeding 35. The pension is indexed annually with the Consumer Price Index (CPI) and the accumulated indexation may be payable at age 55 at the earliest as defined in Appendix A.5.6. Entitlement to benefits depends on either the qualifying service in the Canadian Forces or the pensionable service, as defined below in Appendices A.5.7 and A.5.8.

¹ Any five-year period of pensionable service selected by or on behalf of the contributor, or during any period so selected consisting of consecutive periods of pensionable service totalling five years.

Reserve Force Plan member’s pension benefits are equal to 1.5% of the greater of the Reserve Force Plan member’s total pensionable earnings and total updated pensionable earnings over the most recent 35 years of pensionable service (i.e. updated career average plan). The Reserve Force Plan also provides a bridge benefit equal to 0.5% of the greater of the pensioner’s total bridge benefit earnings and total updated bridge benefit earnings over the most recent 35 years of pensionable service. Reserve Force pension and bridge benefits are indexed annually with the Consumer Price Index and the accumulated indexation may be payable at age 55 at the earliest, as defined in Appendix A.5.6.

Entitlement to benefits depends on either the qualifying service in the Canadian Forces or the pensionable service, as defined below in Appendices A.5.7 and A.5.8.

Detailed notes on the following overview are provided in Appendix A.5.

A.4.1 Active member benefit entitlement on the basis of qualifying service

A.4.1.1 Active Regular Force members

Type of termination	Qualifying service in the Canadian Forces (<i>Appendix A.5.7</i>)	Benefit
With less than two years of pensionable service (<i>Appendix A.5.8</i>)		Return of contributions (<i>Appendix A.5.11</i>)
With two or more years of pensionable service (<i>Appendix A.5.8</i>); and		
Retirement on completion of short engagement (an officer other than a subordinate officer who has not reached retirement age and is not serving on an intermediate engagement or for an indefinite period of service) (<i>Appendix A.5.9</i>)	Less than 25 years (less than 20 years – old terms of service)	At option of member (1) deferred annuity (<i>Appendix A.5.13</i>); or (2) transfer value if under age 50 (<i>Appendix A.5.14</i>)
	25 years or more (20 years or more – old terms of service)	See “Retirement for reasons other than those previously mentioned”
Retirement during an indefinite period of service after having completed an intermediate engagement and prior to reaching retirement age, for reasons other than disability or, to promote economy or efficiency	Any length	Immediate annuity to which member was entitled upon completion of intermediate engagement increased to such extent as prescribed by regulation ^a (<i>Appendix A.5.15</i>)
Retirement on completion of intermediate engagement (a member who has not reached retirement age and is not serving for an indefinite period of service) (<i>Appendix A.5.10</i>)	25 years or more (20 years or more – old terms of service)	Immediate annuity (<i>Appendix A.5.12</i>)

a. The CFS limits the annuity to the immediate annuity to which the active member would be entitled if retiring because of age or disability, and the formula in the CFS Regulations (*Appendix A.5.16*) always produces less than the maximum.

Type of termination	Qualifying service in the Canadian Forces (<i>Appendix A.5.7</i>)	Benefit
With less than two years of pensionable service		Return of contributions (<i>Appendix A.5.11</i>)
With two or more years of pensionable service; and		
Compulsory retirement to promote economy or efficiency	Less than 10 years	At option of member (1) deferred annuity (<i>Appendix A.5.13</i>); or (2) transfer value if under age 50 (<i>Appendix A.5.14</i>)
	At least 10 but less than 25 years (less than 20 years – old terms of service)	At option of member (1) return of contributions; or (2) deferred annuity; or (3) transfer value if under age 50 (<i>Appendix A.5.14</i>) (4) with consent of the Minister of National Defence, an immediate reduced annuity (<i>Appendix A.5.16</i>)
	25 years or more (20 years or more – old terms of service)	Immediate annuity (<i>Appendix A.5.12</i>)
Retirement for reasons other than those previously mentioned	Less than 25 years (less than 20 years – old terms of service)	At option of member (1) deferred annuity (<i>Appendix A.5.13</i>); or (2) transfer value if under age 50 (<i>Appendix A.5.14</i>)
	(At least 20 but less than 25 years – old terms of service)	Immediate reduced annuity (<i>Appendix A.5.16</i>)
	25 years or more	Officer: - immediate reduced annuity (<i>Appendix A.5.16</i>); Other rank: - immediate annuity (<i>Appendix A.5.12</i>)

A.4.1.2 Active Reserve Force members

Member's Type of Termination	Benefit
Retirement on completion of 25 years or more of Canadian Forces service (<i>Appendix A.5.7</i>)	Immediate annuity (<i>Appendix A.5.12</i>)

A.4.2 Member benefit entitlement on the basis of pensionable service

A.4.2.1 Active Regular Force members

Type of termination	Years of pensionable service (Appendix A.5.8)	Benefit
Compulsory retirement because of disability ^a	Less than 2 years	Return of contributions (Appendix A.5.11)
	At least 2 but less than 10 years	At option of member (1) deferred annuity (Appendix A.5.13); or (2) transfer value if under age 50 (Appendix A.5.14)
	10 years or more	Immediate annuity (Appendix A.5.12)

- a. Any condition rendering a member of the Regular Force mentally or physically unfit to perform his or her duties. A member is discharged under Q. R. & O. 15.01 Article 3B when he or she is unable to perform the duties of his or her own occupation. A member is discharged under Q.R. & O. 15.01 Article 3A when he or she is unable to perform the duties of any occupation.

A.4.2.2 Active member benefit entitlement

Type of Termination	Benefit
With less than two years of pensionable service	Return of contributions (Appendix A.5.11)
With two or more years of pensionable service; and	
▪ Involuntary termination due to a work force reduction program and	
– With 20 years of service or more	Immediate annuity (Appendix A.5.12)
– Age 50 or over and 10 years of service or more	
▪ Leaving prior to age 50,	
– Except for death or disability	Deferred annuity (Appendix A.5.13) or Transfer value if under age 50 (Appendix A.5.14)
– Disability (Reserve Force only – see A.4.2.1 for Regular Force)	Immediate annuity (Appendix A.5.12)
▪ Leaving at age 50 or over, except for death or disability, and	
– Age 60 or over, or age 55 or over and service 30 years or more	Immediate annuity (Appendix A.5.12)
– Otherwise	Deferred annuity (Appendix A.5.13) or Annual allowance (Appendix A.5.17)

A.4.2.3 Benefits in case of death

Status at Death	Years of pensionable service (Appendix A.5.8)	Benefit
Leaving no eligible spouse or children under 25 (Appendices A.5.18 and A.5.19)	Less than 2 years	Return of contributions
	2 years or more	Minimum death benefit (Appendix A.5.21)
Leaving eligible spouse and/or children under 25	Less than 2 years	Return of contributions or an amount equal to one month's earnings of the deceased member for each year of credited pensionable service, whichever is the greater
	2 years or more	Annual allowance (Appendix A.5.20)

A.5 Explanatory notes

A.5.1 Pensionable earnings

For the Regular Force Plan, pensionable earnings means the salary at the annual rate prescribed by the regulations made pursuant to the *National Defence Act* together with the allowances for medical and dental care costs. Pensionable payroll means the aggregate pensionable earnings of all members with less than 35 years of pensionable service.

For the Reserve Force Plan, earnings means pay earned by a member of the Canadian Forces at the rates prescribed by the regulations made pursuant to the *National Defence Act* together with premiums in lieu of leave. Pensionable earnings means the earnings of a member with less than 35 years of pensionable service, who has completed the required two-year waiting period. Pensionable payroll means the aggregate pensionable earnings of all members.

A.5.2 Wage measure for Reserve Force Plan

Wage measure is

- for a calendar year prior to 2024 , the corresponding rate of pay shown in Table 69 of this report; and
- for a calendar year after 2023 , the greater of
 - the standard basic rate of pay for a period of duty or training of six hours or more, before any retroactive adjustment, that was prescribed or established under the *National Defence Act*, to be paid on October 1 of the preceding year to a member at the rank of Corporal (class A), and
 - the wage measure of the previous year.

A.5.3 Updated pensionable earnings for Reserve Force Plan

The updated pensionable earnings for a calendar year are the Reserve Force member's pensionable earnings for that year, subject to the *Income Tax Act* limits, times A/B, rounded to the nearest fourth decimal place, where

A = the average of the wage measures for five years consisting of the year the member most recently ceased to be a member and the most recent years during which the member was a member and, if necessary, the years preceding all of those years, and

B = the wage measure for that calendar year.

A.5.4 Bridge benefit earnings for Reserve Force Plan

Bridge benefit earnings for a calendar year are the lesser of

- the member's pensionable earnings for that year, and
- the Year's Maximum Pensionable Earnings (YMPE) for that year.

A.5.5 Updated bridge benefit earnings for Reserve Force Plan

Updated bridge benefit earnings for a calendar year are the lesser of

- the member’s updated pensionable earnings for that year, and
- the average of the YMPE for five years consisting of the year the member most recently ceased to be a member and the preceding four years.

A.5.6 Indexation for Regular Force Plan and Reserve Force Plan

A.5.6.1 Level of indexation adjustments

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

A.5.6.2 First Indexation adjustment

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

A.5.6.3 Commencement of indexation payments

Payment of the indexation portion of a retirement, disability or survivor pension normally commences when the pension is put into pay. However, regarding a retirement pension, the pensioner must be at least 55 years old and the sum of age and pensionable service at least 85; or the retirement pensioner must be at least 60 years old.

A.5.7 Qualifying service in the Canadian Forces (Regular Force Plan and Reserve Force Plan)

Qualifying service in the Canadian Forces means service for which a Regular or Reserve Force member is paid, and includes:

- days of service in the Regular Force for which pay was authorized and periods of authorized leave of absence;
 - excluding any service for which a member was paid a return of contributions or lump sum payment under the CFSA that he or she did not elect to repay on subsequent enrolment;
- days of service in the Reserve Force for which pay was authorized and authorized absences for maternity and parental purposes:
 - days of training or duty of less than 6 hours = half-day
 - days of Class “A” service = 1.4 days
 - periods before 1 April 1999 (when duration of period is verifiable but not the number of days) = quarter time
 - during maternity and parental leaves, days of Canadian Forces service are based on service in previous 12 months

A.5.8 Pensionable service

Pensionable service includes any period of service in the Regular Force or Reserve Force in respect of which an active member either (1) made contributions that remain in the Superannuation Account, CFPF or the RFPF, or (2) elected to contribute. It also includes any period of prior service for which an active member was paid a return of contributions or lump sum payment under the CFSA that he or she did elect to repay on subsequent enrolment. It also includes prior service in the Public Service of Canada, the Royal Canadian Mounted Police and the militaries of the Commonwealth of Nations that the member elected to count as pensionable service.

A.5.9 Short engagement for Regular Force Plan

Short engagement means a continuous period of service as a commissioned officer in the regular force for a period not exceeding nine years.

A.5.10 Intermediate engagement for Regular Force Plan

Intermediate engagement means, under the old terms of service, 20 years of continuous service as a member of the regular force. Under the new terms of service, an intermediate engagement is 25 years of continuous service as a member of the regular force.

A.5.11 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 member into the Superannuation Account, the CFPF or the RFPF together with interest. Interest is calculated at the quarterly Pension Fund rate each quarter on the accumulated contributions with interest as at the end of the previous quarter.

A.5.12 Immediate annuity

For Regular Force Plan, immediate annuity means an unreduced pension that becomes payable immediately upon a pensionable retirement or a pensionable disability. The annual amount is equal to 2% of the highest average annual pensionable earnings (Appendix A.5.1) of the active member over any period of five¹ consecutive² years, multiplied by the number of years of pensionable service not exceeding 35. However, if such highest five-year earnings average exceeds the yearly maximum prescribed for the calendar year in which service is terminated, then the annual amount is reduced by 2% of such excess, multiplied by the number of years of pensionable service after April 1995.

When a regular force pensioner attains age 65 or becomes entitled to a disability pension from the CPP, the annual amount of pension is reduced by a percentage of the indexed CPP annual pensionable earnings³ (or, if lesser, the indexed five-year pensionable earnings average on which the immediate annuity is based), multiplied by the years of CPP pensionable service⁴. The applicable percentage is

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

² Any five-year period of pensionable service selected by or on behalf of the contributor, or during any period so selected consisting of consecutive periods of pensionable service totalling five years.

³ Indexed CPP annual pensionable earnings means the average of the YMPE, as defined in the CPP, over the last five years of pensionable service, increased by indexation proportionate to that accrued in respect of the immediate annuity.

⁴ Years of CPP pensionable service, means the number of years of pensionable service after 1965 or after attaining age 18, whichever is later, but not exceeding 35.

0.625%.

For Reserve Force Plan, immediate annuity means an unreduced pension that becomes payable immediately upon a pensionable retirement or a pensionable disability. The annual amount is equal to 1.5% of the greater of the member's total pensionable earnings and total updated pensionable earnings over the most recent 35 years of pensionable service, plus an additional bridge benefit equal to 0.5% of the greater of the member's total bridge benefit earnings and total updated bridge benefit earnings.

For both plans, annuities are payable in equal monthly instalments in arrears until the end of the month in which the pensioner dies or when the disability pensioner recovers from disability. Upon the death of the pensioner, either a survivor allowance (Appendix A.5.20) or a minimum death benefit (Appendix A.5.21) may be payable.

A.5.13 Deferred annuity

Deferred annuity means an annuity that becomes payable to a retirement pensioner when he or she reaches age 60. The annual payment is determined as for an immediate annuity (see Appendix A.5.12 above) but is adjusted to reflect the indexation (see Appendix A.5.6) from the date of termination to the commencement of annuity 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.

A.5.14 Transfer value

Active members who, at their date of termination of pensionable service, are under age 50 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.5.15 Annuity payable upon retirement during an indefinite period of service for Regular Force Plan

For a Regular Force active member who has not reached retirement age and who, while on an indefinite period of service after completing an intermediate engagement, ceases to be a member of the regular force for any reason other than disability, or to promote economy or efficiency, the Canadian Forces Superannuation Regulations (CFSR) prescribe an annuity that is equal to the greater of

- an immediate annuity based on the pensionable service to the date of completion of the intermediate engagement only and the highest consecutive five-year earnings average at date of retirement, and

- an immediate annuity based upon the total pensionable service to the date of retirement and the highest consecutive five-year employment earnings average at that date reduced by 5% for each full year by which
 - in the case of an officer, the age at the date of retirement is less than the retirement age applicable to the member's rank; or
 - in the case of a member of other rank, the age at the date of retirement is less than the retirement age applicable to the member's rank or the period of service in the Regular Force is less than 25 years, whichever is the lesser.

A.5.16 Reduced immediate annuity for Regular Force members

Reduced immediate annuity means an immediate annuity for which the annual amount of the annuity as determined in Appendix A.5.12 is reduced as stated below.

With the consent of the Minister of National Defence, a regular force active member who is required to terminate to promote economy or efficiency and has between 10 and 20 years of service in the regular force may choose an immediate annuity reduced, until attainment of age 65 but not thereafter, by 5% for each full year not exceeding six by which

- the period of service in the regular force is less than 20 years; or
- the age of the active member at the time of retirement is less than the retirement age applicable to the member's rank,

whichever is the lesser.

A regular force active member who, not having reached retirement age, ceases to be a member of the regular force for any reason other than disability, or to promote economy or efficiency, or while on an indefinite period of service is entitled

- as an officer having served in the regular force for 20 years or more, to an immediate annuity reduced by 5% for each full year by which his or her age at the time of retirement is less than the retirement age applicable to his or her rank, or
- as other than an officer having served in the regular force for 20 years or more but less than 25 years, to an immediate annuity reduced by 5% for each full year by which
 - the period of service in the regular force is less than 25 years, or
 - the age at the time of retirement is less than the retirement age applicable to the member's rank,

whichever is the lesser.

When a Regular Force Plan pensioner in receipt of an immediate reduced annuity becomes disabled before reaching age 60, the pensioner ceases to be entitled to that immediate reduced annuity and becomes entitled to an immediate annuity adjusted in accordance with regulations to take into account the amount of any immediate reduced annuity which the pensioner may have received prior to becoming disabled.

A.5.17 Annual allowance for Regular Force and Reserve Force Plan members

Annual allowance for members means an annuity payable immediately on retirement or upon attaining age 50, if later. The amount of the allowance is equal to the amount of the deferred annuity to which the member would otherwise be entitled, reduced by 5% multiplied by the difference between 60 and the age when the allowance becomes payable.

However, if the member is at least 50 years old at termination, and has at least 25 years of pensionable service, then the difference is reduced (subject to the above as a maximum) to the greater of

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

When a member in receipt of an annual allowance becomes disabled before reaching age 60, the annual allowance becomes an immediate annuity adjusted in accordance with regulations to take into account the amount of any annual allowance received prior to becoming disabled.

A.5.18 Eligible surviving spouse or common-law partner

Eligible surviving spouse means the surviving spouse or common-law partner of an active member or pensioner except where

- the active member or pensioner died within one year of marriage, unless the Minister of National Defence is satisfied that the member's health at the time of the marriage justified an expectation of surviving for at least one year; or
- the pensioner married or began a common-law relationship at age 60 or over, unless after such marriage or partnership the pensioner either
 - became a plan contributor again, or
 - made an optional survivor benefit election within 12 months following the marriage to accept a reduced pension so that the new spouse would be eligible for a survivor pension. 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.5.19 Eligible surviving children

Eligible surviving children are all surviving children of an active member or pensioner who are either under age 18, or age 18 or over but under 25 and in full-time attendance at a school or university.

A.5.20 Annual allowance for eligible survivors

Annual allowance means, for the eligible surviving spouse or common-law partner and children of an active member or pensioner, an annuity that becomes payable immediately upon the death of that individual. The amount of the allowance, called a “basic allowance” is different for each Plan.

For **Regular Force Plan**: the basic allowance equals to:

- 1% of the highest average of annual pensionable earnings of the active member over five consecutive years, multiplied by the number of years of pensionable service not exceeding 35.

The annual allowance for a spouse or a common-law partner is equal to the basic allowance except in the case where the spouse became eligible to a survivor pension 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.

Annual allowances are not coordinated with the CPP and are payable in equal monthly instalments in arrears until the end of the month in which the survivor dies or otherwise loses eligibility. If applicable, a residual benefit (Appendix A.5.21) is payable to the estate upon the death of the last survivor.

For **Reserve Force Plan**, the basic allowance equals to:

- 1% of the greater of the pensioner’s total pensionable earnings and total updated pensionable earnings; or,
- if the member was in receipt of an annual allowance at the time of death, an amount equal to $A \times B / C$ where:
 - A = the amount calculated under paragraph (a),
 - B = the amount of the annual allowance, and
 - C = the amount of the deferred annuity to which the pensioner was entitled.
- Each eligible surviving child of a member is entitled to receive,
 - if the member died leaving an eligible surviving spouse, an allowance equal to 1/4 of the basic allowance or, if there are more than two children, to an annual allowance equal to 1/2 of the basic allowance divided by the number of children; or
 - if the member died without leaving an eligible surviving spouse, and
 - there are fewer than four children, an annual allowance equal to 1/2 of the basic allowance, or
 - there are more than three children, an annual allowance equal to 1.5 times the basic allowance divided by the number of children.
- The proportion of the basic allowance that constitutes the annual allowance shall be revised when the number of children who are entitled changes (see Appendix A.5.19).

A.5.21 Minimum death benefit

Upon the death of a contributor or pensioner without an eligible survivor, or when the person(s) receiving the annual survivor's allowance (see Appendix A.5.20) dies shortly thereafter, a death benefit is payable in the form of a lump-sum benefit equal to the difference between the greater of:

- a return of contributions; and
- five times the annual amount of the unreduced basic pension (life and bridge) to which the contributor would have been entitled, or to which the pensioner was entitled, at the time of death,

and all amounts paid to the contributor or pensioner and eligible survivors.

Adjustments for indexation since termination or retirement are excluded from this calculation.

A.5.22 Division of pension in case of spousal union breakdown

In accordance with the *Pension Benefits Division Act* (PBDA), upon the breakdown of a spousal union (including common-law partnership), a lump sum can be transferred upon application supported by a court order or by mutual consent agreement, from the amounts in the Superannuation Account, the CFPF and the RFPF to the credit of an active member or pensioner. As at the transfer date, the maximum transferable amount is half the value of the retirement pension accrued by the active or former member 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 benefits of the active member or pensioner are then reduced accordingly.

As of 31 March 2022, the *Pension Benefits Division Regulations* does not provide the necessary directions to account for the different benefit provisions under the Reserve Force Plan. Hence, the pension accrued for a member of the Reserve Force Plan cannot be divided upon a breakdown of a spousal union at this time.

A.5.23 Rollovers

Certain members who cease to participate in the Reserve Force Plan subsequently become participants in the Regular Force Plan. As described in section 10.2 of CFSR, any period of pensionable service which is to a member's credit under the Reserve Force Plan on the day before the day on which that member becomes a contributor to the Regular Force Plan is rolled over to the Regular Force Plan. Whenever a rollover occurs, the actuarial liability associated with the member under the Reserve Force Plan is immediately extinguished and a new actuarial liability is immediately established under the Regular Force Plan.

There are two main scenarios in which a rollover of service from the Reserve Force Plan to the Regular Force Plan would arise. In the first scenario a member of Reserve Force makes a successful application to join the Regular Force. The member's transfer from the Reserve Force to the Regular Force triggers the rollover of service. In the second scenario the member begins to contribute to the Regular Force Plan by virtue of meeting the criteria described in section 8.1(1) (d) of the CFSR. This occurs upon the completion of a minimum of 55 months of Canadian Forces service within a period of 60 consecutive

months. The member remains in the Reserve Force but is considered to be a member of the Regular Force for the purposes of Part I of the CFSA and the CFSR.

Following a rollover the actuarial liability is removed from Reserve Force Plan and created under the Regular Force Plan and assets are transferred from the RFPF to the CFPPF. For members who are not vested when the rollover occurs, PSPC calculates the amount to transfer between the pension funds in the same manner as a return of contributions. For members who are vested when the rollover occurs, PSPC calculates the amount to transfer between the pension plans as the commuted value of the accrued pension at age 60.

Appendix B — RCA benefit provisions under the Regular Force Plan

This appendix describes the Regular Force Plan pension benefits financed through RCA rather than through the CFSA registered provisions using the Superannuation Account and the CFPF. As described below, RCAs are pension plans not subject to the benefit limitations that apply to registered pension plans because they are taxed on a current rather than on a deferred basis.

Effective 1 May 1995, RCA was established pursuant to the SRAA to provide for all pension benefits in excess of those that may be paid under the CFSA but are limited to be in accordance with the *Income Tax Act* restrictions on registered pension plans.

The following benefits are currently provided under a RCA to the extent that they are in excess of the *Income Tax Act* limits.

Benefit	CFSA registered provisions limit
Survivor allowance for service from 1 January 1992 onward (see A.5.20)	<p><u>Pre-retirement death</u></p> <ul style="list-style-type: none"> Maximum spouse allowance is two-thirds of the greater of A and B; and Maximum aggregate dependants' allowance is the greater of A and B, where <p>A is the amount of member annuity earned to date of death, and B is the projected member's retirement benefit at age 65 based on current salary history, limited to 1.5 times the YMPE in effect during the year of the member's death.</p> <p><u>Post-retirement death</u></p> <p>The amount of spouse allowance is limited in any year to a maximum of two-thirds the retirement benefit that would have been payable to the member in that year.</p>
Minimum lump sum death benefit (see A.5.21)	<p><u>Pre-retirement death</u></p> <p>The amount of pre-retirement death benefit where the member has no eligible dependants is limited to the greater of the member contributions with interest and the present value of the member's accrued benefits on the day prior to death.</p> <p><u>Post-retirement death</u></p> <p>If the member has no eligible dependants at retirement, then the minimum death benefit is limited to the member contributions with interest.</p>
Excess pensionable earnings (provided since 1 May 1995 for service since then)	The highest consecutive average pensionable earnings is subject to a prescribed yearly maximum that varies by calendar year and the registered plan's benefit formula. The calendar year 2023 Maximum Pensionable Earnings was 196,200 for the Regular Force Plan.

Appendix C — Assets, accounts and rates of return

C.1 Assets and accounts available for benefits

The government has a statutory obligation to fulfill the pension promise enacted by legislation to members of the Regular Force Plan. Since 1 April 2000, the government has earmarked invested assets to meet the cost of pension benefits under the CFPF. For the RFPF, the government has earmarked invested assets since its inception on 1 March 2007.

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

C.2 Canadian Forces Superannuation Account

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

The Superannuation Account was credited with all Regular Force 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 for periods before 1 April 2000 but credited after that date. 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 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 32 Reconciliation of balances in Superannuation Account for plan year 2019 to 2022
 (\$ millions)

Components of plan year balance	Balance in 2020	Balance in 2021	Balance in 2022	Total balance 2020 to 2022
Public accounts opening balance	45,607	44,742	46,322	45,607
Income				
Net interest earnings	1,682	1,514	1,512	4,708
Employer contributions	2	2	2	6
Member contributions	2	2	2	6
Transfers received	-	-	-	-
Actuarial liability adjustments	<u>-</u>	<u>2,605</u>	<u>-</u>	<u>2,605</u>
Income subtotal	1,686	4,123	1,516	7,325
Expenditures				
Annuities	2,511	2,510	2,503	7,524
Pension divisions	23	14	15	52
Return of contributions	-	-	-	-
Pension transfer value payments	1	1	1	3
Transfers to other pension plans	-	-	-	-
Minimum benefits	-	-	-	-
Administrative expenses	<u>16</u>	<u>18</u>	<u>16</u>	<u>50</u>
Expenditures subtotal	2,551	2,543	2,535	7,629
Public accounts closing balance	44,742	46,322	45,303	45,303

Since the last valuation, the Superannuation Account balance has decreased by \$304 million (a 0.7% decrease) to reach \$45,303 million as at 31 March 2022.

C.3 Canadian Forces Pension Fund (CFPF)

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

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

Table 33 Reconciliation of Balances in Canadian Forces Pension Fund
(\$ millions)

Components of plan year balance	Balance in 2020	Balance in 2021	Balance in 2022	Total balance 2020 to 2022
Opening balance	33,123	33,401	40,041	33,123
Income				
Net investment Earnings	(199)	6,185	4,384	10,370
Employer contributions	799	941	923	2,663
Member contributions	532	610	566	1,708
Transfers received	57	60	34	151
Actuarial liability adjustments	145	-	-	145
Income subtotal	1,334	7,796	5,907	15,037
Expenditures				
Annuities	773	854	956	2,583
Pension divisions	47	35	36	118
Return of contributions	2	1	2	5
Pension transfer value payments	214	243	267	724
Transfers to other pension plans	2	2	-	4
Minimum benefits	2	1	2	5
Administrative expenses	16	20	22	58
Expenditures subtotal	1,056	1,156	1,285	3,497
Closing balance	33,401	40,041	44,663	44,663

Since the last valuation, the CFPF balance has increased by \$11,540 million (a 34.8% increase) to reach \$44,663 million as at 31 March 2022.

C.4 Canadian Forces RCA Account

The amount in the RCA account available for benefits 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). Each calendar year, a debit is made from the RCA Account such that in total roughly half of the recorded balances in the Account are held as a tax credit (CRA refundable tax).

No formal debt instrument is issued to the RCA 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 34 Reconciliation of balances in RCA Account
 (\$ millions)

Components of plan year balance	Balance in 2020	Balance in 2021	Balance in 2022	Total balance 2020 to 2022
Public accounts opening balance	443	460	487	443
Income				
Net interest earnings	17	16	17	50
Employer contributions	26	31	29	86
Member contributions	<u>5</u>	<u>6</u>	<u>4</u>	<u>15</u>
Income subtotal	48	53	50	151
Expenditures				
Annuities	10	11	12	33
Pension divisions	1	0	0	1
Pension transfer value payments	2	1	3	6
Minimum benefits	0	0	0	0
Amount transfer to CRA	<u>18</u>	<u>14</u>	<u>23</u>	<u>55</u>
Expenditures subtotal	31	26	38	95
Public accounts closing balance	460	487	499	499
Refundable tax	456	470	493	493

Since the last valuation, the RCA Account balance has grown by \$56 million (a 12.6% increase) to reach \$499 million as at 31 March 2022, and the refundable tax, totalling \$439 million as at 31 March 2019, has increased by \$54 million (a 12.3% increase) to reach \$493 million as at 31 March 2022.

C.5 Reserve Force Pension Fund (RFPF)

Since 1 March 2007, Reserve Force member contributions (for current and prior service) have been credited to the RFPF. The Fund is invested in the financial markets with a view to achieving maximum rates of return without undue risk.

The RFPF has been credited with all contributions as well as with the net investment returns generated by the capital assets managed by PSP. It is debited with benefit payments and plan administrative expenses.

Table 35 Reconciliation of balances in Reserve Force Pension Fund for plan year 2019 to 2022
(\$ millions)

Components of Plan year balance	Balance in 2020	Balance in 2021	Balance in 2022	Total balance 2020 to 2022
Public Accounts opening balance	613	596	735	613
Income				
Net Investment Earnings	(4)	135	95	226
Employer contributions	51	55	60	166
Member contributions	23	29	26	78
Actuarial liability adjustments	<u>5</u>	<u>17</u>	<u>17</u>	<u>39</u>
Income subtotal	75	236	198	509
Expenditures				
Annuities	10	11	12	33
Pension transfer value payments	17	21	17	55
Transfers to other pension plans	57	60	34	151
Minimum benefits	-	-	-	-
Administrative expenses	<u>8</u>	<u>5</u>	<u>6</u>	<u>19</u>
Expenditure subtotal	92	97	69	258
Public Accounts closing balance	596	735	864	864

Since the last valuation, the Fund balance has increased by \$251 million (a 40.9% increase) to reach \$864 million as at 31 March 2022.

C.6 Interest earnings and rates of return

The interest earnings in respect of the Superannuation Account were calculated using the entries in Table 32 which are based on book values since the notional bonds are deemed to be held to maturity. The interest earnings were computed using the dollar-weighted approach and assume that cash flows occur in the middle of the plan year (except for actuarial liability adjustments, which occur on 31 March). The CFPF and the RFPF rates of return are those from PSP 2023 Annual Report.

Table 36 Interest earnings and rates of return

<u>Plan Year</u>	<u>Superannuation Account</u>	<u>Canadian Forces Pension Fund</u>	<u>Reserve Force Pension Fund</u>
2020	3.8%	(0.6%)	(0.6%)
2021	3.5%	18.4%	18.4%
2022	3.4%	10.9%	10.9%

C.7 Sources of asset and accounts available for benefits data

The Superannuation Account, the RCA Account, the CFPF and the RFPF entries shown in Appendix C.1 above were taken from the Public Accounts of Canada and the financial statements from PSP.

Appendix D — Membership data

D.1 Sources of membership Data

The individual data in respect of contributors, pensioners, and eligible survivors were provided as at 31 March 2022. 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 2022 for each pensioner and eligible survivor.

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 Department of National Defence, appropriate adjustments were made to the membership data.

D.2 Summary of membership data

A summary of the valuation data as at 31 March 2022 and the reconciliation of contributors, pensioners, and survivors from 31 March 2019 to at 31 March 2022 are shown in this section. Relevant detailed statistics on contributors, pensioners and survivors are shown in Appendix K.

Table 37 Summary of membership data by plan

	Regular Force as at 31 March 2022	Regular Force as at 31 March 2019	Reserve Force as at 31 March 2022	Reserve Force as at 31 March 2019
Contributors				
Number	69,711	71,532	20,890	18,217
Average pensionable earnings	\$82,982	\$74,054	\$20,284	\$18,595
Average age	35.9	35.6	34.5	34.5
Average accrued service ^a	11.6	11.6	7.2	7.6
Retirement pensioners in pay				
Number	64,802	90,620	2,519	1,829
Average annual pension in pay	\$36,755	\$36,803	\$4,765	\$5,035
Average age	68.8	64.5	65.9	64.6
3B disability pensioners in pay^b				
Number	28,101	n/a	281	n/a
Average annual pension in pay	\$32,136	n/a	\$2,801	n/a
Average age	56.0	n/a	63.3	n/a
3A disability pensioners				
Number	432	494	2	n/a
Average annual pension in pay	\$18,576	\$18,934	\$1,461	n/a
Average age	72.0	71.6	70.8	n/a
Deferred pensioners^c				
Number	3,937	2,715	8,530	7,103
Average annual deferred pension	\$8,782	\$8,761	\$1,366	\$1,348
Average age	39.4	38.4	38.0	36.3
Eligible surviving spouses				
Number	21,049	21,720	160	112
Average annual pension in pay	\$16,001	\$14,905	\$1,936	\$1,988
Average age	79.9	79.4	60.6	57.5
Eligible surviving children				
Number	515	575	44	50
Average annual pension in pay	\$2,968	\$2,671	\$508	\$376
Pending members				
Number	1,157	n/a	880	n/a
Average age	31.7	n/a	33.1	n/a

a. Average pensionable service for the Reserve Force Pension Plan

b. Included in Retirement pensioners in pay as at 31 March 2019

c. Includes disability 3B with a deferred pension

Table 38 Reconciliation of Regular Force Plan contributors

Components of the reconciliation	Male officer	Male other rank	Male total	Female officer	Female other rank	Female total	Total
As at 31 March 2019	14,914	45,189	60,103	3,619	7,810	11,429	71,532
Data corrections	(155)	426	271	(35)	90	55	326
New contributors							
New entrants	1,754	6,965	8,719	625	1,336	1,961	10,680
Rehired from cash-out	53	262	315	14	26	40	355
Rehired from pensioners Part I	55	97	152	6	8	14	166
Rehired from pensioners Part I.1	<u>1</u>	<u>16</u>	<u>17</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>20</u>
Subtotal	1,863	7,340	9,203	646	1,372	2,018	11,221
Changes of officers/other ranks	667	(667)	-	145	(145)	-	-
Lump sum terminations							
Return of contribution	(185)	(1,234)	(1,419)	(69)	(197)	(266)	(1,685)
Transfer value	(372)	(2,280)	(2,652)	(90)	(300)	(390)	(3,042)
Pending	(108)	(705)	(813)	(24)	(106)	(130)	(943)
Rollover termination							
Transfer to Res. Part I	(5)	(21)	(26)	(2)	(3)	(5)	(31)
Transfer to Reg. Force	<u>240</u>	<u>1,084</u>	<u>1,324</u>	<u>100</u>	<u>335</u>	<u>435</u>	<u>1,759</u>
Subtotal	(430)	(3,156)	(3,586)	(85)	(271)	(356)	(3,942)
Pensionable terminations							
Disability (3B)	(560)	(3,392)	(3,952)	(206)	(878)	(1,084)	(5,036)
Disability (3A)	(1)	(4)	(5)	(1)	(3)	(4)	(9)
Death	(19)	(104)	(123)	(6)	(13)	(19)	(142)
Retirement							
Immediate	(1,157)	(1,625)	(2,782)	(160)	(177)	(337)	(3,119)
Deferred	<u>(190)</u>	<u>(781)</u>	<u>(971)</u>	<u>(54)</u>	<u>(95)</u>	<u>(149)</u>	<u>(1,120)</u>
Subtotal	(1,927)	(5,906)	(7,833)	(427)	(1,166)	(1,593)	(9,426)
As at 31 March 2022	14,932	43,226	58,158	3,863	7,690	11,553	69,711

Table 39 Reconciliation of Reserve Force plan contributors

Components of the reconciliation	Male officer	Male other rank	Male total	Female officer	Female other rank	Female total	Total
As at 31 March 2019	4,180	10,012	14,192	2,090	1,935	4,025	18,217
Data corrections	48	(15)	33	5	7	12	45
New Contributors							
New Participants	1,165	5,905	7,070	442	1,363	1,805	8,875
Rehired/pensioners Part I.1	<u>180</u>	<u>247</u>	<u>427</u>	<u>100</u>	<u>47</u>	<u>147</u>	<u>574</u>
Subtotal	1,345	6,152	7,497	542	1,410	1,952	9,449
Changes of officers/other ranks	122	(122)	-	37	(37)	-	-
Lumpsum terminations							
Return of contribution	(90)	(438)	(528)	(43)	(82)	(125)	(653)
Transfer value	(238)	(643)	(881)	(124)	(136)	(260)	(1,141)
Pending	(123)	(531)	(654)	(53)	(86)	(139)	(793)
Rollover Termination							
Transfer to Res. Part I	5	21	26	2	3	5	31
Transfer to Reg. Force	<u>(240)</u>	<u>(1,084)</u>	<u>(1,324)</u>	<u>(100)</u>	<u>(335)</u>	<u>(435)</u>	<u>(1,759)</u>
Subtotal	(686)	(2,675)	(3,361)	(318)	(636)	(954)	(4,315)
Pensionable terminations							
Disability	(25)	(32)	(57)	(12)	(10)	(22)	(79)
Death	(7)	(27)	(34)	(5)	(2)	(7)	(41)
Retirement	<u>(610)</u>	<u>(1,250)</u>	<u>(1,860)</u>	<u>(329)</u>	<u>(197)</u>	<u>(526)</u>	<u>(2,386)</u>
Subtotal	(642)	(1,309)	(1,951)	(346)	(209)	(555)	(2,506)
As at 31 March 2022	4,367	12,043	16,410	2,010	2,470	4,480	20,890

Table 40 Reconciliation of Regular Force Plan pensioners

Components of the reconciliation	Male officer	Male other rank	Male total	Female officer	Female other rank	Female total	Total
Retirement pensioners							
As at 31 March 2019	17,187	47,189	64,376	1,327	3,664	4,991	69,367
Data corrections	143	(147)	(4)	8	(32)	(24)	(28)
New pensioners	1,347	2,406	3,753	214	272	486	4,239
Death	(1,226)	(4,047)	(5,273)	(34)	(56)	(90)	(5,363)
Rehired	<u>(55)</u>	<u>(97)</u>	<u>(152)</u>	<u>(6)</u>	<u>(8)</u>	<u>(14)</u>	<u>(166)</u>
As at 31 March 2022	17,396	45,304	62,700	1,509	3,840	5,349	68,049
Disability Pensioners (3A)							
As at 31 March 2019	45	380	425	13	56	69	494
Data corrections	6	2	8	-	6	6	14
New pensioners	1	4	5	1	3	4	9
Death	<u>(8)</u>	<u>(74)</u>	<u>(82)</u>	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>(85)</u>
As at 31 March 2022	44	312	356	13	63	76	432
Disability Pensioners (3B)							
As at 31 March 2019	2,257	17,618	19,875	609	3,484	4,093	23,968
Data corrections	37	259	296	15	85	100	395
New pensioners	560	3,392	3,952	206	878	1,084	5,036
Death	(45)	(518)	(563)	(6)	(39)	(45)	(608)
Rehired	<u>(1)</u>	<u>-</u>	<u>(1)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
As at 31 March 2022	2,808	20,751	23,559	824	4,408	5,232	28,791

Table 41 Reconciliation of Reserve Force plan pensioners

Components of the reconciliation	Male officer	Male other rank	Male total	Female officer	Female other rank	Female total	Total
Retirement pensioners							
As at 31 March 2019	2,145	4,747	6,892	858	874	1,732	8,624
Data corrections	(60)	(17)	(77)	(37)	33	(4)	(81)
New pensioners	610	1,250	1,860	329	197	526	2,386
Death	(19)	(10)	(29)	(6)	(1)	(7)	(36)
Rehired	<u>(79)</u>	<u>(118)</u>	<u>(197)</u>	<u>(42)</u>	<u>(19)</u>	<u>(61)</u>	<u>(258)</u>
As at 31 March 2022	2,597	5,852	8,449	1,102	1,084	2,186	10,635
Disability pensioners							
As at 31 March 2019	67	165	232	7	69	76	308
Data corrections	49	(2)	47	33	(26)	7	54
New pensioners	25	32	57	12	10	22	79
Death	(3)	(4)	(7)	(5)	(2)	(7)	(14)
Rehired	<u>(3)</u>	<u>(5)</u>	<u>(8)</u>	<u>(3)</u>	<u>-</u>	<u>(3)</u>	<u>(11)</u>
As at 31 March 2022	135	186	321	44	51	95	416

Table 42 Reconciliation of spouse survivors by plan

Components of the reconciliation	Regular Force	Regular Force	Regular Force	Reserve Force	Reserve Force	Reserve Force
	Widows	Widowers	Total	Widows	Widowers	Total
31 March 2019	21,330	390	21,720	98	14	112
Data corrections	162	(16)	146	1	2	3
New from the death of contributors	70	11	81	13	4	17
pensioners	3,281	58	3,339	22	8	30
Spouse deaths	<u>(4,178)</u>	<u>(59)</u>	<u>(4,237)</u>	<u>(1)</u>	<u>(1)</u>	<u>(2)</u>
31 March 2022	20,665	384	21,049	133	27	160

Table 43 Reconciliation of children/students survivors by plan

Components of the reconciliation	Regular Force	Regular Force	Regular Force	Reserve Force	Reserve Force	Reserve Force
	Children	Students	Total	Children	Students	Total
As at 31 March 2019	443	132	575	41	9	50
Data corrections	11	31	42	7	(14)	(7)
New from the death of contributors	77	9	86	6	1	7
pensioners	63	30	93	5	1	6
Eligible as student	(73)	73	-	(3)	3	-
Termination of benefits	<u>(105)</u>	<u>(176)</u>	<u>(281)</u>	<u>(12)</u>	-	<u>(12)</u>
As at 31 March 2022	416	99	515	44	-	44

Appendix E — CFSA Valuation methodology

E.1 Plan assets and accounts

E.1.1 Canadian Forces Superannuation Account

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 available for benefits consists of the discounted value of future Regular Force member contributions and government credits in respect of prior service elections. The discounted value of future member contributions was calculated using the projected Superannuation Account yields. The government is assumed to match these future member contributions when paid at a single rate, but no contributions are credited by the government if the member is paying the double rate.

E.1.2 Canadian Forces and Reserve Force Pension Funds

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

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 of assets 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 elections¹. The discounted value of future member and government contributions was calculated using the assumed rates of return on the Pension Fund;
- the amount payable/receivable from Reserve Force Rollover members²; and
- the remaining contributions for processed and unprocessed Reserve Force prior service. This is the estimated amount of contributions for pre-2007 Reserve Force service that Regular Force members and Reserve Force members have committed to purchase.

The actuarial value of Canadian Forces Pension Fund assets determined as at 31 March 2022 under the adjusted market value method is \$41,091 million and was determined as follows.

¹ As defined in Appendix A.3.2.2

² As defined in Appendix A.5.23

Table 44 Actuarial value of Canadian Forces Pension Fund assets
(\$ millions)

Plan Year	2018	2019	2020	2021	2022	Total
Actual net investment return (A)	2,665	2,188	(199)	6,185	4,384	
Expected investment return (B)	1,304	1,497	1,964	1,412	2,128	
Investment gains (losses) (A-B)	1,361	691	(2,163)	4,773	2,256	
Unrecognized percentage	0%	20%	40%	60%	80%	
Unrecognized investment gains (losses)	0	138	(865)	2,864	1,805	3,942
Market value as at 31 March 2022						44,663
<i>Less</i>						
Total unrecognized investment gains (losses)						<u>3,942</u>
Actuarial value as at 31 March 2022 (before application of corridor)						40,721
Impact of the application of corridor ^a						<u>0</u>
Actuarial value as at 31 March 2022 (after application of corridor)						40,721
<i>Plus</i>						
Present value of prior service contributions						297
Amount receivable from Part I.1 - Rollover members						73
Actuarial value as at 31 March 2022						41,091

a. The corridor is 90% - 110% of the market value, that is (40,197 - 49,129) for the CFPF.

The actuarial value of the Reserve Force Fund assets determined as at 31 March 2022 under the adjusted market value method is \$738 million and was determined as follows.

Table 45 Actuarial value of Reserve Force Pension Fund assets
(\$ millions)

Plan year	2018	2019	2020	2021	2022	Total
Actual net investment return (A)	61	49	(4)	135	95	
Expected investment return (B)	27	29	36	25	40	
Investment gains (losses) (A-B)	34	20	(40)	110	55	
Unrecognized percentage	0%	20%	40%	60%	80%	
Unrecognized investment gains (losses)	-	4	(16)	66	44	98
Market value as at 31 March 2022						864
<i>Less</i>						
Total unrecognized investment gains (losses)						<u>98</u>
Actuarial value as at 31 March 2022 (before application of corridor)						766
Impact of the application of corridor ^a						<u>12</u>
Actuarial value as at 31 March 2022 (after application of corridor)						778
<i>Less</i>						
Amount payable to Regular Force Plan (Rollover members)						73
<i>Plus</i>						
Present value of prior service contributions						33
Actuarial value as at 31 March 2022						738

a. The corridor is 90% - 110% of the market value, that is (778 - 950) for the RFPF

E.2 Actuarial cost method

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

As in the previous valuation, the projected accrued benefit actuarial cost method (also known as the projected unit credit method) was used to determine the current service cost and actuarial liability. Consistent with this cost method, pensionable earnings are projected up to retirement using the assumed annual increases in 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 CFPF and RFPF 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 CFPF and RFPF, of all future payable benefits considered to accrue in respect of that year's service. The CFPF and RFPF administrative expenses¹ are deemed to be included in the total current service cost.

Under this method, the current service cost for an individual member will increase each year as the member approaches retirement. However, all other things being equal, the current service cost for the total population, expressed as a percentage of total pensionable payroll, can be expected to remain stable as long as the average age and service of the total population remains constant. For a given year, the government current service cost is the total current service cost reduced by the members' contributions during the year.

E.2.2 Actuarial liability

The actuarial liability with respect to contributor 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 to the credit of members. For pensioners and survivors, the actuarial liability corresponds to the value, discounted in accordance with the actuarial assumptions, of future payable benefits.

E.2.3 Actuarial excess/(shortfall) and actuarial surplus/(deficit)

It is unlikely that the actual experience will conform exactly to the assumptions that underlie the actuarial estimates. Thus, a balancing item must be calculated under this cost method to estimate the necessary adjustments. Adjustments may also be necessary if the terms of the pension benefits enacted by legislation are modified or if assumptions need to be updated.

The actuarial excess/(shortfall) is the difference between the actuarial value of assets and the actuarial liability under the Superannuation Account and the actuarial surplus/(deficit) is the difference between the actuarial value of assets and the actuarial liability under the CFPF or the RFPF. The disposition of any actuarial surplus or deficit is defined in the CFSA.

¹ As defined in Appendix F.3.5

E.2.4 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 payments in respect of a deficit or, as the case may be, actuarial surplus debits.

E.2.5 Hypothetical wind-up valuation

The payment of accrued pension benefits being the responsibility of the government, the likelihood of the plan being wound-up and its obligation not being fulfilled is practically nonexistent. Further, the legislation does not define the benefits payable upon wind-up. Therefore, a hypothetical wind-up valuation has not been performed.

E.2.6 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 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.

E.3 Projected yields and rates of return

The projected yields (shown in Appendix F) used to calculate future interest credits to the Superannuation Account are the projected annual yields on the combined book value of the Superannuation Accounts of the Public Service, Canadian Forces and RCMP pension plans.

The projected Superannuation Account yields 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 (also shown in Appendix F);
- 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 the quarterly interest credited to the Superannuation Account is calculated as if the principal at the beginning of a quarter remains unchanged during the quarter.

The projected yields (shown in Appendix F) were then used for the computation of the present value of

benefits to determine the liability for service prior to 1 April 2000.

The projected rates of return (shown in Appendix F) assumed for computing the present value of the benefits accrued or accruing under the CFPP and the RFPF were developed on the basis that the Funds hold a diversified mix of assets.

E.4 Membership data

For valuation purposes, individual data on each member were used. The member data shown in Appendices D and K was provided as at 31 March 2022. This valuation is based on the member data as at the valuation date. The information in respect of the contributions for elected prior service was provided as at 31 March 2022. Future member contributions in respect of elected prior service take into account only the payment streams that were still in effect at 31 March 2022. Only payments due after 31 March 2022 were included.

Appendix F — CFSA 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.

F.1 Inflation-related assumptions

F.1.1 Level of inflation

Price increases, as measured by changes in the Consumer Price Index (CPI), tend to fluctuate from year to year. In 2021, the Bank of Canada and the Government of Canada renewed their commitment to keep inflation between 1% and 3% with a target at the mid-point of 2% until the end of 2026¹. The Bank of Canada renewed its monetary policy framework in 2021 and came up with Canada’s flexible inflation-targeting framework for 2022 to 2026. Based on economic forecasts as of January 2023, the CPI is expected to increase at a rate above 2% for the following five 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 be 6.6% in plan year 2023, 3.3% in plan year 2024, 2.3% in plan year 2025, and 2.1% in plan years 2026 and 2027. The ultimate rate of 2.0% is reached in plan year 2028, which is unchanged from the assumed ultimate 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 each January 1st. 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 65² 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 \$66,600 for calendar year 2023. It increased by 2.6% compared to 2022. Future increases in the YMPE correspond to the assumed real³ increases in the AWE plus assumed increases in the CPI.

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.

³ Note that all real rates presented in this report are actually 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 Projected Return on the Fund assumption would be 3.9% (derived as 1.060/1.020) rather than 4.0%.

The real-wage differential (real increase in the AWE) is developed taking into account historical trends, a possible labour shortage and an assumed moderate economic growth for Canada. Due to elevated inflation that arose as the economy emerged from the COVID-19 pandemic, it is -0.1% in 2023, but 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 2027 and thereafter. Thus, the ultimate rate of increase for the YMPE is 2.9%.

F.2.2 Economic increase in pensionable earnings and wage measure

Pensionable earnings are projected to calculate the pension liability and service cost. The increase in pensionable earnings has two components, the economic increase and the seniority and promotional increase. It is assumed that the economic increase in pensionable earnings is separate from the seniority and promotional increase which is accounted for in the demographic assumptions. Except for the first three years which were provided by the Department of National Defence, the annual increase in pensionable earnings is assumed to be 0.6% higher than the corresponding increase in CPI. This corresponds to an ultimate increase in average pensionable earnings of 2.6% for plan year 2028 and thereafter (2.7% in the previous valuation for plan year 2026 and thereafter).

F.2.3 Increase in tax related Maximum Pensionable Earnings (MPE)

The maximum annual pension accrual of \$3,420.00 for 2022 will increase to \$3,506.67 for 2023, in accordance with the *Income Tax Regulations*. Thereafter, the maximum annual pension accrual is assumed to increase in accordance with the assumed annual increase in the YMPE, which is the same as the assumed annual increase in the AWE.

F.2.3.1 Regular Force Plan

The tax-related maximum pensionable earnings were derived from both the maximum annual pension accrual under a registered defined benefit plan as previously defined and the YMPE.

The MPE is \$196,200 for calendar year 2023.

F.2.3.2 Reserve Force Plan

The tax-related maximum pensionable earnings were derived from the maximum annual pension accrual under a registered defined benefit plan.

The MPE is \$233,800 for calendar year 2023. Since no Registered Compensation Agreement has been setup for members of Part I.1, no contributions nor benefit accrual are accumulated for members earnings above the MPE.

F.3 Investment-related assumptions

F.3.1 New money rate

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

The one-year average real yield on long-term Canadian federal bonds as at 31 March 2023 is set at (3.6%) and is assumed to gradually increase to reach 2.0% by plan year 2034 and remain at that level.

The annual nominal yield on 10-year-plus federal bonds is assumed to be 3.1% in plan year 2023. It is projected to increase gradually to its ultimate level of 4.0% in plan year 2034. The assumed rates over the short-term (2023-2026) are consistent with the average of private sector forecasts and take into account the recent market conditions as of 31 March 2023. The ultimate level of 4.0% is equivalent to an ultimate real rate of 2.0%. The ultimate real yield was assumed to be 2.5% in plan year 2036 in the previous valuation. The assumed real new money rates over the plan years 2023 to 2034 are on average 0.4% higher than those assumed in the previous valuation over the same period.

F.3.2 Projected yields on Superannuation Account

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

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

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 nominal yield on the Account is 3.2% in plan year 2023. It is projected to reach a low of 2.5% in 2032 and to reach its ultimate value of 4.0% in 2049.

F.3.3 Rate of return on the CFPF & RFPF

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 PSP. PSP'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 PSP. PSP'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 PSP, which then uses this portfolio as a starting point for its investment policy.

For the purpose of this report and in line with PSP's 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 2022, PSP's assets consisted of 20% fixed income securities (including 2% cash), 41% equity (including 0.6% complementary investments), 29% real assets and 10% credit. PSP has developed a long-term target Policy Portfolio (approved by its Board of Directors in fall 2022 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 PSP as at 31 March 2022) will gradually converge towards the long-term target Policy Portfolio. The ultimate asset mix will be reached in plan year 2025 in the projection period.

Net cash flows (contributions less expenditures, excluding special payments, if any) are expected to become negative during plan year 2026 for CFPF and 2042 for RFPF, at which points a portion of investment income will be required to pay benefits.

Table 46 presents the assumed asset mix for each plan year throughout the projection period.

Table 46 Asset mix

Plan Year	Fixed income securities	Cash	Public equity	Private equity	Real assets	Credit
2023	18%	2%	26%	15%	29%	10%
2024	19%	2%	27%	13%	30%	9%
2025 and after	19%	2%	27%	12%	31%	9%

F.3.3.2 Real rates of return by asset type

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

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

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

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

Cash

The real yield on cash is negative in the first year of the projection period, reflecting higher-than-normal inflation. The real yield on cash in the subsequent years is expected to converge to historical norms. This is due to the central banks' recent consecutive policy interest rate hikes to stave off high inflation. The real yield on cash is expected to reach 0.5% in plan year 2033.

Fixed income securities

As at 31 March 2022, PSP had 20% 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 increase to 21% of Pension Fund assets in plan year 2024 and remain at that level for the projection period.

The fixed income securities' ultimate mix (excluding cash) in plan year 2024 and thereafter is expected to consist of 17% federal bonds, 20% provincial bonds, 37% US TIPS and 26% emerging market debt, which reflects PSP's long-term target allocation.

As described in Appendix F.3.1 above, the assumed real yield on 10-year-plus federal bonds is expected to remain negative until plan year 2024 and then increase gradually to its ultimate level of 2.0% in plan year 2034. Compared to cash, the yield on 10-year-plus federal bonds is 35 basis points lower in plan year 2023 and 142 basis points lower in plan year 2024 due to the inverted yield curve. Starting in plan year 2025, the yield on 10-year plus federal bonds is assumed to be higher than cash and is assumed to reach the ultimate spread of 150 basis points by plan year 2034.

Since the current PSP'S Policy Portfolio and its long-term target Policy Portfolio are composed of universe bonds (long, mid and short term), it is assumed that fixed income securities are composed of universe bonds for the entire projection period. Due to their overall shorter maturity, the yields on universe bonds are lower than the yields on long-term bonds. As a result, the spreads of universe bonds over cash are lower than those of long-term bonds over cash. The spread of the universe federal bonds over cash is assumed to be negative 50 basis points in plan year 2023 due to the inverted yield curve but will gradually increase to 79 basis points in plan year 2034.

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 28 basis points while the ultimate spread is assumed to be 168 basis points (in plan year 2034). The initial spread of emerging market debt over cash is assumed to be 240 basis points and the ultimate spread is assumed to increase to 269 basis points in plan year 2034. Inflation-linked bonds offer protection against inflation, which tend to lower the spread versus cash. The initial spread of inflation-linked bonds (US TIPS) over cash is assumed to be 309 basis points and is expected to decrease to 110 basis points in plan year 2034.

The expected real rates of return for individual bonds take into account the coupons and market value fluctuations due to the expected movement of their respective yield rates. An ultimate fixed income real rate of return of 2.1% is assumed for 2034 and thereafter.

Equity

As at 31 March 2022, 41% of the assets of the Pension Fund are invested in equities (both public and private). In the derivation of the real rates of return for these equity investments, consideration was given to dividend yields, expected growth of the underlying economies, and long-term risk premiums for various factors such as size and geography.

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

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

Over long periods, valuation changes and currency fluctuations are not expected to contribute significantly to the return on broad equity markets. Therefore, it is assumed that expectations regarding dividend yields and earnings growth are sufficient to project future equity returns, with additional adjustments for the riskiness of small caps and emerging market equities. Based on historical dividend yields for developed markets and PSP'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 real return on public equities, based on PSP's relative allocation to developed market, small caps and emerging market equities, is projected to be 4.3%.

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

Real assets

As at 31 March 2022, 29% of the assets of the Pension Fund are invested in the real assets (47% real estate, 36% infrastructure, and 17% natural resources). The expected real rate of return on real assets is the asset-value weighted average returns of the three sub-classes. The returns on real estate and infrastructure assets are derived from two components: income returns and asset valuation growth. Each component references historical data and judgment on the expectation of the future outcomes such as projected per capita GDP growth rate. Since natural resources is a relatively new type of asset class, the historical data on returns is limited. Therefore, the return on natural resources is assumed as the weighted average returns of real estate and infrastructure. The income returns for real estate and infrastructure are 3.2% and 3.3%, respectively. In addition, a 0.6% growth return is assumed for both asset types. Collectively, the real assets are projected to earn 3.9% throughout the projection period.

Credit

As at 31 March 2022, 10% of the assets of the Pension Fund are invested in credit. Based on the information received, PSP'S exposure to this asset class is made through High yield US treasury bonds. It is assumed that the return on credit would yield 250 basis points above Canadian federal universe bonds (130 basis points) adjusted to U.S. market (-10 basis points). Thus, Credit is projected to earn 3.7% real

throughout the projection period.

Summary of real rate of return by asset class

In Table 47, 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 48.

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.

Table 47 Real rate of return by asset type^a
 (before investment expenses - as a percentage)

Plan Year	Fixed income securities	Cash	Public equity	Private equity	Real assets	Credit
2023	(1.2)	(3.2)	4.3	5.0	3.9	3.7
2024	2.4	1.2	4.3	5.0	3.9	3.7
2025	3.3	0.8	4.3	5.0	3.9	3.7
2026	3.4	0.4	4.3	5.0	3.9	3.7
2027	3.2	0.3	4.3	5.0	3.9	3.7
2028	3.2	0.3	4.3	5.0	3.9	3.7
2029	3.1	0.3	4.3	5.0	3.9	3.7
2030	3.0	0.4	4.3	5.0	3.9	3.7
2031	2.9	0.4	4.3	5.0	3.9	3.7
2032	2.8	0.4	4.3	5.0	3.9	3.7
2033	2.7	0.5	4.3	5.0	3.9	3.7
2034 and after	2.1	0.5	4.3	5.0	3.9	3.7

a. Before allowance for rebalancing and diversification.

F.3.3.3 Investment expenses

Over the last three plan years, PSP's operating and asset management expenses averaged 0.7% of average net assets. It is assumed that going forward, PSP'S 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 0.5%, which is 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.

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

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 CFPF and the RFPF

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

Table 48 Overall rate of return on assets of the CFPF and RFPF

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

a. 0.45% before rounding.

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

Table 49 Rates of return on assets in respect of the CFPF and the RFPF^a
 (as a percentage)

Plan Year	Nominal	Real
2023	5.3	-1.3
2024	6.1	2.8
2025	6.2	3.9
2026	6.2	4.1
2027	6.2	4.1
2028	6.2	4.2
2029	6.2	4.2
2030	6.1	4.1
2031	6.1	4.1
2032	6.1	4.1
2033	6.1	4.1
2034 and after	6.0	4.0
Average from 2023 to 2027	6.0	2.7
Average from 2023 to 2032	6.1	3.4
Average from 2023 to 2042	6.0	3.7

a. Do not reflect actual returns for plan year 2023.

It is assumed that the ultimate real rate of return on investments will be 4.0% in 2034, net of all investment expenses, which is the same as the previous valuation. Due to the more normal level of interest rates compared to the previous valuation, the real rates of returns over the first ten years of the projection are closer to the ultimate rate. The real rate of return on assets takes into account the assumed asset mix as well as the assumed real rate of return for all categories of assets. The nominal returns projected for the Pension Fund are simply the sum of the assumed level of inflation and the real return.

Using the variable nominal rates of return on assets shown in previous table is equivalent to using a flat nominal discount rate of 6.0% for purpose of calculating the liability as at 31 March 2022 for service since 1 April 2000.

F.3.4 Transfer value real interest rate

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

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

Table 50 shows the assumed transfer value real interest rates used in this report:

Table 50 Transfer value
(as a percentage)

Plan Year	r_L	i_L	i_7	r_7	Real interest rates	
					First 10 years	After 10 years
2023	1.18	3.04	2.99	1.13	2.10	2.50
2024	1.21	3.09	2.98	1.11	2.00	2.50
2025	1.29	3.18	3.03	1.14	2.00	2.60
2026	1.38	3.28	3.08	1.18	2.10	2.70
2027	1.46	3.38	3.12	1.21	2.10	2.80
2028	1.54	3.48	3.17	1.25	2.10	2.80
2029	1.63	3.57	3.22	1.28	2.00	2.90
2030	1.71	3.67	3.27	1.31	2.10	3.00
2031	1.79	3.77	3.31	1.35	2.10	3.10
2032	1.88	3.86	3.36	1.38	2.10	3.20
2033	1.96	3.96	3.41	1.42	2.20	3.30
2034 and after	2.04	4.06	3.45	1.45	2.20	3.40

F.3.5 Administrative expenses

The operating expenses of PSP continue to be recognized implicitly in this report.

All pension plan administrative expenses are charged to the Superannuation Account, the CFPF and the RFPF.

For the Regular Force Plan, the annual administrative expenses assumption was increased from 0.55% to 0.60% of total pensionable payroll and was decreased from 1.75% to 1.40% of total pensionable payroll for the Reserve Force Plan. The revisions for the Regular Force Plan are based on the observed experience over the intervaluation period. For plan year 2023, the Superannuation Account is assumed to be charged with 40.0% of total administrative expenses of the Regular Force Plan, reducing by 2.5% each year thereafter. The future expenses expected to be charged to the Superannuation Account have been capitalized and are shown as a liability, whereas the expenses to the CFPF and RFPF have been recognized as a part of the annual current service cost.

F.3.6 Summary of economic assumptions

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

Table 51 Economic assumptions^a
(as a percentage)

Plan year	Inflation		Employment earning increases				Interest	
	CPI increase ^b	Pension indexing ^c	YMPE ^c	Pensionable earnings ^d	Maximum pensionable earnings ^c	New money rate ^c	Projected yield on Account	Projected Return on Funds
2023	6.6	6.3	2.6	4.8	2.6	3.1	3.2	5.3
2024	3.3	5.1	3.7	3.0	3.7	3.1	3.1	6.1
2025	2.3	2.2	3.4	2.3	3.4	3.2	3.0	6.2
2026	2.1	2.2	2.9	2.7	2.9	3.3	2.9	6.2
2027	2.1	2.1	2.9	2.7	2.9	3.4	2.9	6.2
2028	2.0	2.1	2.9	2.6	2.9	3.5	2.8	6.2
2029	2.0	2.0	2.9	2.6	2.9	3.6	2.7	6.2
2030	2.0	2.0	2.9	2.6	2.9	3.6	2.7	6.1
2031	2.0	2.0	2.9	2.6	2.9	3.7	2.6	6.1
2032	2.0	2.0	2.9	2.6	2.9	3.8	2.5	6.1
2033	2.0	2.0	2.9	2.6	2.9	3.9	2.6	6.1
2036	2.0	2.0	2.9	2.6	2.9	4.0	2.6	6.0
2041	2.0	2.0	2.9	2.6	2.9	4.0	3.3	6.0
2046	2.0	2.0	2.9	2.6	2.9	4.0	3.9	6.0
2049+	2.0	2.0	2.9	2.6	2.9	4.0	4.0	6.0

a. Bold figures denote actual experience.

b. Assumed to be effective during the Plan Year.

c. Assumed to be effective as at 1 January.

d. Assumed to be effective as at 1 April. Exclusive of seniority and promotional increases.

Appendix G — CFSA Demographic assumptions

G.1 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 Regular Force Plan population subject to the CFSA, the plan's own experience, except where otherwise noted, was deemed to be the best model to determine the demographic assumptions. Demographic assumptions were updated to reflect past experience to the extent it was deemed credible.

The Reserve Force Plan is a less mature plan, with little experience, providing limited predictable information for establishing appropriate demographic assumptions. Except where otherwise noted, the experience of the Regular Force members covered under Part I of the CFSA was deemed to be the best source of data to determine the demographic assumptions.

The demographic assumptions in the previous report were based on the members' completed years of 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.

Unless stated otherwise, Qualifying Service in the Canadian Forces is used for demographic assumptions based on service for members of the Regular Force Plan and Pensionable Service is used for members of the Reserve Force Plan.

G.1.1 Seniority and promotional salary increases

Seniority means length of service within a classification and promotion means moving to a higher rank.

The assumption for seniority and promotional salary increase for both the Regular Force Plan and Reserve Force Plan are determined by studying the experience for the Regular Force members.

The seniority and promotion salary increase rates were slightly increased to reflect the intervaluation experience. The following table provides sample rates of seniority and promotional increases for both pension plans.

Table 52 Sample of assumed seniority and promotional salary increases
(Percentage of annual earnings)

Years of qualifying service ^a	Officer	Other rank
0	7.9	20.0
1	7.4	19.1
2	12.8	10.4
3	14.1	8.8
4	22.1	5.4
5	10.6	2.2
6	7.1	1.9
7	7.4	1.7
8	5.1	1.2
9	4.3	0.8
10	4.0	0.8
15	2.7	1.2
20	2.4	1.4
25	2.2	1.3
30	1.7	1.0
35 and above	1.1	0.5

a. For the Reserve Force Plan, years of pensionable service, as mentioned in Appendix G.1

G.1.2 New contributors

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

The proportion of female members joining the Plans, is assumed to remain constant, consistent with recent experience:

Table 53 Proportion of female members joining the plans

Pension plan	Officer	Other rank
Regular Force - as new members of the Canadian Forces	26%	16%
Regular Force - from rollover	29%	22%
Reserve Force	31%	17%

These proportions are in line with both the current representation of female members and the recent distribution of new contributors. It is assumed that the distribution of new members by age, sex, rank, service, salary level and working schedule will be on average the same as those of members with less than one year of service at each of the three years preceding the valuation date. It is assumed that 13% of new members of the Regular Force Plan are rollovers from the Reserve Force Plan.

The assumed percentage increase in the number of contributors for each plan year is shown in Table 54.

Table 54 Assumed annual increases in number of contributors per pension plan
(as a percentage)

Plan Year	Regular Force	Reserve Force
2023	(1.3)	(4.8)
2024 to 2028	2.6	2.0
2029 and after	0.6	0.4

G.1.3 Pensionable retirement

Pensionable retirement means ceasing to be an active member and immediately starting to receive an annuity (immediate annuity or an annual allowance) for reasons other than disability 3A and 3B.

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

Regular Force Plan

In general, the rates before 35 years of service remained similar to the previous valuation, the rates at 35 years of service were increased and the rates after 35 years of service were decreased from the previous valuation.

The following tables provide sample rates of pensionable retirement for member of the Regular Force Plan.

Retirement rates for 20 to 24 years of service only apply under the old terms of service.

Table 55 Sample of assumed rates of retirement for members of the Regular Force Plan
(Per 1,000 individuals)

Years of qualifying service	Male officer	Female officer	Male other rank	Female other rank
20	50	50	80	40
21	50	75	50	40
22	50	75	45	40
23	50	75	43	45
24	50	75	50	50
25	100	100	75	55
26	90	100	75	60
27	85	100	75	65
28	85	100	75	70
29	85	100	75	75
30	100	150	90	80
34	250	150	150	150
35	500	300	400	200
36	250	200	200	150
38 and above	150	150	150	150

Reserve Force Plan

After a review of the Reserve Force Plan intervaluation experience, the retirement rates were simplified to service-based for two age groups: below age 58 and age 58 and above. Table 56 provides sample rates of retirement for the Reserve Force Plan members of age below 58.

Table 56 Sample of assumed rates of retirement of the Reserve Force members
(Per 1,000 individuals)

<u>Years of Pensionable Service</u>	<u>All genders and rank</u>
5	8
10	20
15	30
25	30
30	30
33	50
34	100
35 and above	90

All members are deemed to retire upon reaching age 60 and rates for ages 58 and 59 are on average 40% higher than those presented in the table above.

G.1.4 Disability

Disability means ceasing to be an active member of the Regular Force Plan or the Reserve Force Plan for reasons of occupation disability (own occupation).

Regular Force Plan

Historically, two types of occupation disability were valued for the Regular Force Plan:

- Any occupation disability (3A);
- Own occupation disability (3B).

The disability assumption is based on the intervaluation experience from both disabilities 3A and 3B.

For the purpose of the valuation, it is assumed that no disability 3A will occur and that all disability benefits fall under 3B. This has no material impact on the valuation because there are very few 3A disability retirement each year.

In the previous valuation, the disability assumption was based on service. The assumption is now based on age as it better reflects actual experience. Given the increase in credible experience, disability rates for female members have been modified to differ by rank. The current intervaluation experience has been consistent with the disability incidence rates observed between plan years 2017 to 2019.

The following table provides a sample of 3B disability incidence rates for the Regular Force Plan.

Table 57 Sample of assumed 3B disability incidence rates (own occupation) for the Regular Force Plan
(Per 1,000 individuals)

Age	Male officer	Female officer	Male other rank	Female other rank
15	0.0	0.0	0.0	0.0
20	3.5	8.0	3.0	7.0
25	3.5	8.0	6.0	10.0
30	3.5	8.0	17.0	22.5
35	6.0	8.0	29.5	35.0
40	11.0	31.0	42.0	52.0
45	16.5	33.5	54.5	72.0
50	24.0	36.0	61.0	92.0
55	59.0	95.0	115.0	142.0
60	300.0	450.0	500.0	500.0

Reserve Force Plan

After a review of the Reserve Force Plan intervaluation experience, the disability rates were removed. This will have no material impact on the valuation because there are very few disability retirements each year for members of the Reserve Force Plan.

G.1.5 Withdrawal

Withdrawal means ceasing to be an active member of the Regular Force Plan or the Reserve Force Plan for reasons other than death, disability or immediate retirement (immediate annuity or an annual allowance).

Regular Force Plan

The assumed withdrawal rates were revised to reflect the intervaluation experience.

The experience showed that officers had similar behaviors whether they were male or female. Officers' rates have therefore been modified to be unisex. In general, withdrawal rates for Regular Force members are slightly higher than those of the previous valuation.

The following table provides sample rates of withdrawal.

Table 58 Sample of assumed withdrawal rates of the Regular Force plan
(Per 1,000 individuals)

Years of qualifying service	Officer	Male other rank	Female other rank
0	60	100	90
1	40	50	40
5	17.5	38	22
10	17.5	27.5	22
12	17.5	22.5	14
13 to 19	17.5	20	14
20 to 24 ^a	18	20	14
25 and above	0	0	0

a. Withdrawal rates above 19 years of service do not apply for members under the old terms of service

Reserve Force Plan

In the previous valuations, the withdrawal assumptions for members of the Reserve Force Plan included decrements due to roll-over to the Regular Force Plan and decrements due to actual terminations. This method has been modified in this valuation so that decrements due to rollover to the Regular Force Plan are distinct rates. These rates are shown Appendix G.1.7.

Compared to last valuation, withdrawal rates were simplified and are based on years of pensionable service for two age groups: below age 50 and age 50 and above. The following table provides sample withdrawal rates for Reserve Force Plan.

Table 59 Assumed withdrawal rates for Reserve Force Plan for members below age 50
(Per 1,000 individuals)

Years of Pensionable Service	Male officer	Female officer	Male other rank	Female other rank
0	36	22	33	32
1	38	38	47	38
2	38	38	47	44
5	45	50	72	61
10	36	45	63	61
15	32	39	55	61
20	22	28	36	48
25	22	20	16	34

For members above age 50 rates are the following:

- Rates from Table 59 for members with 0 and 1 year of pensionable service;
- 2% for members with 2 and 3 years of pensionable service;
- 3.3% for members with 4 to 25 years of pensionable service; and
- 1.0% for members with 26 years or more of pensionable service.

There is no withdrawal rate for members above age 55 with at least 30 years of pensionable service (see A.4.2.2 eligibility for Immediate annuity (Appendix A.5.12)).

G.1.6 Proportion of members opting for a deferred annuity

Following a termination of employment, vested members (at least 2 years of pensionable service) not immediately retiring (immediate annuity or an annual allowance) are entitled to defer their annuity (Appendix A.5.13). Members below age 50 can also opt to transfer the commuted value of their deferred pension out of the Plans (Appendix A.5.14).

An assumption must be made as to the proportion of members opting for a deferred annuity or a commuted value. This assumption was revised to reflect the intervaluation experience.

It is assumed that the proportion of members of the Regular Force Plan electing a deferred annuity upon termination or disability are respectively 30% and 35% when they are not eligible to an immediate annuity (with less than 10 years of pensionable service). The proportion of Reserve Force members electing a deferred annuity is assumed to be 50%.

G.1.7 Rollover from the Reserve Plan to the Regular Plan¹

As mentioned previously, for this valuation, decrements due to rollover to the Regular Force Plan are distinct to those for regular termination.

Since one of the key factors for rolling-over to the Regular Force Plan is the working schedule of the Reserve Plan members, rates were developed based on whether the members were working part-time or full time².

The following table provides sample rollover rates from the Reserve Force Plan to the Regular Force Plan.

Years of pensionable service	Full-time	Part-time officer	Part-time other rank
0	50	15	30
2	100	15	30
4	150	15	30
8	190	15	30
9 to 14	200	15	30
15 and above	200	10	20

G.1.8 Mortality

Mortality rate assumptions for contributors, retired pensioners, disabled pensioners, surviving spouses and longevity improvement factors are the same for both the Regular Force Plan and the Reserve Force Plan. For 3B (own occupation) disability pensioners, the mortality rates assumption is the same as that for contributors and retirement pensioners.

The mortality rate assumptions were revised based on the experience from the 6 years preceding the valuation and to account for expected longevity improvements. Due to the small size of the population, the assumption for male surviving spouses is the same as the one used in the Actuarial Report on the

¹ See Appendix A.5.23

² Full-time members are defined as working at least 90% of a full-time schedule

Pension Plan for the Public Service of Canada as at 31 March 2020.

For contributors and retirement pensioners, experience showed that actual deaths of male officers were higher than expected before age 60, lower between age 75 and 90 and higher after age 90. For male other ranks, actual deaths were lower than expected before age 60 and higher than expected between age 60 and 80. For female members actual deaths were higher for all ages.

It is to be noted that the intervaluation mortality experience did not suggest higher than expected deaths due to the COVID-19 pandemic.

The following tables provides sample mortality rates.

Table 61 Sample of assumed rates of mortality for Plan Year 2023 for contributors and retirement pensioners
(Per 1,000 individuals)

Age	Male officer	Male other rank	Female
40	0.5	0.8	0.4
50	0.7	2.1	1.1
60	2.0	5.3	3.2
70	7.6	17.6	9.4
80	35.0	46.8	30.4
90	132.1	150.9	97.3
100	320.8	340.7	263.4
115	1000.0	1000.0	1000.0

Table 62 Sample of assumed rates of mortality for Plan Year 2023 for disability (3A) pensioners
(Per 1,000 individuals)

Age	Male officer	Male other rank	Female
40	0.9	8.6	3.6
50	2.4	11.5	5.8
60	5.9	17.3	11.0
70	14.6	35.9	22.7
80	43.7	76.2	50.3
90	124.5	160.5	115.4
100	308.0	312.4	268.9
115	1000.0	1000.0	1000.0

Table 63 Sample of assumed rates of mortality Plan Year 2023 for surviving spouses
(Per 1,000 individuals)

Age	Male	Female
Before 60	0.0	0.0
60	8.2	6.1
70	16.9	14.7
80	54.1	39.2
90	146.0	111.4
100	360.6	295.7
115	1000.0	1000.0

Longevity improvement factors

Mortality rates are reduced in the future in accordance with the same longevity improvement assumption¹ used in the 31st Actuarial Report on the Canada Pension Plan. Mortality improvements are expected to continue in the future but at a slower pace, reaching the ultimate improvement rate of 0.8% for ages below 89 in plan year 2040. Further, it is assumed that, ultimately, mortality improvement rates for males will decrease to the same level as females.

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

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

Table 64 Sample of assumed longevity improvement factors at initial and ultimate plan year mortality reductions
 (applicable at the end of the plan year)

Age	Male at plan year 2024	Male at plan year 2040	Female at plan year 2024	Female at plan year 2040
40	0.59	0.80	0.79	0.80
50	1.38	0.80	1.30	0.80
60	1.79	0.80	1.58	0.80
70	1.71	0.80	1.30	0.80
80	1.59	0.80	1.06	0.80
90	1.53	0.62	1.38	0.62
100	0.69	0.28	0.77	0.28
110	0.00	0.00	0.00	0.00

The following table shows the calculated cohort life expectancy for contributors and retirement pensioners based on the mortality assumptions described in this section. Cohort life expectancies take into account assumed longevity improvement factors and differ from calendar year life expectancies, which are based on the mortality rates of the given attained year.

Table 65 Cohort life expectancy of contributors and retirement pensioners
 (Years)

Age	As at 31 March 2022			As at 31 March 2042		
	Male officer	Male other rank	Female	Male officer	Male other rank	Female
60	28.5	25.4	29.2	29.6	26.7	30.3
65	23.5	20.8	24.4	24.6	22.0	25.5
70	18.8	16.6	19.8	19.8	17.8	20.9
75	14.3	12.8	15.6	15.3	13.9	16.6
80	10.4	9.5	11.8	11.3	10.4	12.7
85	7.2	6.6	8.6	7.9	7.4	9.3
90	4.8	4.5	5.9	5.4	5.0	6.5

¹ In this report 'longevity improvement assumption' is equivalent to the 'mortality improvement assumption' discussed in the 31st Actuarial Report on the Canada Pension Plan.

G.1.9 Family composition¹

Upon the death of the member, spouse and children might be eligible for an annual allowance for eligible survivors (Appendix A.5.20).

The assumptions regarding survivors are the same for both Regular and Reserve Force members and were revised based on the intervaluation experience.

The probability of leaving, upon death, a spouse eligible for a survivor allowance for male members was decreased on average by 3% before age 45 and increased by 1% thereafter. For female members, it was increased on average by 45% before age 60 and was decreased progressively thereafter.

Table 66 Probability of an eligible spouse at death of member

Age	Male	Female
30	0.47	0.70
40	0.68	0.85
50	0.72	0.85
60	0.74	0.55
70	0.72	0.40
80	0.61	0.29
90	0.41	0.06
100	0.14	0.00

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

A widow is assumed to always be younger. A widower is assumed to be older when death occurs at a younger age and is assumed to be younger when death occurs at later ages. Other than the ultimate age difference set at age 93, few changes were made to this assumption.

Table 67 Spouse age difference with the member at death of member

Age	Widow	Widower
Before 20	0	0
21 to 22	0	1
23 to 34	(1)	1
35 to 64	(2)	1
65 to 70	(3)	1
71 to 80	(3)	0
81 to 82	(3)	(2)
83 to 92	(4)	(2)
93 and above	(5)	(2)

The sex of each eligible surviving spouse is assumed to be the opposite of the deceased member's. Furthermore, it is assumed that deceased members will have no eligible child survivors.

For actual eligible children at valuation date, the following table shows the rates of children ceasing to

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

be eligible to a survivor allowance (Appendix A.5.19).

**Table 68 Assumed rates of children ceasing to be eligible for a survivor allowance
 (Per 1,000 individuals)**

Child age	All children
Before 18	0
18 to 20	150
21	200
22	250
23	333
24	500
25	1000

G.2 Other assumptions

G.2.1 Pension benefits division/Optional survivor benefit/Leave without pay

The division of pension benefits has almost no effect on the valuation results because the liability is reduced, on average, by approximately the amount paid to the credit of the former spouse. Consequently, no future pension benefits divisions were assumed in estimating the current service cost and liability. However, past pension benefits divisions were fully reflected in the liability. Two other provisions, namely the optional survivor benefit and the suspension of membership while on leave without pay, were also treated like pension benefits divisions for the same reason.

G.2.2 Minimum post-retirement death benefit

This valuation does not take into account the minimum death benefit described in Appendix A.5.21, with respect to deaths occurring after retirement. The resulting understatement of the accrued liability and current service cost is not material since the majority of the relatively few pensioners who die in the early years of retirement leave an eligible survivor.

G.2.3 Wage measure

Under the Reserve Force Plan, the retirement benefit is based on the career average of the updated earnings. Past earnings are updated using the wage measure as defined in the schedule of the Reserve Force Pension Plan Regulations. The regulations also prescribe the wage measures for calendar year 2007 and later as the greater of:

- the standard basic rate of pay for a period of duty or training of six hours or more, before any retroactive adjustment, that was prescribed or established under the *National Defence Act* to be paid on October 1 of the preceding year to a member at the rank of Corporal (class A), and
- the wage measure of the previous year.

The wage measure for calendar years up to 2022 is shown in the following table.

Calendar year	Rate of pay (\$)
2022	162.32
2021	152.98
2020	152.98
2019	140.12
2018	140.12
2017	131.74
2016	131.74
2015	131.74
2014	131.74
2013	129.16
2012	125.08
2011	125.08
2010	123.24
2000	89.52
1990	54.50
1980	25.75
1970	10.10
1960	5.67

G.2.4 Financing of elected prior service

The assumed future government credits in respect of prior service elections vary according to the financing vehicle (i.e. the Superannuation Account, the CFPF or the RFPF) into which the contributions are credited. The government matches member contributions made to the Superannuation Account for prior service elections; however, it makes no contributions if the member is paying the double rate. Government credits to the Pension Funds in respect of elected prior service are as described for the current service.

G.2.5 Outstanding terminations

Amounts paid from 1 April 2022 onward for terminations that occurred prior to that date were estimated from actual payments made using historical information provided in the valuation data at 31 March 2022. For this valuation, after reviewing the information, a total of \$97 million and \$17 million were set aside for the CFPF and the RFPF respectively.

G.2.6 Disability incidence rates for pensioners under age 60

Both deferred pensioners and pensioners receiving an annual allowance while under age 60 were assumed to have a 0% disability rate. The impact of this assumption on liability and current service cost is negligible.

G.2.7 Recovery rates for disability pensioners

No recoveries are assumed for disability pensioners. The resulting overstatement of liability and current service cost is negligible.

Appendix H — RCA Valuation methodology and assumptions

H.1 Valuation of the amounts available for benefits

The amounts available for benefits comprise the recorded balance in the Retirement Compensation Arrangements Account (RCA), which forms part of the Accounts of Canada, as well as 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 amounts available for benefits is equal to the book value.

H.2 Valuation of liabilities

This appendix describes the liability valuation methodologies used and any differences in economic assumptions from those used in the CFSA valuation.

H.2.1 Terminally funded RCA benefits

The following RCA benefits are being terminally funded (i.e. funded only when they occur):

- pre-retirement survivor benefits
- minimum death benefit

The above benefits are terminally funded because they are uncommon or of little financial significance. The pre-retirement survivor benefit becomes payable only when the average salary is less than 1.4 times the YMPE. As well, the minimum death benefit is expected to occur only with deaths at younger ages where the mortality rates are low.

H.2.2 Post-retirement survivor benefits

The limit on the amount of spousal annual allowance that can be provided under the CFSA decreases at the same time the member's pension reduces due to the CPP coordination, usually at age 65. The projected accrued benefit cost method was used to estimate the liabilities and current service cost for this RCA benefit.

H.2.3 Excess pensionable earnings

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

H.2.4 Administrative expenses

To compute the liabilities and current service cost, no provision was made regarding the expenses incurred for the administration of the RCA Account. These expenses, which are not debited to the RCA Account, are borne entirely by the government and are commingled with all other government expenses.

H.3 Actuarial assumptions

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

H.4 Valuation data

The RCA pension benefits in payment were provided as at 31 March 2022. RCA benefits expected to be paid in respect of contributor and accrued spousal allowances of current retired members were all derived from the membership data described in Appendix D and shown in Appendix K.

Appendix I — Canadian Forces Pension Plans projection

The results of the following projection were computed using the amounts available for benefits described in Appendix C, the data described in Appendices D and K, the methodology described in Appendix A and the assumptions described in Appendices F and G.

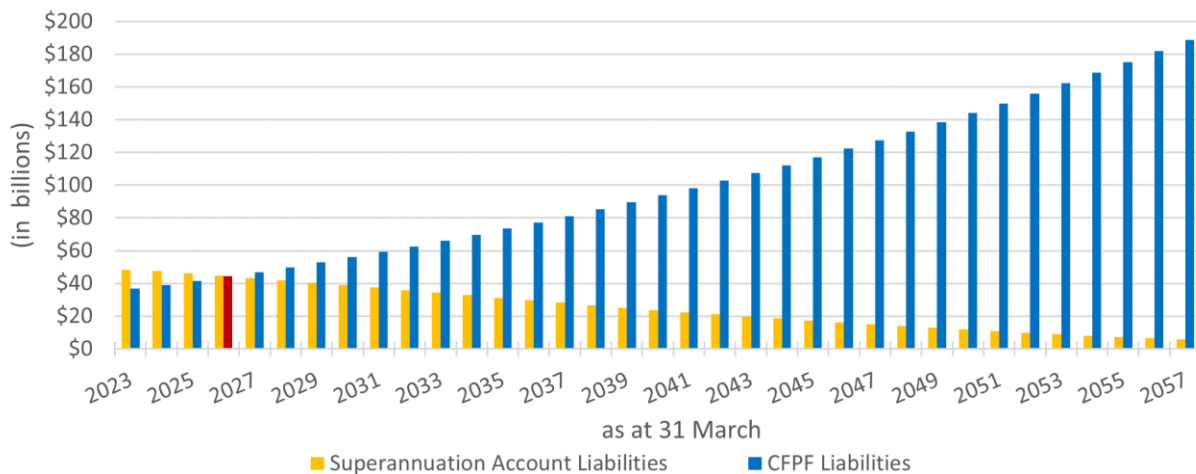
I.1 Projection of the Superannuation Account and the Canadian Forces Pension Fund liabilities

Prior to 1 April 2000, the CFSA Superannuation Account tracked all government pension benefit obligations related to the CFSA. 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 related to elections made prior to 1 April 2000 and interest earnings.

Starting 1 April 2000, the CFSA is financed through the Canadian Forces Pension Fund (CFPF). Government and member contributions, investment earnings and prior service contributions for elections since 1 April 2000 are added to the CFPF. The Pension Fund is debited with benefit payments made in respect of service earned since that date and administrative expenses.

The following graph 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. The red bar shows that it is expected that the CFPF liabilities will exceed the Superannuation Account liabilities in 2026.

Chart 1 Evolution of liabilities of Superannuation Account and CFPF over time

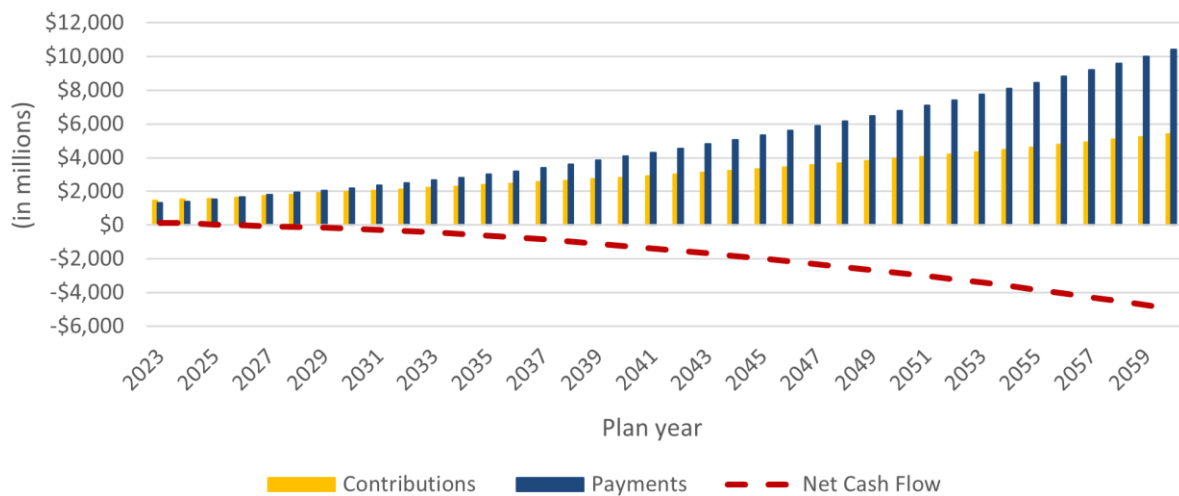


I.2 Evolution of cash flows under the Canadian Forces Pension Fund

In plan year 2023, contributions to the Pension Fund are expected to reach \$1,464 million, whereas payouts, including benefit payments and administrative expenses, are expected to reach \$1,333 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.

It is expected that the Pension Fund will have negative cash flows from plan year 2026, at which point a portion of the assets will be required to pay benefits. This implies that from plan year 2026, 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 is projected to begin in the plan year 2026, the Pension Fund's overall assets are expected to grow for the entire duration of the projection presented below when investment income is taken into consideration.

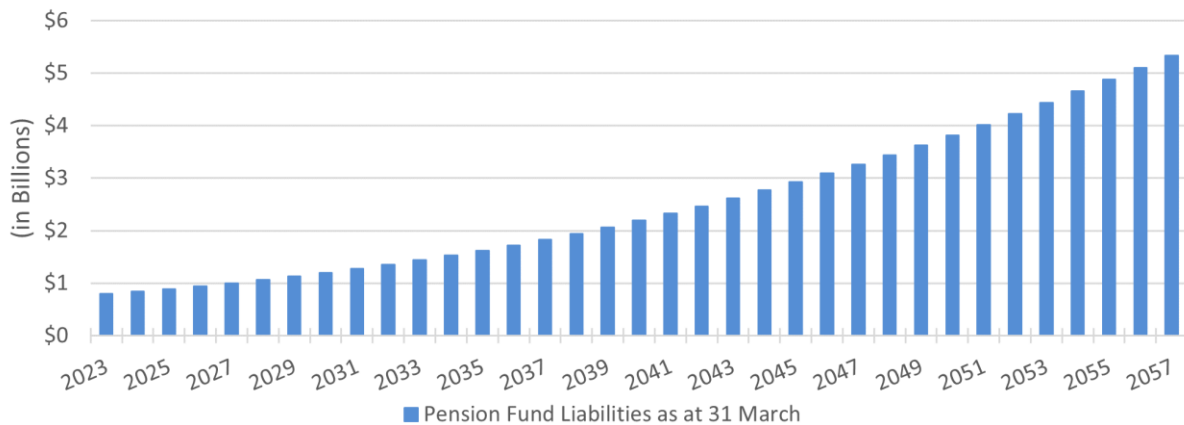
Chart 2 Evolution of cash flows of the CFPPF over time



I.3 Projection of the Reserve Force Pension Fund liabilities

The Reserve Force Plan was established on 1 April 2007 and is financed through the Reserve Force Pension Fund (RFPF). Government and member contributions, investment earnings and prior service contributions for elections are invested in the RFPF. The Pension Fund is debited with benefit payments made in respect of service earned since the establishment date and administrative expenses. The following graph presents the evolution over time of the Pension Fund liabilities for service under the Reserve Force Plan.

Chart 3 Evolution of liabilities of the RFPF over time

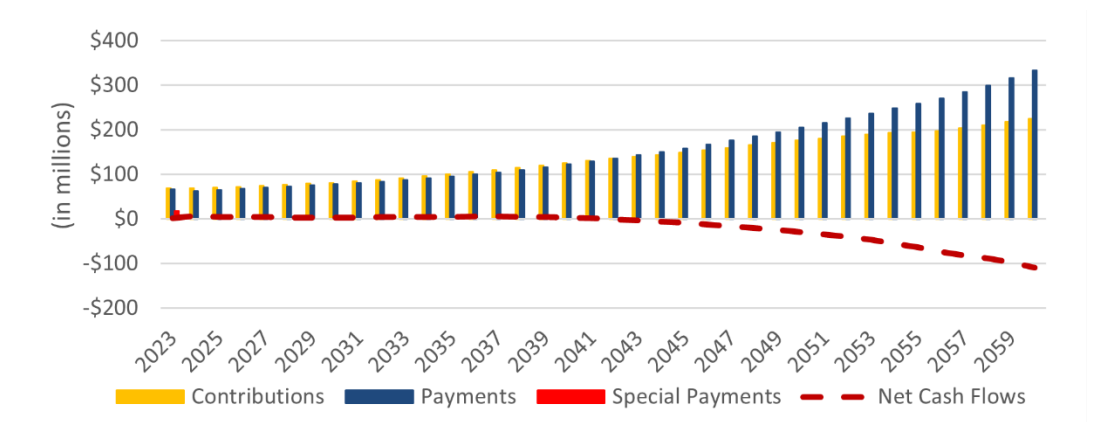


I.4 Evolution of cash flows under the Reserve Force Pension Fund

In plan year 2023, contributions to the Pension Fund are expected to reach \$69 million, whereas payouts, including benefit payments and administrative expenses, are expected to reach \$67 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.

It is expected that the Pension Fund will have negative cash flows from plan year 2042, at which point a portion of the assets will be required to pay benefits. This implies that from plan year 2042, 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. As experienced in recent years, the high volatility of the number of members rolling over and the magnitude of assets being transferred from the RFPF to the CFPF can create negative cash flows in any given year. Nevertheless, although negative cash flows can occur in any year, the Pension Fund's overall assets are expected to grow for the entire duration of the projection presented below when investment income is taken into consideration.

Chart 4 Evolution of cash flows of the RFPF over time



Appendix J — Uncertainty of future investment returns

J.1 Introduction

The projected financial status of the CFPF 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 CFPF is based on best-estimate assumptions. The objective of this section is to present a range of outcomes resulting from various alternative investment return scenarios. In this appendix, any references to assets, liabilities, surplus/(deficit), annual special payments and service cost are related to the CFPF only. Due to its relative small size, results for the RFPF are not presented in this appendix.

Appendix J.2 illustrates how investment experience may affect the funding status of the CFPF over time. The impact of financial market tail events on the financial status of the CFPF is explored in Section J.3, where a severe one-time financial shock is applied to PSP’s portfolio with the purpose of quantifying the impact on the funding ratio over the short-term horizon.

J.2 Range of potential funding ratios due to investment volatility

Chart 5 illustrates a range of funded ratios (actuarial value of assets over actuarial liabilities) that could be expected under the best-estimate portfolio. It takes into account that actuarial valuations would occur every three years starting in plan year 2022, 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 110% - 121% over the projection period.

Chart 5 Range of potential funding ratio for the best-estimate portfolio - CFPF

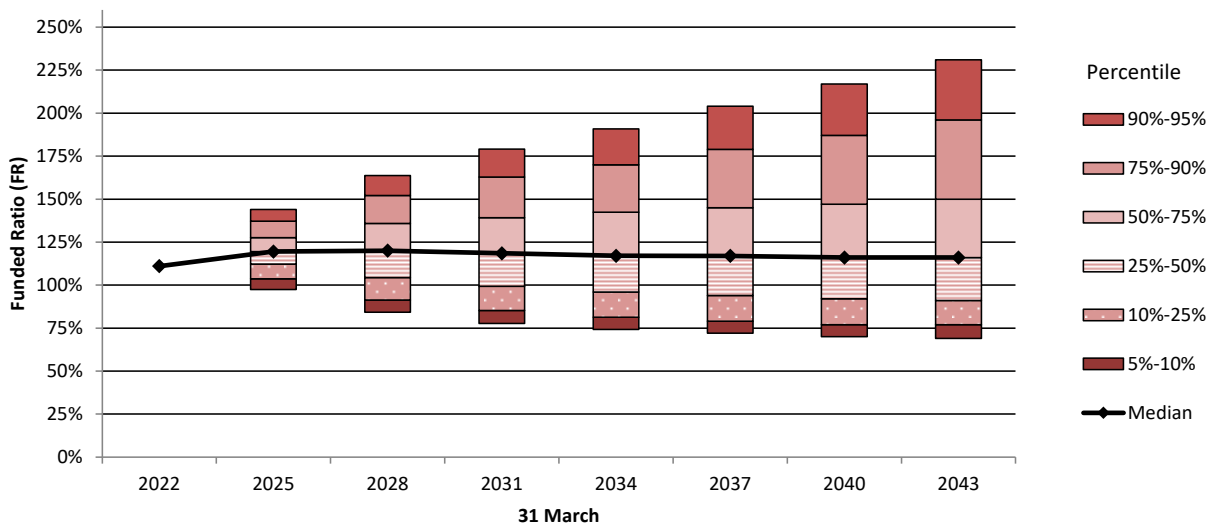
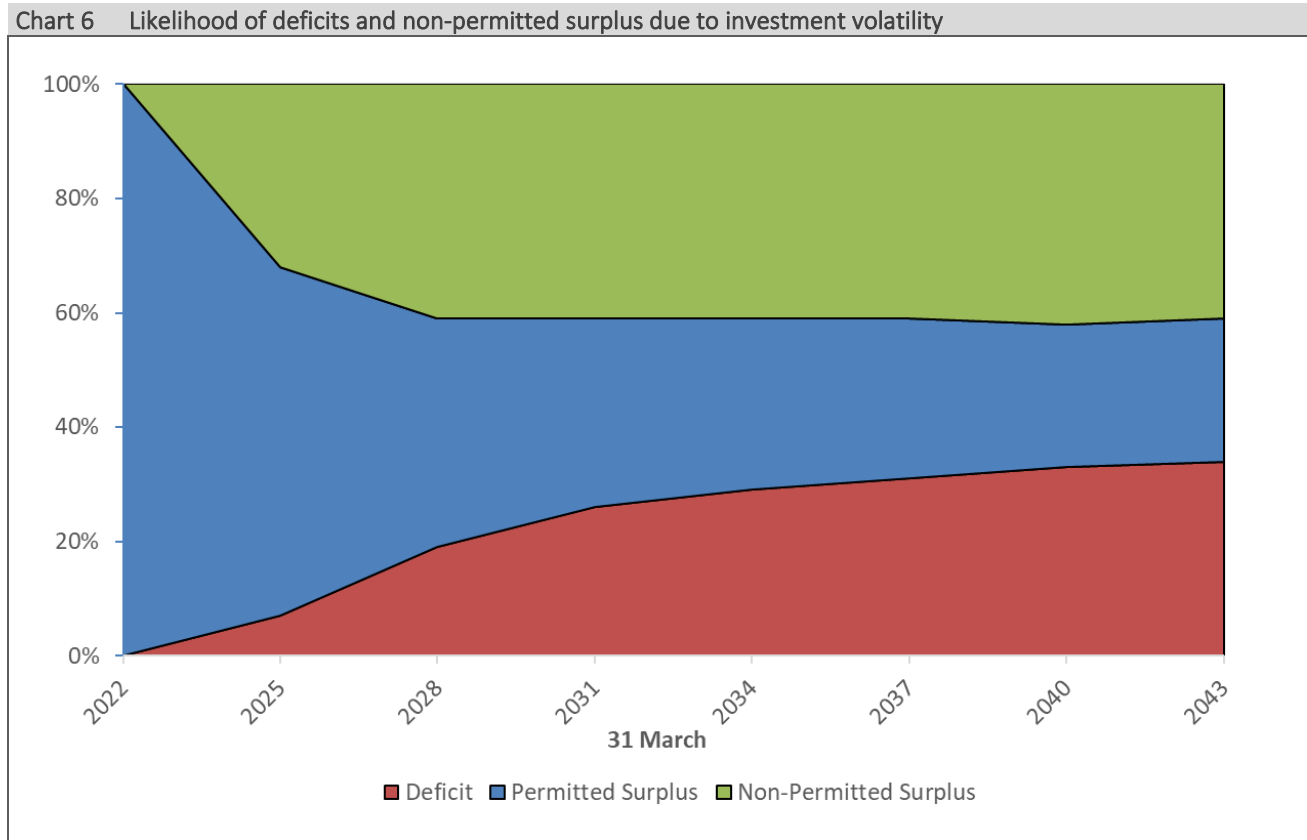


Chart 6 shows that the range of potential outcomes widens with time. It illustrates the probabilities associated with three possible funded statuses over the next 20 years: deficit, surplus less than 25% of liabilities, and non-permitted surplus.



J.3 Financial market tail events

This section focuses on the inherent volatility in PSP'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 2025 (the expected date of the next actuarial review).

To illustrate this, returns other than the best-estimate are assumed to occur in plan year 2023 followed by the best-estimate returns for plan years 2024 and 2025.

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

Extreme events occurring during the intervaluation period can result in the plan either requiring a special payment when there is a severe economic downturn or exceeding the non-permitted surplus

threshold when market conditions are extremely favorable. Table 70 shows the impact on the financial position of the CFPF such potential isolated tail-events. The use of the actuarial value of assets mitigates the funding risk due to extreme returns.

Table 70 Financial position of the CFPF as at 31 March 2025 due to asset return tail-events

Tail-events assessed	Nominal return		Components of the financial situation (in \$ millions)					Funding ratio
	Plan year 2023	Average 2023 to 2025	Market value of assets	Actuarial value of assets	Liability	Surplus/ (Deficit)	Annual special payments	
Current basis	5.3%	5.9%	53,306	52,855	44,217	8,639	0	120%
Left tail at the 2nd percentile	(15.2%)	(1.5%)	42,980	46,195	44,217	1,978	0	104%
Left tail at the 10th percentile	(7.3%)	1.5%	46,953	48,757	44,217	4,541	0	110%
Right tail at the 10th percentile	18.9%	10.3%	60,140	57,263	44,217	13,047	0	130%
Right tail at the 2nd percentile	26.7%	12.6%	64,113	59,826	44,217	15,609	0	135%

Appendix K — Detailed information on membership

In this appendix, the 'Age' and 'Service' nomenclature refers to completed years calculated at the beginning of the plan year.

Table 71 Regular Force - Male officers

Number and average annual earnings ^a as at 31 March 2022

Age	Years of accrued service								All years	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35+		
15 to 19	363 \$30,278	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	363 \$30,278
20 to 24	1,049 \$41,964	350 \$69,550	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,399 \$48,866
25 to 29	845 \$72,055	927 \$91,647	241 \$100,108	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2,013 \$84,436
30 to 34	477 \$80,824	782 \$103,814	978 \$111,328	258 \$120,918	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2,495 \$104,133
35 to 39	228 \$86,612	417 \$107,192	745 \$115,371	902 \$124,651	218 \$134,367	0 \$0	0 \$0	0 \$0	0 \$0	2,510 \$116,385
40 to 44	152 \$104,304	153 \$108,891	326 \$118,166	749 \$131,032	693 \$134,030	94 \$152,697	0 \$0	0 \$0	0 \$0	2,167 \$127,557
45 to 49	103 \$107,125	81 \$104,177	160 \$118,720	341 \$129,651	497 \$139,539	446 \$152,218	98 \$159,596	0 \$0	0 \$0	1,726 \$136,477
50 to 54	49 \$114,244	81 \$115,062	112 \$118,906	156 \$130,823	217 \$142,869	248 \$140,379	486 \$154,590	49 \$149,175	49 \$149,175	1,398 \$140,844
55 to 59	8 \$114,151	44 \$119,316	83 \$125,102	78 \$136,122	69 \$137,954	88 \$138,266	220 \$146,094	177 \$146,241	177 \$146,241	767 \$139,342
60 to 64 ^b	2 \$113,292	9 \$148,155	16 \$123,198	13 \$134,505	8 \$131,788	7 \$146,958	14 \$133,800	25 \$149,318	25 \$149,318	94 \$137,967
All ages	3,276 \$63,438	2,844 \$97,111	2,661 \$113,546	2,497 \$127,657	1,702 \$136,957	883 \$147,512	818 \$152,549	251 \$147,120	251 \$147,120	14,932 \$109,160

a. As defined in Appendix A.5.1.

b. As at 31 March 2022 these members are treated as pensioners.

Table 72 Regular Force - Male officers - Summary

	As at 31 March 2022	As at 31 March 2019
Average age	37.4	37.3
Average accrued service	13.7	13.9
Annualized pensionable payroll (in millions) ^a	\$1,630	\$1,446
Total PBDA indexed reduction to basic annuity (in millions)	\$3.5	\$4.4
Total PBDA indexed reduction adjustment (in millions)	\$0.6	\$0.8

a. The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 73 Regular Force - Male other ranks
Number and average annual earnings ^a as at 31 March 2022

Age	Years of accrued service								All years
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35+	
15 to 19	749 \$41,381	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	749 \$41,381
20 to 24	5,038 \$54,891	585 \$70,107	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	5,623 \$56,474
25 to 29	3,800 \$60,405	4,328 \$72,662	289 \$76,991	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	8,417 \$67,277
30 to 34	1,529 \$62,166	3,108 \$73,993	3,812 \$78,069	493 \$82,264	0 \$0	0 \$0	0 \$0	0 \$0	8,942 \$74,164
35 to 39	630 \$62,710	1,106 \$74,489	2,694 \$78,715	2,772 \$84,097	267 \$88,512	0 \$0	0 \$0	0 \$0	7,469 \$79,087
40 to 44	295 \$62,829	414 \$74,119	999 \$78,628	1,904 \$84,455	1,554 \$89,484	96 \$92,372	0 \$0	0 \$0	5,262 \$82,952
45 to 49	163 \$66,517	169 \$75,267	464 \$78,619	753 \$83,709	986 \$88,439	728 \$97,717	87 \$102,036	0 \$0	3,350 \$86,654
50 to 54	65 \$64,608	95 \$74,434	214 \$77,744	284 \$82,921	315 \$87,352	409 \$91,361	758 \$97,159	73 \$100,140	2,213 \$89,154
55 to 59	22 \$69,403	46 \$76,500	127 \$77,989	128 \$81,475	128 \$84,140	122 \$85,379	291 \$91,519	261 \$95,709	1,125 \$87,269
60 to 64 ^b	1 \$101,666	5 \$71,164	14 \$76,451	11 \$81,379	5 \$85,816	8 \$82,377	16 \$83,527	16 \$92,452	76 \$83,247
All ages	12,292 \$57,504	9,856 \$73,275	8,613 \$78,317	6,345 \$83,906	3,255 \$88,666	1,363 \$94,239	1,152 \$95,914	350 \$96,484	43,226 \$73,967

a. As defined in Appendix A.5.1.

b. As at 31 March 2022 these members are treated as pensioners.

Table 74 Regular Force - Male other ranks - Summary

	As at 31 March 2022	As at 31 March 2019
Average age	34.4	34.1
Average accrued service	11.1	11.0
Annualized pensionable payroll (in millions) ^a	\$3,197	\$3,008
Total PBDA indexed reduction to basic annuity (in millions)	\$4.2	\$5.1
Total PBDA indexed reduction adjustment (in millions)	\$1.0	\$1.2

a. The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 75 Regular Force - Female officersNumber and average annual earnings ^a as at 31 March 2022

Age	Years of accrued service								All years	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35+		
15 to 19	152 \$29,666	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	152 \$29,666
20 to 24	295 \$43,056	77 \$70,019	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	372 \$48,637
25 to 29	270 \$79,129	219 \$94,056	50 \$100,955	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	539 \$87,219
30 to 34	191 \$85,465	198 \$109,834	255 \$113,422	56 \$122,838	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	700 \$105,532
35 to 39	99 \$80,271	133 \$113,222	156 \$119,913	256 \$125,271	70 \$139,575	0 \$0	0 \$0	0 \$0	0 \$0	714 \$117,019
40 to 44	59 \$93,893	53 \$102,913	108 \$121,211	191 \$132,587	162 \$132,647	23 \$146,017	0 \$0	0 \$0	0 \$0	596 \$124,591
45 to 49	32 \$91,082	31 \$106,485	40 \$121,988	75 \$128,723	131 \$137,957	67 \$144,264	10 \$154,691	0 \$0	0 \$0	386 \$129,623
50 to 54	20 \$114,657	14 \$105,375	31 \$115,721	42 \$135,304	63 \$132,770	53 \$148,377	45 \$154,518	5 \$158,022	5 \$158,022	273 \$135,569
55 to 59	3 \$241,112	10 \$117,855	12 \$133,015	21 \$130,530	25 \$136,375	16 \$130,474	21 \$161,009	15 \$161,598	15 \$161,598	123 \$142,612
60 to 64 ^b	0 \$0	3 \$99,825	1 \$136,574	0 \$0	0 \$0	2 \$108,230	1 \$116,621	1 \$176,488	1 \$176,488	8 \$118,202
All ages	1,121 \$66,295	738 \$100,954	653 \$116,336	641 \$128,472	451 \$135,489	161 \$144,050	77 \$155,818	21 \$161,455	21 \$161,455	3,863 \$105,313

a. As defined in Appendix A.5.1.

b. As at 31 March 2022 these members are treated as pensioners.

Table 76 Regular Force - Female officers - Summary

	As at 31 March 2022	As at 31 March 2019
Average age	36.0	35.8
Average accrued service	11.8	11.9
Annualized pensionable payroll (in millions) ^a	\$407	\$341
Total PBDA indexed reduction to basic annuity (in millions)	\$0.1	\$0.1
Total PBDA indexed reduction adjustment (in millions)	\$0.0	\$0.0

a. The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 77 Regular Force - Female other ranks
Number and average annual earnings ^a as at 31 March 2022

Age	Years of accrued service								All years
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35+	
15 to 19	87 \$42,827	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	87 \$42,827
20 to 24	608 \$55,584	57 \$70,525	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	665 \$56,864
25 to 29	777 \$60,267	538 \$71,768	25 \$78,827	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,340 \$65,230
30 to 34	481 \$60,278	604 \$72,011	421 \$76,024	40 \$81,908	0 \$0	0 \$0	0 \$0	0 \$0	1,546 \$69,709
35 to 39	271 \$60,856	350 \$71,839	400 \$76,114	300 \$81,214	24 \$85,351	0 \$0	0 \$0	0 \$0	1,345 \$73,229
40 to 44	131 \$62,166	176 \$72,122	254 \$76,510	357 \$82,127	199 \$86,169	10 \$94,790	0 \$0	0 \$0	1,127 \$77,804
45 to 49	56 \$60,631	86 \$71,860	134 \$75,675	206 \$81,497	185 \$85,944	81 \$88,248	12 \$99,273	0 \$0	760 \$79,925
50 to 54	31 \$63,343	52 \$72,777	87 \$76,051	140 \$81,932	97 \$83,884	83 \$87,361	66 \$96,177	2 \$107,910	558 \$82,054
55 to 59	9 \$57,701	28 \$72,858	34 \$75,160	56 \$80,942	35 \$83,695	26 \$80,050	31 \$93,871	17 \$91,988	236 \$81,068
60 to 64 ^b	0 \$0	2 \$75,764	6 \$72,925	2 \$74,250	5 \$80,443	4 \$78,078	5 \$86,982	2 \$99,407	26 \$80,224
All ages	2,451 \$58,693	1,893 \$71,906	1,361 \$76,125	1,101 \$81,653	545 \$85,439	204 \$86,963	114 \$95,472	21 \$94,211	7,690 \$71,606

a. As defined in Appendix A.5.1 .

b. As at 31 March 2022 these members are treated as pensioners.

Table 78 Regular Force - Female other ranks - Summary

	As at 31 March 2022	As at 31 March 2019
Average age	36.2	36.2
Average accrued service	10.2	10.3
Annualized pensionable payroll (in millions) ^a	\$551	\$502
Total PBDA indexed reduction to basic annuity (in millions)	\$0.1	\$0.1
Total PBDA indexed reduction adjustment (in millions)	\$0.0	\$0.0

a. The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 79 Reserve Force - Male officersNumber and average annual earnings^a as at 31 March 2022

Age	Years of pensionable service								All years
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35+	
15 to 19	4	0	0	0	0	0	0	0	4
	\$21,764	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,764
20 to 24	277	6	0	0	0	0	0	0	283
	\$19,881	\$50,471	\$0	\$0	\$0	\$0	\$0	\$0	\$20,530
25 to 29	442	249	7	0	0	0	0	0	698
	\$22,841	\$29,265	\$45,016	\$0	\$0	\$0	\$0	\$0	\$25,355
30 to 34	213	251	195	6	0	0	0	0	665
	\$22,297	\$21,179	\$26,136	\$29,991	\$0	\$0	\$0	\$0	\$23,070
35 to 39	141	101	186	121	15	0	0	0	564
	\$20,669	\$22,856	\$17,499	\$26,990	\$23,740	\$0	\$0	\$0	\$21,453
40 to 44	125	72	121	145	60	12	0	0	535
	\$19,773	\$21,667	\$18,885	\$24,478	\$32,576	\$26,278	\$0	\$0	\$22,684
45 to 49	115	63	85	107	24	54	29	0	477
	\$16,594	\$18,877	\$20,308	\$21,368	\$28,150	\$36,322	\$33,338	\$0	\$22,461
50 to 54	116	59	100	127	11	24	78	24	539
	\$18,579	\$18,986	\$22,447	\$28,936	\$17,874	\$43,034	\$40,252	\$33,197	\$26,643
55 to 59	60	61	81	97	9	14	18	44	384
	\$11,814	\$17,248	\$24,818	\$24,842	\$25,174	\$28,130	\$33,080	\$39,432	\$23,781
60 ^b	17	32	75	62	6	1	5	20	218
	\$8,323	\$11,220	\$10,104	\$17,919	\$29,882	\$6,788	\$6,594	\$24,158	\$14,090
All ages	1,510	894	850	665	125	105	130	88	4,367
	\$20,357	\$22,925	\$20,812	\$24,777	\$28,710	\$35,335	\$36,422	\$34,260	\$23,002

a. As defined in Appendix A.5.1.

b. As at 31 March 2022 these members are treated as pensioners.

Table 80 Reserve Force - Male officers - Summary

	As at 31 March 2022	As at 31 March 2019
Average age	40.3	40.2
Average years of pensionable service	10.1	9.9
Annualized pensionable payroll (in millions) ^a	\$97	\$83

a. The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 81 Reserve Force - Male other ranks
Number and average annual earnings^a as at 31 March 2022

Age	Years of pensionable service								All years
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35+	
15 to 19	441 \$12,522	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	441 \$12,522
20 to 24	3,413 \$20,913	149 \$30,583	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3,562 \$21,317
25 to 29	1,514 \$21,671	1,280 \$23,476	113 \$23,248	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2,907 \$22,527
30 to 34	589 \$18,453	468 \$20,814	679 \$20,356	53 \$18,663	0 \$0	0 \$0	0 \$0	0 \$0	1,789 \$19,799
35 to 39	294 \$16,612	155 \$19,267	275 \$17,756	258 \$17,145	45 \$15,712	0 \$0	0 \$0	0 \$0	1,027 \$17,414
40 to 44	239 \$13,448	82 \$17,401	94 \$13,862	158 \$17,748	73 \$21,602	22 \$26,784	0 \$0	0 \$0	668 \$16,339
45 to 49	179 \$11,460	75 \$17,033	65 \$13,032	121 \$20,602	14 \$21,202	66 \$22,858	29 \$18,539	0 \$0	549 \$16,415
50 to 54	152 \$11,863	80 \$15,232	58 \$16,490	108 \$22,648	9 \$21,170	11 \$17,991	78 \$22,380	19 \$19,028	515 \$17,320
55 to 59	75 \$8,429	48 \$10,208	50 \$7,379	74 \$17,134	1 \$10,471	8 \$18,411	8 \$21,238	34 \$23,161	298 \$13,000
60 ^b	162 \$3,336	46 \$5,249	53 \$5,881	23 \$7,978	2 \$14,888	0 \$0	1 \$4,224	0 \$0	287 \$4,568
All ages	7,058 \$18,943	2,383 \$21,816	1,387 \$18,111	795 \$18,373	144 \$19,525	107 \$22,832	116 \$21,185	53 \$21,679	12,043 \$19,453

a. As defined in Appendix A.5.1.

b. As at 31 March 2022 these members are treated as pensioners.

Table 82 Reserve Force - Male other ranks - Summary

	As at 31 March 2022	As at 31 March 2019
Average age	31.2	31.0
Average years of pensionable service	6.0	6.7
Annualized pensionable payroll (in millions) ^a	\$233	\$198

a. The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 83 Reserve Force - Female officers
Number and average annual earnings^a as at 31 March 2022

Age	Years of pensionable service								All years	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35+		
15 to 19	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
20 to 24	91 \$13,374	1 \$28,955	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	92 \$13,543
25 to 29	171 \$19,088	133 \$15,302	2 \$55,005	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	306 \$17,677
30 to 34	95 \$17,245	131 \$15,722	112 \$16,254	5 \$2,163	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	343 \$16,120
35 to 39	48 \$21,167	54 \$19,127	132 \$18,108	65 \$21,761	6 \$3,623	0 \$0	0 \$0	0 \$0	0 \$0	305 \$19,264
40 to 44	57 \$14,331	37 \$24,317	83 \$15,123	85 \$15,921	31 \$21,910	5 \$9,297	0 \$0	0 \$0	0 \$0	298 \$16,949
45 to 49	48 \$14,008	39 \$21,392	41 \$20,355	55 \$16,380	9 \$37,612	17 \$14,653	6 \$49,229	0 \$0	0 \$0	215 \$19,186
50 to 54	31 \$12,762	51 \$16,194	40 \$16,070	35 \$22,934	1 \$94,406	5 \$17,097	11 \$35,322	3 \$16,261	0 \$0	177 \$18,555
55 to 59	31 \$11,030	21 \$16,812	47 \$17,504	46 \$15,249	2 \$7,919	3 \$7,756	3 \$10,592	7 \$31,999	0 \$0	160 \$15,712
60 ^b	14 \$9,419	19 \$8,766	34 \$13,387	36 \$13,571	4 \$5,252	0 \$0	1 \$1,131	6 \$11,657	0 \$0	114 \$11,704
All ages	586 \$16,201	486 \$16,947	491 \$16,968	327 \$17,346	53 \$22,089	30 \$13,478	21 \$34,135	16 \$21,420	0 \$0	2,010 \$17,099

a. As defined in Appendix A.5.1.

b. As at 31 March 2022 these members are treated as pensioners.

Table 84 Reserve Force - Female officers - Summary

Components	As at 31 March 2022	As at 31 March 2019
Average age	40.1	39.0
Average years of pensionable service	9.7	8.7
Annualized pensionable payroll (in millions) ^a	\$34	\$33

a. The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 85 Reserve Force - Female other ranks
Number and average annual earnings^a as at 31 March 2022

Age	Years of pensionable service								All years
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35+	
15 to 19	77 \$13,982	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	77 \$13,982
20 to 24	634 \$23,338	25 \$25,830	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	659 \$23,433
25 to 29	401 \$25,022	192 \$24,053	15 \$31,502	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	608 \$24,876
30 to 34	151 \$25,742	89 \$21,483	116 \$23,314	9 \$23,040	0 \$0	0 \$0	0 \$0	0 \$0	365 \$23,865
35 to 39	106 \$24,831	25 \$20,242	49 \$14,745	50 \$23,250	16 \$27,433	0 \$0	0 \$0	0 \$0	246 \$22,204
40 to 44	77 \$20,728	22 \$14,625	15 \$16,012	31 \$25,230	16 \$6,414	8 \$23,317	0 \$0	0 \$0	169 \$19,108
45 to 49	56 \$21,265	28 \$20,380	13 \$17,372	11 \$8,078	8 \$23,898	7 \$23,483	3 \$27,718	0 \$0	126 \$19,960
50 to 54	49 \$12,440	17 \$8,438	13 \$27,744	6 \$28,708	0 \$0	2 \$11,294	3 \$40,993	2 \$50,849	92 \$16,665
55 to 59	37 \$11,092	10 \$11,007	7 \$4,679	15 \$24,071	1 \$40,528	1 \$47,533	4 \$31,722	9 \$19,283	84 \$15,510
60+ ^b	24 \$4,136	6 \$8,807	9 \$7,967	4 \$5,495	1 \$821	0 \$0	0 \$0	0 \$0	44 \$5,605
All ages	1,612 \$22,538	414 \$21,451	237 \$20,382	126 \$22,192	42 \$18,431	18 \$23,391	10 \$33,302	11 \$25,022	2,470 \$22,123

a. As defined in Appendix A.5.1 .

b. As at 31 March 2022 these members are treated as pensioners.

Table 86 Reserve Force - Female other ranks - Summary

Components	As at 31 March 2022	As at 31 March 2019
Average age	31.8	31.3
Average years of pensionable service	5.3	6.3
Annualized pensionable payroll (in millions) ^a	\$54	\$45

a. The aggregate pensionable earnings of all contributors with less than 35 years of pensionable service.

Table 87 Regular Force - Male officers - Retirement pensioners
Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	48	1,617	0	n/a
25 to 29	0	n/a	0	n/a	38	2,933	0	n/a
30 to 34	0	n/a	0	n/a	66	9,530	1	7,983
35 to 39	3	38,537	0	n/a	90	11,654	3	2,580
40 to 44	153	50,620	5	42,232	70	14,740	3	13,084
45 to 49	507	54,328	17	22,060	82	17,358	2	1,103
50 to 54	1,011	55,808	79	14,653	61	14,516	0	n/a
55 to 59	2,358	58,319	181	9,604	98	13,233	1	18,040
60 to 64	2,912	63,696	238	11,717	0	n/a	0	n/a
65 to 69	2,281	55,830	152	12,590	0	n/a	0	n/a
70 to 74	2,008	53,503	100	7,265	0	n/a	0	n/a
75 to 79	2,257	49,551	49	1,840	0	n/a	0	n/a
80 to 84	1,669	51,141	7	3,293	0	n/a	0	n/a
85 to 89	964	51,959	0	n/a	0	n/a	0	n/a
90 to 94	546	48,981	0	n/a	0	n/a	0	n/a
95 to 99	147	48,301	0	n/a	0	n/a	0	n/a
100 to 104	26	35,727	0	n/a	0	n/a	0	n/a
105+	1	39,938	0	n/a	0	n/a	0	n/a
All ages	16,843	55,317	828	10,899	553	11,762	10	7,522

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 88 Summary of Regular Force - Male officers - retirement pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	69.2	68.4
Average age at retirement/termination	49.0	48.8

Table 89 Regular Force - Female officers - Retirement pensioners
Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	6	1,274	0	n/a
25 to 29	0	n/a	0	n/a	8	3,956	0	n/a
30 to 34	0	n/a	0	n/a	14	13,935	0	n/a
35 to 39	2	24,041	0	n/a	25	10,962	0	n/a
40 to 44	50	49,410	2	42,773	37	16,452	1	7,807
45 to 49	138	51,395	9	28,913	17	13,505	2	1,547
50 to 54	164	49,477	13	19,395	18	18,783	2	13,585
55 to 59	256	44,904	22	5,619	25	17,335	1	4,706
60 to 64	276	53,731	21	18,498	2	16,363	0	n/a
65 to 69	188	43,467	14	10,224	0	n/a	0	n/a
70 to 74	130	43,620	7	2,903	0	n/a	0	n/a
75 to 79	73	37,491	4	3,418	0	n/a	0	n/a
80 to 84	34	41,147	1	1,081	0	n/a	0	n/a
85 to 89	22	37,340	0	n/a	0	n/a	0	n/a
90 to 94	14	33,738	0	n/a	0	n/a	0	n/a
95 to 99	8	28,789	0	n/a	0	n/a	0	n/a
100 to 104	2	36,253	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	1,357	46,887	93	13,851	152	14,151	6	7,129

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 90 Summary of Regular Force - Female officers - Retirement pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	62.0	60.7
Average age at retirement/termination	47.0	46.7

Table 91 Regular Force - Male other ranks - Retirement pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	1	1,952	0	n/a
20 to 24	0	n/a	0	n/a	122	2,076	0	n/a
25 to 29	0	n/a	0	n/a	339	3,514	0	n/a
30 to 34	12	15,039	0	n/a	456	5,303	0	n/a
35 to 39	57	25,707	0	n/a	520	6,423	0	n/a
40 to 44	305	31,380	0	n/a	317	9,485	0	n/a
45 to 49	761	33,683	3	5,533	165	10,461	0	n/a
50 to 54	2,850	34,272	5	3,824	158	10,177	0	n/a
55 to 59	6,106	33,229	4	2,016	161	7,624	0	n/a
60 to 64	8,114	34,329	0	n/a	3	24,101	0	n/a
65 to 69	5,495	26,718	0	n/a	0	n/a	0	n/a
70 to 74	5,087	27,753	0	n/a	0	n/a	0	n/a
75 to 79	4,775	27,412	0	n/a	0	n/a	0	n/a
80 to 84	4,593	26,613	0	n/a	0	n/a	0	n/a
85 to 89	3,421	25,444	0	n/a	0	n/a	0	n/a
90 to 94	1,204	24,967	0	n/a	0	n/a	0	n/a
95 to 99	254	25,497	0	n/a	0	n/a	0	n/a
100 to 104	24	24,539	0	n/a	0	n/a	0	n/a
105+	4	23,469	0	n/a	0	n/a	0	n/a
All ages	43,062	29,756	12	3,649	2,242	6,621	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 92 Summary of Regular Force - Male other ranks - Retirement pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	69.4	68.3
Average age at retirement/termination	45.3	45.2

Table 93 Regular Force - Female other ranks - Retirement pensioners
 Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	13	3,290	0	n/a
25 to 29	1	14,045	0	n/a	19	3,560	0	n/a
30 to 34	0	n/a	0	n/a	31	6,925	0	n/a
35 to 39	3	26,528	0	n/a	55	7,770	0	n/a
40 to 44	20	28,502	0	n/a	52	10,239	0	n/a
45 to 49	69	32,010	0	n/a	33	12,450	0	n/a
50 to 54	325	31,409	2	3,092	40	10,962	0	n/a
55 to 59	820	28,081	4	2,100	57	6,803	0	n/a
60 to 64	1,166	28,195	0	n/a	0	n/a	0	n/a
65 to 69	709	22,308	0	n/a	0	n/a	0	n/a
70 to 74	291	23,586	0	n/a	0	n/a	0	n/a
75 to 79	56	24,619	0	n/a	0	n/a	0	n/a
80 to 84	55	21,268	0	n/a	0	n/a	0	n/a
85 to 89	17	21,387	0	n/a	0	n/a	0	n/a
90 to 94	8	20,337	0	n/a	0	n/a	0	n/a
95 to 99	0	n/a	0	n/a	0	n/a	0	n/a
100 to 104	0	n/a	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	3,540	26,761	6	2,431	300	8,407	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 94 Summary of Regular Force - Female other ranks - Retirement pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	62.6	60.2
Average age at retirement/termination	44.1	43.7

Table 95 Regular Force - Male officers - 3B Pensioners
Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	8	2,174	0	n/a
25 to 29	0	n/a	0	n/a	12	3,042	0	n/a
30 to 34	23	23	0	n/a	12	3,899	0	n/a
35 to 39	75	75	1	49,613	9	4,980	0	n/a
40 to 44	160	160	4	10,456	6	16,957	0	n/a
45 to 49	224	224	13	18,550	9	20,216	0	n/a
50 to 54	354	354	24	10,796	10	13,549	0	n/a
55 to 59	609	609	46	11,859	2	7,501	0	n/a
60 to 64	640	640	44	9,099	1	66,294	0	n/a
65 to 69	354	354	24	12,828	0	n/a	0	n/a
70 to 74	182	182	6	5,559	0	n/a	0	n/a
75 to 79	76	76	4	7,723	0	n/a	0	n/a
80 to 84	30	30	1	2,453	0	n/a	0	n/a
85 to 89	12	12	0	n/a	0	n/a	0	n/a
90 to 94	0	n/a	0	n/a	0	n/a	0	n/a
95 to 99	0	n/a	0	n/a	0	n/a	0	n/a
100 to 104	0	n/a	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	2,739	421	167	11,450	69	9,362	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 96 Summary of Regular Force - Male officers - 3B Pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	58.8	57.8
Average age at retirement/termination	49.0	48.6

Table 97 Regular Force - Female officers - 3B Pensioners
Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	2	597	0	n/a
25 to 29	2	17,410	0	n/a	6	3,489	0	n/a
30 to 34	12	22,856	0	n/a	3	4,519	0	n/a
35 to 39	34	27,017	1	6,307	10	6,007	0	n/a
40 to 44	101	34,579	5	15,011	5	3,269	0	n/a
45 to 49	118	42,261	10	11,492	0	n/a	0	n/a
50 to 54	117	47,272	7	9,716	2	6,819	0	n/a
55 to 59	186	57,610	26	19,440	1	2,944	0	n/a
60 to 64	119	54,445	19	6,689	0	n/a	0	n/a
65 to 69	70	43,928	3	13,341	0	n/a	0	n/a
70 to 74	28	48,324	2	19,906	0	n/a	0	n/a
75 to 79	8	32,588	0	n/a	0	n/a	0	n/a
80 to 84	0	n/a	0	n/a	0	n/a	0	n/a
85 to 89	0	n/a	0	n/a	0	n/a	0	n/a
90 to 94	0	n/a	0	n/a	0	n/a	0	n/a
95 to 99	0	n/a	0	n/a	0	n/a	0	n/a
100 to 104	0	n/a	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	795	46,693	73	13,379	29	4,437	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 98 Summary of Regular Force - Female officers - 3B Pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	54.5	53.2
Average age at retirement/termination	46.2	45.8

Table 99 Regular Force - Male other ranks - 3B Pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	19	3,072	0	n/a
25 to 29	14	13,445	0	n/a	72	3,755	0	n/a
30 to 34	408	15,619	0	n/a	91	6,375	0	n/a
35 to 39	1,237	18,277	0	n/a	121	7,166	0	n/a
40 to 44	1,725	22,432	1	0	57	7,845	0	n/a
45 to 49	2,078	26,332	2	19	23	8,264	0	n/a
50 to 54	3,435	30,969	0	n/a	19	6,804	0	n/a
55 to 59	4,770	34,145	2	112	30	9,133	0	n/a
60 to 64	3,576	35,485	0	n/a	0	n/a	0	n/a
65 to 69	1,396	28,716	0	n/a	0	n/a	0	n/a
70 to 74	694	27,304	0	n/a	0	n/a	0	n/a
75 to 79	423	23,687	0	n/a	0	n/a	0	n/a
80 to 84	302	19,946	0	n/a	0	n/a	0	n/a
85 to 89	172	16,900	0	n/a	0	n/a	0	n/a
90 to 94	79	16,995	0	n/a	0	n/a	0	n/a
95 to 99	9	16,249	0	n/a	0	n/a	0	n/a
100 to 104	1	19,480	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	20,319	29,442	5	53	432	6,520	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 100 Summary of Regular Force - Male other ranks - 3B Pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	55.9	55.2
Average age at retirement/termination	43.4	43.2

Table 101 Regular Force - Female other ranks - 3B Pensioners
Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	6	2,868	0	n/a
25 to 29	0	n/a	0	n/a	15	3,315	0	n/a
30 to 34	56	14,534	0	n/a	19	4,539	0	n/a
35 to 39	206	17,050	0	n/a	37	5,692	0	n/a
40 to 44	389	20,787	0	n/a	28	7,290	0	n/a
45 to 49	483	24,141	0	n/a	20	7,836	0	n/a
50 to 54	856	28,547	0	n/a	14	19,843	0	n/a
55 to 59	1,097	29,928	0	n/a	20	5,873	0	n/a
60 to 64	820	29,439	0	n/a	1	17,356	0	n/a
65 to 69	280	24,283	0	n/a	0	n/a	0	n/a
70 to 74	53	21,665	0	n/a	0	n/a	0	n/a
75 to 79	5	25,396	0	n/a	0	n/a	0	n/a
80 to 84	1	27,951	0	n/a	0	n/a	0	n/a
85 to 89	1	19,367	0	n/a	0	n/a	0	n/a
90 to 94	1	7,596	0	n/a	0	n/a	0	n/a
95 to 99	0	n/a	0	n/a	0	n/a	0	n/a
100 to 104	0	n/a	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	4,248	26,744	0	n/a	160	7,108	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 102 Summary of Regular Force - Female other ranks - 3B Pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	54.5	53.1
Average age at retirement/termination	44.4	43.8

Table 103 Regular Force - Male officers - 3A Pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	0	n/a	0	n/a
25 to 29	0	n/a	0	n/a	0	n/a	0	n/a
30 to 34	0	n/a	0	n/a	0	n/a	0	n/a
35 to 39	0	n/a	0	n/a	0	n/a	0	n/a
40 to 44	0	n/a	0	n/a	0	n/a	0	n/a
45 to 49	1	13,910	0	n/a	0	n/a	0	n/a
50 to 54	0	n/a	0	n/a	0	n/a	0	n/a
55 to 59	3	52,337	0	n/a	0	n/a	0	n/a
60 to 64	4	16,615	0	n/a	0	n/a	0	n/a
65 to 69	9	32,212	1	6,459	0	n/a	0	n/a
70 to 74	8	37,796	0	n/a	0	n/a	0	n/a
75 to 79	4	29,869	0	n/a	0	n/a	0	n/a
80 to 84	6	25,552	0	n/a	0	n/a	0	n/a
85 to 89	6	12,886	0	n/a	0	n/a	0	n/a
90 to 94	1	38,482	0	n/a	0	n/a	0	n/a
95 to 99	2	26,872	0	n/a	0	n/a	0	n/a
100 to 104	0	n/a	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	44	28,909	1	6,459	0	n/a	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 104 Summary of Regular Force - Male officers - 3A Pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	74.2	75.3
Average age at retirement/termination	41.0	40.0

Table 105 Regular Force - Female officers - 3A Pensioners
Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	0	n/a	0	n/a
25 to 29	0	n/a	0	n/a	0	n/a	0	n/a
30 to 34	0	n/a	0	n/a	0	n/a	0	n/a
35 to 39	0	n/a	0	n/a	0	n/a	0	n/a
40 to 44	0	n/a	0	n/a	0	n/a	0	n/a
45 to 49	0	n/a	0	n/a	0	n/a	0	n/a
50 to 54	1	8,310	0	n/a	0	n/a	0	n/a
55 to 59	0	n/a	0	n/a	0	n/a	0	n/a
60 to 64	0	n/a	0	n/a	0	n/a	0	n/a
65 to 69	3	20,370	0	n/a	0	n/a	0	n/a
70 to 74	5	29,242	0	n/a	0	n/a	0	n/a
75 to 79	3	24,929	0	n/a	0	n/a	0	n/a
80 to 84	0	n/a	0	n/a	0	n/a	0	n/a
85 to 89	0	n/a	0	n/a	0	n/a	0	n/a
90 to 94	1	14,085	0	n/a	0	n/a	0	n/a
95 to 99	0	n/a	0	n/a	0	n/a	0	n/a
100 to 104	0	n/a	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	13	23,423	0	n/a	0	n/a	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 106 Summary of Regular Force - Female officers - 3A Pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	72.4	70.0
Average age at retirement/termination	44.8	43.4

Table 107 Regular Force - Male other ranks - 3A Pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	0	n/a	0	n/a
25 to 29	0	n/a	0	n/a	0	n/a	0	n/a
30 to 34	0	n/a	0	n/a	0	n/a	0	n/a
35 to 39	3	17,812	0	n/a	0	n/a	0	n/a
40 to 44	0	n/a	0	n/a	0	n/a	0	n/a
45 to 49	1	37,152	0	n/a	0	n/a	0	n/a
50 to 54	7	22,457	0	n/a	0	n/a	0	n/a
55 to 59	43	18,094	0	n/a	0	n/a	0	n/a
60 to 64	49	20,650	0	n/a	0	n/a	0	n/a
65 to 69	36	18,205	0	n/a	0	n/a	0	n/a
70 to 74	26	21,198	0	n/a	0	n/a	0	n/a
75 to 79	24	15,496	0	n/a	0	n/a	0	n/a
80 to 84	41	13,206	0	n/a	0	n/a	0	n/a
85 to 89	51	14,101	0	n/a	0	n/a	0	n/a
90 to 94	26	15,794	0	n/a	0	n/a	0	n/a
95 to 99	5	13,857	0	n/a	0	n/a	0	n/a
100 to 104	0	n/a	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	312	17,169	0	n/a	0	n/a	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 108 Summary of Regular Force - Male other ranks - 3A Pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	73.8	73.1
Average age at retirement/termination	38.0	37.7

Table 109 Regular Force - Female other ranks - 3A Pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity (includes PBDA, CPP if applicable) ^a				Deferred annuity			
	SA/CFPF		RCA		SA/CFPF		RCA	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
0 to 19	0	n/a	0	n/a	0	n/a	0	n/a
20 to 24	0	n/a	0	n/a	0	n/a	0	n/a
25 to 29	0	n/a	0	n/a	0	n/a	0	n/a
30 to 34	0	n/a	0	n/a	0	n/a	0	n/a
35 to 39	0	n/a	0	n/a	0	n/a	0	n/a
40 to 44	0	n/a	0	n/a	0	n/a	0	n/a
45 to 49	3	18,352	0	n/a	0	n/a	0	n/a
50 to 54	5	16,400	0	n/a	0	n/a	0	n/a
55 to 59	16	18,711	0	n/a	0	n/a	0	n/a
60 to 64	23	14,148	0	n/a	0	n/a	0	n/a
65 to 69	11	20,476	0	n/a	0	n/a	0	n/a
70 to 74	3	15,129	0	n/a	0	n/a	0	n/a
75 to 79	2	26,404	0	n/a	0	n/a	0	n/a
80 to 84	0	n/a	0	n/a	0	n/a	0	n/a
85 to 89	0	n/a	0	n/a	0	n/a	0	n/a
90 to 94	0	n/a	0	n/a	0	n/a	0	n/a
95 to 99	0	n/a	0	n/a	0	n/a	0	n/a
100 to 104	0	n/a	0	n/a	0	n/a	0	n/a
105+	0	n/a	0	n/a	0	n/a	0	n/a
All ages	63	17,227	0	n/a	0	n/a	0	n/a

a. Includes annual allowance adjustments, PBDA reductions and CPP coordination if in effect at the valuation date.

Table 110 Summary of Regular Force - Female other ranks - 3A Pensioners

	As at 31 March 2022	As at 31 March 2019
Average age	61.6	58.6
Average age at retirement/termination	39.9	38.9

Table 111 Reserve Force - Male officers - Retirement pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity		Deferred annuity	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
20 to 24	0	n/a	4	825
25 to 29	0	n/a	76	669
30 to 34	0	n/a	216	1,012
35 to 39	0	n/a	241	1,168
40 to 44	0	n/a	241	1,359
45 to 49	0	n/a	169	1,663
50 to 54	10	6,595	195	2,344
55 to 59	63	12,238	211	2,441
60 to 64	307	6,592	0	n/a
65 to 69	492	4,292	0	n/a
70 to 74	280	3,758	0	n/a
75+	92	2,624	0	n/a
All ages	1,244	5,037	1,353	1,578

Table 112 Summary of Reserve Force - Male officers - Retirement pensioners

	Immediate annuity as at 31 March 2022	Immediate annuity as at 31 March 2019	Deferred annuity as at 31 March 2022	Deferred annuity as at 31 March 2019
Average age	67.4	65.9	43.6	42.6
Average age at retirement/termination	60.1	60.3	37.2	37.8

Table 113 Reserve Force - Male other ranks - Retirement pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity		Deferred annuity	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
20 to 24	0	n/a	158	652
25 to 29	0	n/a	885	745
30 to 34	1	9,304	1,787	978
35 to 39	2	3,299	1,280	1,246
40 to 44	1	8,749	547	1,362
45 to 49	2	7,536	307	1,779
50 to 54	14	6,511	219	2,078
55 to 59	63	8,686	147	1,731
60 to 64	221	5,213	0	n/a
65 to 69	166	3,859	0	n/a
70 to 74	45	3,439	0	n/a
75+	7	1,960	0	n/a
All ages	522	5,056	5,330	1,146

Table 114 Summary of Reserve Force - Male other ranks - Retirement pensioners

	Immediate annuity as at 31 March 2022	Immediate annuity as at 31 March 2019	Deferred annuity as at 31 March 2022	Deferred annuity as at 31 March 2019
Average age	63.9	62.8	36.0	34.0
Average age at retirement/termination	57.4	57.9	29.5	29.2

Table 115 Reserve Force - Female officers - Retirement pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity		Deferred annuity	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
20 to 24	0	n/a	1	1,117
25 to 29	0	n/a	54	692
30 to 34	0	n/a	141	880
35 to 39	0	n/a	182	1,010
40 to 44	0	n/a	133	997
45 to 49	0	n/a	85	1,298
50 to 54	8	6,728	88	2,425
55 to 59	18	5,529	73	1,036
60 to 64	105	3,891	0	n/a
65 to 69	122	3,704	0	n/a
70 to 74	69	3,520	0	n/a
75+	23	2,314	0	n/a
All ages	345	3,797	757	1,160

Table 116 Summary of Reserve Force - Female officers - Retirement pensioners

	Immediate annuity as at 31 March 2022	Immediate annuity as at 31 March 2019	Deferred annuity as at 31 March 2022	Deferred annuity as at 31 March 2019
Average age	66.7	65.6	41.5	40.2
Average age at retirement/termination	60.3	60.3	35.4	35.4

Table 117 Reserve Force - Female other ranks - Retirement pensioners

Number and average annual pension as at 31 March 2022

Age	Immediate annuity		Deferred annuity	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
20 to 24	0	n/a	21	671
25 to 29	0	n/a	104	873
30 to 34	0	n/a	279	1,069
35 to 39	0	n/a	235	1,272
40 to 44	0	n/a	147	1,383
45 to 49	0	n/a	76	1,571
50 to 54	4	15,950	57	2,607
55 to 59	17	13,996	38	2,889
60 to 64	65	7,984	0	n/a
65 to 69	32	3,957	0	n/a
70 to 74	9	5,860	0	n/a
75+	0	n/a	0	n/a
All ages	127	7,875	957	1,341

Table 118 Summary of Reserve Force - Female other ranks - Retirement pensioners

	Immediate annuity as at 31 March 2022	Immediate annuity as at 31 March 2019	Deferred annuity as at 31 March 2022	Deferred annuity as at 31 March 2019
Average age	63.3	61.6	37.8	35.4
Average age at retirement/termination	55.7	56.2	30.6	30.2

Table 119 Reserve Force - Officers - Disability pensioners

Number and average annual pension as at 31 March 2022

Age	Male officer		Female officer	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
30 to 34	2	677	0	n/a
35 to 39	1	877	0	n/a
40 to 44	3	2,577	0	n/a
45 to 49	0	n/a	0	n/a
50 to 54	2	561	2	1,337
55 to 59	10	7,390	5	566
60 to 64	55	2,565	22	1,441
65 to 69	46	1,807	10	1,078
70 to 74	14	2,247	5	1,351
75+	2	105	0	n/a
All ages	135	2,525	44	1,244

Table 120 Summary of Reserve Force - Officers - Disability pensioners

	Male officer as at 31 March 2022	Male officer as at 31 March 2019	Female officer as at 31 March 2022	Female officer as at 31 March 2019
Average age	63.8	57.3	63.8	54.0
Average age at retirement/termination	56.6	52.1	56.8	50.1

Table 121 Reserve Force - Other ranks - Disability pensioners

Number and average annual pension as at 31 March 2022

Age	Male Other rank		Female Other rank	
	Number of pensioners	Average pension (\$)	Number of pensioners	Average pension (\$)
20 to 24	1	686	0	n/a
25 to 29	4	1,025	2	1,427
30 to 34	18	1,215	10	1,248
35 to 39	21	1,814	3	1,300
40 to 44	23	1,729	8	2,053
45 to 49	13	1,946	1	604
50 to 54	15	3,579	4	6,177
55 to 59	18	3,708	7	5,396
60 to 64	51	2,661	10	3,127
65 to 69	19	2,087	5	5,780
70 to 74	2	1,019	1	10,109
75+	1	732	0	n/a
All ages	186	2,303	51	3,314

Table 122 Summary of Reserve Force - Other ranks - Disability pensioners

	Male Other rank as at 31 March 2022	Male Other rank as at 31 March 2019	Female Other rank as at 31 March 2022	Female Other rank as at 31 March 2019
Average age	51.6	46.2	49.5	51.4
Average age at retirement/termination	44.8	41.4	43.1	45.7

Table 123 Regular Force - Surviving spouses

Number and average annual allowance as at 31 March 2022

Age	SA/CFPF			RCA	
	Number of widow	Number of widower	Allowance (\$)	Number	Allowance (\$)
25 to 29	9	1	5,375	0	n/a
30 to 34	39	0	6,267	0	n/a
35 to 39	72	8	7,504	1	200
40 to 44	89	5	10,708	4	3,407
45 to 49	151	4	13,282	1	1,057
50 to 54	322	15	15,126	7	739
55 to 59	614	39	14,404	46	1,047
60 to 64	968	61	12,595	39	1,584
65 to 69	1,328	48	16,694	151	332
70 to 74	2,101	31	17,277	122	259
75 to 79	3,155	38	17,229	35	186
80 to 84	4,114	39	16,339	9	59
85 to 89	4,044	47	15,661	1	24
90 to 94	2,479	32	15,827	1	9,854
95 to 99	997	16	15,586	0	n/a
100 to 104	176	0	15,843	0	n/a
105+	7	0	11,705	0	n/a
All ages	20,665	384	15,990	417	548

Table 124 Summary of Regular Force - Surviving spouses

	As at 31 March 2022	As at 31 March 2019
Widower average age	72.4	74.3
Widow average age	80.0	79.5
Widower average age at death of member	60.4	62.2
Widow average age at death of member	65.3	64.7
Total annual allowances payable - \$ millions	336.8	318.4

Table 125 Reserve Force - Surviving spouses

Number and average annual allowance as at 31 March 2022

Age	Widow		Widower	
	Number	Allowance (\$)	Number	Allowance (\$)
To 29	0	n/a	0	n/a
30 to 34	4	1,147	1	802
35 to 39	7	2,998	1	1,754
40 to 44	5	2,475	0	n/a
45 to 49	12	2,438	3	1,033
50 to 54	10	1,424	2	821
55 to 59	18	2,412	2	405
60 to 64	31	2,587	6	1,619
65 to 69	19	1,788	4	1,444
70 to 74	19	1,073	3	4,580
75+	8	942	5	1,077
All ages	133	2,007	27	1,582

Table 126 Summary of Reserve Force - Surviving spouses

	Widow as at 31 March 2022	Widow as at 31 March 2019	Widower as at 31 March 2022	Widower as at 31 March 2019
Average age	60.0	56.7	63.3	62.6
Average age at death of member	54.5	52.9	59.2	58.9

Appendix L — Acknowledgements

Superannuation Directorate of the Department of Public Services and Procurement Canada provided all the relevant valuation input data on active members, pensioners and survivors.

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

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