



Office of the Superintendent of  
Financial Institutions Canada

Bureau du surintendant des  
institutions financières Canada

Office of the Chief Actuary

Bureau de l'actuaire en chef

# Actuarial Report

15<sup>th</sup>

on the  
Regular Force  
Death Benefit Account  
as at 31 March 2022

Canada 

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29 September 2023

The Honourable Anita Anand, P.C., M.P.  
President of the Treasury Board  
Ottawa, Canada  
K1A 0R6

Dear Minister:

Pursuant to Section 72 of the *Canadian Forces Superannuation Act*, I am pleased to submit the report on the actuarial review as at 31 March 2022 of the Regular Force Death Benefit Account established under Part II of this Act.

Yours sincerely,

A handwritten signature in black ink that reads "ABillig". The signature is written in a cursive style with a long horizontal stroke extending to the right.

Assia Billig, FCIA, FSA, PhD  
Chief Actuary



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## 1 Highlights of the report

### Main findings for actuarial report on the Regular Force Death Benefit Account as at 31 March 2022

	Regular Force Death Benefit Account
<b>Financial position</b>	<ul style="list-style-type: none"> <li>➤ As at 31 March 2022, the account balance is \$169.6 million, the actuarial liability is \$148.5 million, resulting in an actuarial excess of \$21.1 million.</li> <li>➤ The account balance is projected to reduce each year as the projected contributions and annual interest credits are consistently lower than the projected death benefits for all future plan years.</li> </ul>
<b>Ratio of actuarial excess to annual benefit payments</b>	<ul style="list-style-type: none"> <li>➤ The actuarial excess totalling \$21.1 million is 0.6 times the total amount of death benefits projected for plan year 2023.</li> <li>➤ The actuarial excess is projected to reduce and become a shortfall during plan year 2024.</li> </ul>
<b>Term insurance monthly cost and contribution per \$1000 of coverage for plan year 2023</b>	<ul style="list-style-type: none"> <li>➤ The monthly cost rate projected for plan year 2023 is 14.2 cents per month per \$1,000 of term insurance.</li> <li>➤ Participant contributions are 9.96 cents per \$1,000 of term insurance.</li> <li>➤ Government contributions are equal to one-twelfth of the total amount of term insurance proceeds payable during the year. It is estimated to be 1.2 cents per \$1,000 of term insurance for plan year 2023.</li> </ul>
<b>Paid-up death benefit</b>	<ul style="list-style-type: none"> <li>➤ The legislated contribution rates per \$5,000 of paid-up death benefit for age 65 are \$310 for males and \$291 for females.</li> <li>➤ The estimated single premiums per \$5,000 of paid-up death benefit for age 65 in plan year 2023, are \$2,577 for male officers, \$2,829 for male other rank and \$2,514 for females.</li> </ul>



## 2 Introduction

This actuarial report on the Regular Force Death Benefit (RFDB) Account was made pursuant to Section 72 of the Canadian Forces Superannuation Act (CFSA) which states that “A valuation report on the state of the Regular Force Death Benefit Account shall be prepared ... in accordance with the Public Pensions Reporting Act and as if the supplementary death benefit plan established by this Part were a pension plan established under an Act referred to in subsection 3(1) of that Act”.

This actuarial valuation is as at 31 March 2022 and is in respect of the death benefits and contributions defined by Part II of the CFSA.

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

### 2.1 Purpose of this actuarial report

The purpose of this actuarial valuation is to determine the state of the RFDB Account as well as to assist the President of the Treasury Board in making informed decisions regarding the financing of the government’s death benefit obligation. This is achieved by providing a best-estimate long-term projection of the RFDB Account based on the projected contributions and interest credited to the account and projected death benefits debited from the account.

### 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 cost of the term and paid up-insurances as well as sensitivity of those results to a variations in key assumptions.

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

The various appendices provide a summary of the plan provisions, a description of data, methodology and assumptions employed.

### 3 Valuation basis

This valuation report is based on the supplementary death benefit (SDB) plan provisions enacted by legislation, summarized in Appendix A. There have been no changes to the plan provisions since the last actuarial valuation report.

The financial data on which this valuation is based is the RFDB Account established to track contributions and benefits under the SDB plan provisions. The account data is summarized in Appendix B.

The participant data provided by Public Services and Procurement Canada (PSPC) are summarized in Appendix C.

This valuation was prepared using accepted actuarial practices in Canada, methods and assumptions which are summarized in Appendices D to F.

All actuarial assumptions used in this report are best-estimate assumptions. They are independently reasonable and appropriate in aggregate for the purposes of the valuation at the date of this report.

Actuarial assumptions used in the previous report were revised based on economic trends and demographic experience.

Death benefits are paid out of the Consolidated Revenue Fund of Canada and charged against the RFDB Account. Contributions made by participants and the government are credited to the RFDB Account. Based on the balance of the RFDB Account, interest credits are calculated in such manner and at such rates and credited at such times as the *Canadian Forces Superannuation Regulations* provide.

The following table presents a summary of the ultimate economic assumptions used in this report and a comparison with those used in the previous report.

**Table 1** Ultimate best-estimate economic assumptions

	<u>31 March 2022</u>	<u>31 March 2019</u>
Real increase in average earnings	0.6%	0.7%
Real projected yield on the Regular Force Death Benefit Account	2.0%	2.5%

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
<b>Promotional and seniority rate of increase</b>		
Officer	0.5% to 10.6%	0.5% to 9.5%
Other rank	0.5% to 5.4%	0.5% to 7.3%
<b>Cohort life expectancy at age 65</b>		
Male officer	23.5	23.6
Male other rank	20.8	21.2
Female	24.4	24.6
<b>Average age at retirement</b>		
Regular Force members	52.7	53.7

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

### 4.1 State of Account

The following State of the Account as at 31 March 2022 was prepared using the RFDB Account balance available for benefits described in Appendix B, the data described in Appendix C, the methodology described in Appendix D and the assumptions described in Appendices E and F. The results of the previous valuation are shown for comparison purposes.

**Table 3 State of the Account**  
(\$ millions)

	31 March 2022	31 March 2019
Account balance	169.6	179.5
Liabilities - paid-up death benefit <sup>a</sup>	123.7	119.3
Liabilities - IBNR <sup>b</sup>	5.5	5.4
Liabilities - outstanding payments <sup>c</sup>	<u>19.3</u>	<u>0.0</u>
Total liabilities	148.5	124.7
<b>Actuarial excess</b>	<b>21.1</b>	<b>54.8</b>

- a. The \$5,000 portion of the basic benefit for which monthly contributions are no longer required from either the participant or the government. See Appendix D.6.1.  
 b. Incurred but not reported claims. See Appendix D.6.2.  
 c. Death benefit payments that are still outstanding. See Appendix D.6.3.

### 4.2 Financial position

At 31 March 2022 the actuarial excess totalling \$21.1 million is 0.6 times the total amount of death benefits projected for plan year<sup>1</sup> 2023. By comparison, the actuarial excess as at 31 March 2019 under the previous report was \$54.8 million, which was 1.5 times the amount of death benefits that were projected for plan year 2020.

**Table 4 Financial position**  
(\$ millions)

	31 March 2022	31 March 2019
Actuarial excess (A)	21.1	54.8
Estimated benefits for next plan year (B)	37.3	35.8
Ratio of the actuarial excess over estimated benefits for next plan year (A/B)	<u>0.6</u>	<u>1.5</u>

As shown in Appendix B.5 and explained in section 4.4 below, the projected contributions to the plan are less than the projected death benefits for all future plan years. This projected annual shortfall is greater than the projected annual interest credits to the RFDB Account and accordingly entails a continuously decreasing account balance and actuarial excess. The actuarial excess is therefore projected to become an actuarial shortfall during plan year 2024. The RFDB Account is

<sup>1</sup> Any reference to a given *plan year* in this report should be taken as the 12-month period ending 31 March of the given year.

therefore projected to be reducing significantly each year.

### 4.3 The monthly benefit cost rate

The monthly benefit cost rate is defined as the ratio of the total expected monthly term insurance payments over the total amount of expected monthly term insurance benefit coverage, where coverage is expressed per thousand dollars. In this report, term insurance benefit means the basic benefit less the 10% per year reduction applicable from age 61 and less the \$5,000 paid-up death benefit applicable from age 65. The projected monthly cost for plan year 2023 is 14.2 cents. The projected monthly cost at the last valuation for the same plan year was 14.7 cents.

### 4.4 Legislated contribution rates

The aggregate amount of death benefit payments projected for plan year 2023 is \$37.3 million, which is made up of \$29.6 million in respect of the term insurance and \$7.7 million in respect of the paid-up insurance. In this report, term insurance means the basic coverage (two times salary rounded to next \$250) less the 10% per year reduction applicable from age 61 and less the \$5,000 paid-up insurance applicable from age 65.

#### 4.4.1 Paid-up insurance

For plan year 2023, the estimated single premium at age 65 for each \$5,000 of paid-up insured benefit and the corresponding legislated contribution rates are shown in Table 5 below.

Table 5 Paid-up insurance per \$5,000 of coverage for plan year 2023

	Single premium at age 65 (\$)	Legislated contribution (\$)
Male officer	2,577	310
Male other rank	2,829	310
Female	2,514	291

The legislated contributions are determined on the basis of the original \$500 of paid-up insured benefit and were not readjusted on 5 October 1992 when Part II of the CFSA was amended to increase the paid-up insured benefit from \$500 to \$5,000.

The assumed improvements in longevity cause the projected single premium for the paid-up death benefit to decrease over time. In addition, the projected ultimate yield of 4.0% is higher than the yield of 3.2% projected for plan year 2023. This has the effect of gradually decreasing the projected single premium over the years.

The net effect of longevity improvements and increasing projected yields result in a decrease in the projected single premium at age 65 for each \$5,000 of paid-up insured benefit over time. The projected single premium for plan years 2023 and 2047 are shown in Table 6 below.

**Table 6 Single premium for paid-up insurance per \$5,000 coverage at age 65**

	Plan year 2023 (\$)	Plan year 2047 (\$)
Male officer	2,577	2,259
Male other rank	2,829	2,400
Female	2,514	2,057

#### 4.4.2 Term insurance

The total amount of term insurance proceeds projected to be payable during plan year 2023 is \$29.6 million. Given that the total amount of term insurance projected to be in force for plan year 2023 is \$17,352 million, the benefit cost rate projected for plan year 2023 is 14.2 cents per month per \$1,000 of term insurance.

Non-elective participants and elective participants in receipt of an immediate annuity are required to contribute monthly 20 cents per \$1,000 of salary or 9.96<sup>2</sup> cents per \$1,000 of term insurance. As a minimum, the government contribution credited monthly to the RFDB Account is equal to one-twelfth of the total amount of term insurance proceeds payable during the month. Table 7 presents the monthly contribution and the cost rates for plan year 2023. It shows that contributions are 3.04 cents less than the monthly cost.

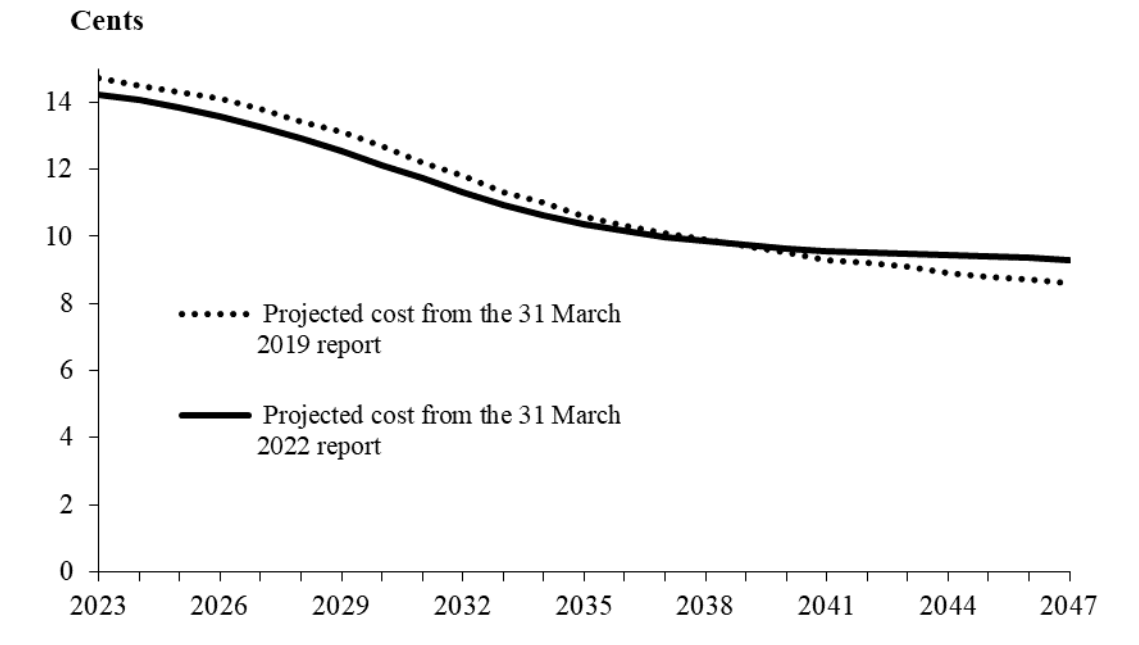
**Table 7 Monthly cost and contribution per \$1,000 of coverage for plan Year 2023 (cents)**

Contribution			Total cost
<u>Participant</u>	<u>Government</u>	<u>Total</u>	
9.96	1.20	11.16	14.20

As shown in Figure 1, the monthly cost per \$1,000 of term insurance is projected at 14.2 cents in plan year 2023. Thereafter the monthly cost is projected to decrease gradually to reach 9.3 cents by plan year 2047. In comparison, the combined contribution rate in 2047 is projected to be 10.74 cents (i.e. 9.96 cents for participants plus 0.78 cents for the government).

<sup>2</sup> If it were not for the rounding to the next lower multiple of \$250 of salary involved in the computation of contributions and the rounding to the next higher multiple of \$250 involved in the computation of the amount of death benefit, the legislated contribution rate would be 10 cents (i.e., 20 cents divided by two) instead of 9.96 cents.

**Figure 1** Projected Monthly Cost  
(Cents per \$1,000 of term insurance)



The following table illustrates the projected monthly costs per \$1,000 of term insurance for selected plan years and by participant type.

Participants	2023	2026	2032	2037	2042	2047
Non-elective	6.5	6.2	5.8	5.5	5.3	5.1
Elective	28.9	28.8	25.4	22.2	21.0	20.7
All	14.2	13.6	11.3	10.0	9.5	9.3

For non-elective and elective participants, the monthly cost projected for plan year 2047 is respectively 78% and 72% of the monthly cost estimated for plan year 2023. For all plan participants in aggregate, the monthly cost projected for plan year 2047 is 65% of the monthly cost projected for plan year 2023.

This results mainly from the following two factors:

- There is a reduction in cost due to the assumed lower mortality for plan year 2047 in accordance with the longevity improvement factors shown in Table 36 applied to the current mortality rates shown in Table 33.
- There is a reduction in cost due to higher proportion of female participants for plan year 2047 compared to plan year 2023.

- a) For non-elective, this is due to female participants having lower mortality rates than male.
- b) The proportion of female non-elective participants is higher than the proportion of female elective participants for plan year 2023. As time goes by, the proportion of female elective participants increases as the female non-elective participants become elective participants.



#### 4.5 Reconciliation of results with the previous report

Table 9 illustrates the impact of the updated assumptions, intervaluation economic experience and population changes since the last valuation report as at 31 March 2019. The projected monthly cost for plan year 2023 fell 0.5 cents from 14.7 cents as at 31 March 2019 to 14.2 cents as at 31 March 2022.

Table 9 Reconciliation of results	
Element of reconciliation	Monthly cost by \$1,000 of term insurance
Previous valuation as at 31 March 2019 for Plan Year 2023	14.7
Change in the valuation system	(0.5)
Retroactive data correction	(0.1)
Demographic changes	0.1
Revision of economic assumptions	0.0
Revision of demographic assumptions	<u>0.0</u>
Valuation as at 31 March 2022	14.2

The revisions of economic and demographic assumptions have minimal impact to the monthly cost for plan year 2023.

#### 4.6 Sensitivity of valuation results to variations in key assumptions

The following supplementary estimates indicate the degree to which the valuation results depend on some of the key assumptions. These resulting differences can also serve as a basis for approximating the effect of other numerical variations in a key assumption to the extent that such effects are indeed linear.

Table 10 Sensitivity of valuation results to variations in key assumptions

	Actuarial liability (\$ million)	Effect	Actuarial excess to benefit payments in plan year (ratio)	Effect
Valuation basis	148.5	n/a	0.6	n/a
Projected interest yields				
+1%	136.3	(12.2)	0.9	0.3
-1%	162.7	14.2	0.2	(0.4)
Longevity improvement				
0%	150.6	2.1	0.5	(0.1)

##### 4.6.1 Projected interest yields

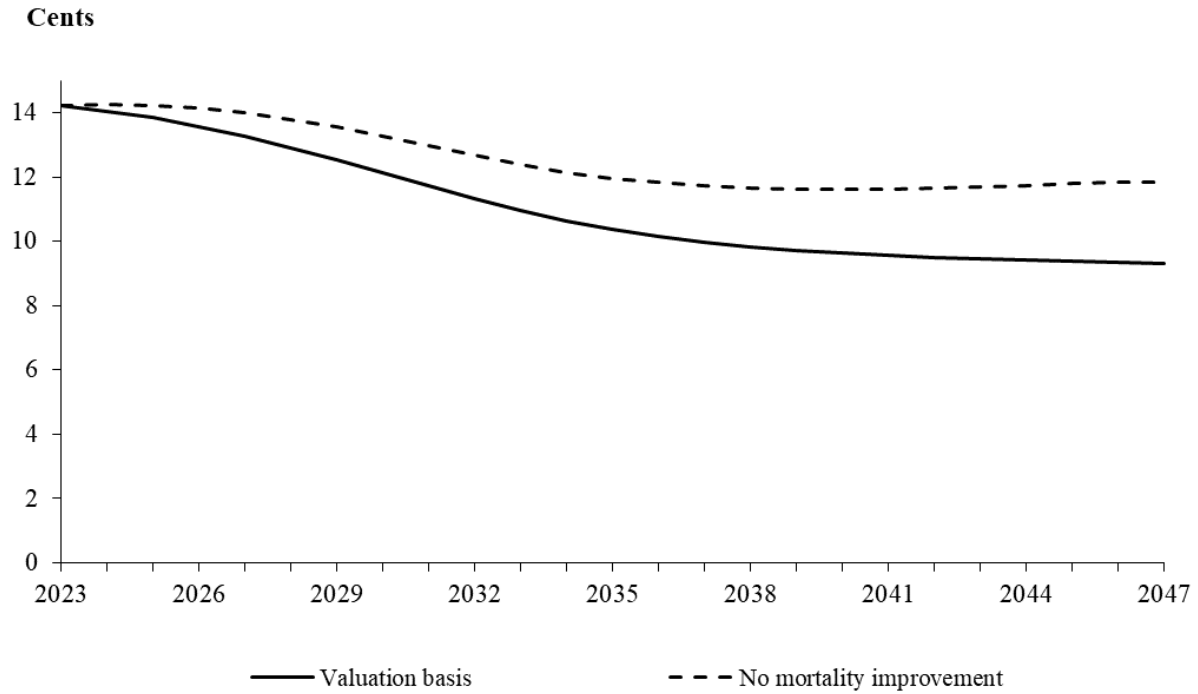
As a measure of sensitivity, an increment of one percentage point in the projected yields would change from 2024 to 2026 the plan year during which the actuarial excess is projected to become an actuarial shortfall. With such additional interest credit, the RFDB Account is projected to reduce significantly but is not expected to become exhausted over the projection period.

Similarly, a decrease of one percentage point in the projected yields would change from 2024 to 2023 the plan year during which the actuarial excess is projected to become an actuarial shortfall, and the RFDB Account is projected to become exhausted by plan year 2048.

### 4.6.2 Mortality

If the assumed improvements in longevity after the 2023 plan year were disregarded, then the monthly benefit cost rate of 9.3 cents projected for 2047 would climb to 11.9 cents, an increase of 27%. The RFDB Account would become exhausted by plan year 2039.

Figure 2 Sensitivity of projected monthly cost to variation in selected mortality assumptions



## 5 Actuarial opinion

In our opinion, considering that this report was prepared pursuant to the *Public Pensions Reporting Act* per Section 72 of the *Canadian Forces Superannuation 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 (Standard of Practice – General Standards) 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.



Yann Bernard, FCIA, FSA  
Senior Actuary



Assia Billig, FCIA, FSA  
Chief Actuary



John Kmetic, FCIA, FSA  
Senior Actuary

Ottawa, Canada

29 September 2023

## Appendix A — Summary of plan provisions

Following is a summary description of the main provisions of the Supplementary Death Benefit (SDB) plan established for the members of the Regular Force under Part II - *Supplementary Death Benefits* of the *Canadian Forces Superannuation Act* (CFSA). This plan supplements benefits payable under the pension plan by providing a lump-sum benefit upon the death of a plan participant.

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

### A.1 Plan participants

#### A.1.1 Non-elective participants

The term *non-elective participant* means a member of the Regular Force, or a member of the Reserve Force who is, with the approval of the Chief of the Defence Staff, on full-time service in a position in a Regular Force establishment or as a supernumerary to a Regular Force establishment.

#### A.1.2 Elective participants

The term *elective participant* means all previously non-elective participants who have ceased to be employed in the Canadian Forces by reason of retirement or disability. A retired member entitled to an immediate annuity, 3A disability annuity (i.e. on medical grounds, being disabled and unfit to perform any duties), or 3B disability annuity (i.e. on medical grounds, being disabled and unfit to perform his own duties in his present trade or employment, and not otherwise advantageously employable under existing service policy) may opt to continue their coverage under the SDB plan. Such right is limited to members who, at the time they cease to be employed in the Canadian Forces, have completed at least five years of continuous service in the Canadian Forces or five years of membership in the SDB plan.

Elective participants entitled to a deferred annuity under the CFSA upon cessation of employment may elect to continue their coverage in the SDB plan; otherwise their membership and coverage are discontinued. This election must be made within the 13-month period running from one year before to the 30th day following cessation of employment. The basic benefit is extended for 30 days after the date of cessation whether or not a participant exercises the right of election for continuous coverage.

An elective participant who becomes a participant in the SDB plan established under Part II of the *Public Service Superannuation Act* (PSSA) automatically ceases to be a participant in the SDB plan established under the CFSA. Any such person, who subsequently ceases to be a participant in the SDB plan under the PSSA, without entitlement to an immediate annuity under the PSSA, is deemed thereupon to regain the status of elective participant in the SDB plan established under the CFSA.

**A.2 RFDB Account balance**

The plan is financed through the RFDB Account, which forms part of the Accounts of Canada. The RFDB Account is credited with all contributions made by the participants and the government, and debited with all benefit payments as they become due. The RFDB Account is also credited with interest earnings based on interest rates applying to the Superannuation Accounts.

**A.3 Contributions****A.3.1 Non-elective participants, and elective participants in receipt of an immediate annuity**

For non-elective participants as well as elective participants in receipt of an immediate annuity (disability or retirement) under Part I of the CFSA or the *Defence Services Pension Continuation Act*, the legislated contribution rate is 5 cents per month for each \$250 of salary (for this purpose the salary is in practice rounded to the next lower multiple of \$250 if not already equal to such a multiple). When these participants attain age 65, their contribution is reduced by 50 cents per month in recognition of the fact that \$5,000 of basic benefit becomes paid-up (by the government) for the remaining lifetime of the participant.

**A.3.2 Elective participants entitled to a deferred annuity**

For elective participants entitled to a deferred annuity, the contribution rate is set by regulation and varies in accordance with the attained age of the participant, and the corresponding contributions become chargeable on the 30th day immediately following cessation of employment. The contribution rates for selected ages are shown in the following table:

**Table 11 Contribution per \$2,000 of death benefit**

Age	Annual (\$)	Monthly (\$)
25	9.70	0.82
30	11.42	0.97
35	13.58	1.15
40	16.29	1.39
45	19.72	1.67
50	24.11	2.05
55	29.80	2.53
60	37.65	3.20

**A.3.3 Government**

The government credits monthly to the RFDB Account an amount equal to one-twelfth of the total amount of term insurance death benefits paid in the month.

When a participant, other than one entitled to a deferred annuity, reaches age 65, the government credits to the RFDB Account a single premium for the \$5,000 paid-up insured benefit in respect of which contributions are no longer required from the participant.

The legislated amount of single premium for each such \$5,000 paid-up insured benefit is shown in the following table and corresponds to one-tenth of \$5,000 times the single premium rate for each

dollar of death benefit, computed on the basis of the Life Tables, Canada, 1950-1952 and interest at 4% per annum.

**Table 12** Legislated single premium per \$5,000 of paid-up benefit

Age	Male (\$)	Female (\$)
65	310	291
66	316	298
67	323	306
68	329	313
69	336	320

Under the statutes, if for whatever reason the RFDB Account were to become exhausted, the Government would then credit special contributions to the RFDB Account in an amount at least equal to the basic benefits then due but not paid by reason of such shortfall.

#### **A.4 Amount of basic benefit**

Subject to the applicable reductions described below, the lump-sum benefit payable upon the death of a participant is equal to twice the participant's current salary, the result being rounded to the next higher multiple of \$250 if not already equal to such a multiple. For this purpose, the current salary of an elective participant is defined as the annual rate of pay at the time of cessation of employment in the Canadian Forces.

The amount of basic benefit described above is reduced by 10% per year starting at age 61 until it would normally vanish at age 70. However, the amount of basic benefit cannot at any time be reduced below the paid-up benefit value of \$5,000 subject to the following exceptions:

- For those elective participants who had, upon cessation of employment prior to 5 October 1992, made an election to reduce their basic benefit to \$500 and further had made a second election prior to 5 October 1993, to keep their basic benefit at \$500, the paid-up benefit is \$500 instead of \$5,000. Such election is irrevocable. The plan administrator has advised OSFI that all members who have opted to reduce their paid-up coverage to \$500 will nonetheless be receiving a minimum death benefit of \$5,000 upon death.
- For elective participants entitled to a deferred annuity, there is no coverage past age 70.

Upon ceasing to be employed in the Canadian Forces, elective participants in receipt of an immediate annuity under Part I of the CFSA or the *Defence Services Pension Continuation Act* may opt to reduce their amount of basic benefit to \$5,000.

## Appendix B — RFDB Account balance available for benefits

### B.1 Regular Force Death Benefit Account

The plan is entirely financed through the RFDB Account, which forms part of the Accounts of Canada. The Account records the transactions for the plan, meaning that no formal debt instrument has been issued to the RFDB Account by the government in recognition of the amounts therein. The RFDB Account is:

- credited with all contributions made by participants and the government;
- credited with interest earnings every three months on the basis of the actual average yield for the same period on the combined Superannuation Accounts of the Public Service, Canadian Forces and Royal Canadian Mounted Police pension plans. These accounts generate interest earnings as though net cash flows were invested quarterly in 20-year Government of Canada bonds issued at prescribed interest rates and held to maturity; and
- debited with annual benefit payments when they become due.

Table 13 shows the reconciliation of the balance of the RFDB Account from the last valuation date to the current valuation date. Since the last valuation, the RFDB Account balance has decreased by \$9.9 million. As at 31 March 2022, the Account balance is reported at \$169.6 million. The net reduction in the Account balance is due to actual death benefit payments exceeding the total of contributions and interest earnings over the intervaluation period.

Table 13 Regular Force Death Benefit Account

	2020	2021	2022	2020 -2022
Opening balance	179.5	172.2	170.9	179.5
Income				
Employee contributions	19.1	20.0	20.0	59.1
Employer contributions				
Term insurance	2.3	2.0	2.0	6.3
Paid-up insurance	0.0	1.5	0.7	2.2
Interest earnings	<u>6.7</u>	<u>5.9</u>	<u>5.6</u>	<u>18.2</u>
Subtotal	28.1	29.4	28.3	85.8
Expenditure				
Benefits claims	35.4	30.7	29.6	95.7
Closing balance	172.2	170.9	169.6	169.6



## B.2 Rates of interest

As per the *Canadian Forces Superannuation Regulations*, the following effective rates of interest on the RFDB Account by plan year were calculated using the foregoing entries.

**Table 14 Rates of interest**

Plan year	Interest
2020	3.88%
2021	3.50%
2022	3.34%

## B.3 Sources of financial data

The Account entries shown previously were taken from the Public Accounts of Canada.

#### B.4 Account and liabilities projection

The following table shows a projection of the RFDB Account and liabilities over 25 years commencing 1 April 2022.

**Table 15 State of the Account at the end of plan year**  
 (\$ million)

Plan year	Account	Liabilities <sup>b</sup>	Actuarial excess	Ratio of projected actuarial excess at the end of the plan year to annual benefit payments projected for the following plan year
2022	<b>169.6<sup>a</sup></b>	148.5	21.1	0.6
2023	161.5	152.1	9.4	0.2
2024	153.0	155.5	(2.5)	-
2025	144.5	159.1	(14.6)	-
2026	135.9	162.9	(27.0)	-
2027	127.6	167.8	(40.2)	-
2028	119.5	172.4	(52.9)	-
2029	111.7	176.3	(64.6)	-
2030	104.3	179.2	(74.9)	-
2031	97.2	180.5	(83.3)	-
2032	90.6	180.9	(90.3)	-
2033	84.6	181.4	(96.8)	-
2034	79.2	181.4	(102.2)	-
2035	74.1	180.9	(106.8)	-
2036	69.4	180.4	(111.0)	-
2037	64.9	179.7	(114.8)	-
2038	60.7	178.4	(117.7)	-
2039	56.8	176.7	(119.9)	-
2040	53.0	175.1	(122.1)	-
2041	49.5	173.7	(124.2)	-
2042	46.1	172.7	(126.6)	-
2043	42.8	171.8	(129.0)	-
2044	39.5	171.0	(131.5)	-
2045	36.3	170.2	(133.9)	-
2046	33.1	169.3	(136.2)	-
2047	30.0	168.4	(138.4)	-

a. Bold figures denote actual experience.

b. Death benefit payments that are still outstanding are added to the liabilities in each plan year.

## B.5 Income and expenditure projection

The following table shows a projection of the income and expenditure which served as the basis of the projection of the RFDB Account over 25 years commencing with plan year 2023.

Table 16 Income and expenditure projection

Plan year	Contributions			Benefit Payments			Interest credits	Net credits	
	Participants	Government		Term	Paid-up	Total			
		Term	Paid-up						Total
2023	20.7	2.5	0.8	24.0	29.6	7.7	37.3	5.2	(8.1)
2024	21.2	2.5	0.8	24.5	29.8	7.8	37.6	4.8	(8.3)
2025	21.5	2.5	0.9	24.9	29.9	7.9	37.8	4.4	(8.5)
2026	21.9	2.5	0.9	25.3	29.9	8.0	37.9	4.0	(8.6)
2027	22.3	2.5	1.0	25.8	29.7	8.1	37.8	3.8	(8.2)
2028	22.7	2.5	1.0	26.2	29.5	8.2	37.7	3.4	(8.1)
2029	23.2	2.4	1.0	26.6	29.1	8.3	37.4	3.1	(7.7)
2030	23.6	2.4	0.9	26.9	28.8	8.4	37.2	2.9	(7.4)
2031	24.1	2.4	0.8	27.3	28.3	8.5	36.8	2.6	(6.9)
2032	24.6	2.3	0.7	27.6	27.9	8.6	36.5	2.3	(6.6)
2033	25.1	2.3	0.6	28.0	27.6	8.7	36.3	2.2	(6.1)
2034	25.7	2.3	0.6	28.6	27.4	8.8	36.2	2.1	(5.5)
2035	26.3	2.3	0.6	29.2	27.4	8.8	36.2	2.0	(5.0)
2036	27.0	2.3	0.5	29.8	27.5	8.9	36.4	1.8	(4.8)
2037	27.7	2.3	0.5	30.5	27.8	9.0	36.8	1.8	(4.5)
2038	28.5	2.3	0.5	31.3	28.1	9.1	37.2	1.7	(4.2)
2039	29.3	2.4	0.4	32.1	28.6	9.2	37.8	1.7	(4.0)
2040	30.1	2.4	0.4	32.9	29.1	9.3	38.4	1.7	(3.8)
2041	30.9	2.5	0.5	33.9	29.7	9.4	39.1	1.7	(3.5)
2042	31.7	2.5	0.5	34.7	30.3	9.5	39.8	1.6	(3.5)
2043	32.6	2.6	0.5	35.7	31.0	9.6	40.6	1.6	(3.3)
2044	33.5	2.6	0.5	36.6	31.7	9.7	41.4	1.5	(3.3)
2045	34.4	2.7	0.5	37.6	32.4	9.8	42.2	1.4	(3.2)
2046	35.3	2.8	0.5	38.6	33.1	9.9	43.0	1.3	(3.1)
2047	36.2	2.8	0.5	39.5	33.8	10.1	43.9	1.2	(3.2)

## Appendix C — Participant data

### C.1 Source of participant data

The Department of National Defence (DND) no longer provide data in respect to non-elective and elective participants of the SDB plan. Instead, data were extracted from the master computer files maintained by the Public Services and Procurement Canada (PSPC) which covers the period from 1 April 2009 to 31 March 2022.

Consistency tests were therefore performed to ensure that a status could be established for each member as of 31 March of each year and to ensure consistency between PSPC data and DND data that was used in the previous report. Consistency tests were also performed on all other information required to value member benefits. In some cases, adjustments were made to the raw data, after consulting with the PSPC, based on the omissions and discrepancies identified by the various consistency tests. More details can be found in Appendix the Actuarial Report on the Pension Plans for the Canadian Forces – Regular Force and Reserve Force as at 31 March 2022 published by the Office of the Chief Actuary.

### C.2 Participant data summary

Table 17 to Table 27 show the detailed participant data upon which this valuation is based.

Table 17 Reconciliation of contributors

	Male			Female			Grand total
	Officer	Other rank	Total	Officer	Other rank	Total	
As at 31 March 2019	14,076	43,645	57,721	3,344	7,205	10,549	68,270
Data corrections	(218)	216	(2)	(47)	62	15	13
New contributors							
New entrants	2,150	8,628	10,778	701	1,702	2,403	13,181
Rehired/Cash-out	26	172	198	6	17	23	221
Rehired/Pensioners	<u>40</u>	<u>77</u>	<u>117</u>	<u>2</u>	<u>7</u>	<u>9</u>	<u>126</u>
Subtotal	2,216	8,877	11,093	709	1,726	2,435	13,528
Changes of							
Officers/other ranks	<u>667</u>	<u>(667)</u>	<u>-</u>	<u>139</u>	<u>(139)</u>	<u>-</u>	<u>-</u>
Subtotal	667	(667)	-	139	(139)	-	-
Terminations							
Return of contribution	(112)	(767)	(879)	(54)	(144)	(198)	(1,077)
Transfer value	(236)	(1,609)	(1,845)	(46)	(213)	(259)	(2,104)
Pending	(199)	(1,203)	(1,402)	(48)	(163)	(211)	(1,613)
Transfer from reserve force	52	407	459	26	105	131	590
To non-participants	<u>(536)</u>	<u>(2,069)</u>	<u>(2,605)</u>	<u>(113)</u>	<u>(399)</u>	<u>(512)</u>	<u>(3,117)</u>
Subtotal	(1,031)	(5,241)	(6,272)	(235)	(814)	(1,049)	(7,321)
Pensionable terminations							
Disability (3A)	(1)	(4)	(5)	(1)	(2)	(3)	(8)
Disability (3B)	(526)	(3,265)	(3,791)	(194)	(804)	(998)	(4,789)
Other retirement	(1,222)	(2,215)	(3,437)	(168)	(217)	(385)	(3,822)
Deceased	<u>(18)</u>	<u>(97)</u>	<u>(115)</u>	<u>(6)</u>	<u>(12)</u>	<u>(18)</u>	<u>(133)</u>
Subtotal	(1,767)	(5,581)	(7,348)	(369)	(1,035)	(1,404)	(8,752)
As at 31 March 2022	13,943	41,249	55,192	3,541	7,005	10,546	65,738

Table 18 Reconciliation of pensioners

	Male			Female			Grand total
	Officer	Other rank	Total	Officer	Other rank	Total	
<b>Retirement pensioners</b>							
As at 31 March 2019	13,942	39,456	53,398	968	2,782	3,750	57,148
Data corrections	31	(230)	(199)	(10)	(25)	(35)	(234)
New pensioners	992	1,529	2,521	126	127	253	2,774
Rehired/Pensioners	(37)	(33)	(70)	(4)	(2)	(6)	(76)
Deceased	(962)	(3,303)	(4,265)	(27)	(45)	(72)	(4,337)
To non-participants	<u>(344)</u>	<u>(766)</u>	<u>(1,110)</u>	<u>(41)</u>	<u>(69)</u>	<u>(110)</u>	<u>(1,220)</u>
As at 31 March 2022	13,622	36,653	50,275	1,012	2,768	3,780	54,055
<b>Disability pensioners (3A)</b>							
As at 31 March 2019	39	343	382	13	55	68	450
Data corrections	4	(9)	(5)	-	4	4	(1)
New pensioners	2	5	7	1	1	2	9
Rehired/Pensioners	-	-	-	-	-	-	-
Deceased	(7)	(60)	(67)	(1)	(1)	(2)	(69)
To non-participants	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
As at 31 March 2022	38	279	317	13	59	72	389
<b>Disability pensioners (3B)</b>							
As at 31 March 2019	1,770	15,270	17,040	453	2,750	3,203	20,243
Data corrections	17	119	136	1	31	32	168
New pensioners	488	3,207	3,695	180	739	919	4,614
Rehired/Pensioners	-	-	-	-	-	-	-
Deceased	(41)	(449)	(490)	(4)	(32)	(36)	(526)
To non-participants	<u>(84)</u>	<u>(405)</u>	<u>(489)</u>	<u>(22)</u>	<u>(89)</u>	<u>(111)</u>	<u>(600)</u>
As at 31 March 2022	2,150	17,742	19,892	608	3,399	4,007	23,899

**Table 19 Non-elective officers**  
As at 31 March 2022

Age <sup>a</sup>	Number			Basic benefit (\$thousands)		
	Male	Female	Total	Male	Female	Grand total
15 to 19	362	152	514	22,227	9,145	31,373
20 to 24	1,409	375	1,784	139,560	36,965	176,525
25 to 29	2,015	541	2,556	344,275	95,085	439,360
30 to 34	2,375	670	3,045	503,374	143,706	647,080
35 to 39	2,308	662	2,970	546,471	158,319	704,791
40 to 44	1,975	520	2,495	517,156	133,552	650,708
45 to 49	1,570	321	1,891	440,480	86,636	527,116
50 to 54	1,218	211	1,429	353,965	60,397	414,362
55 to 59	642	87	729	186,416	26,995	213,411
60 to 64	<u>69</u>	<u>2</u>	<u>71</u>	<u>19,534</u>	<u>594</u>	<u>20,128</u>
<b>Total</b>	<b>13,943</b>	<b>3,541</b>	<b>17,484</b>	<b>3,073,460</b>	<b>751,393</b>	<b>3,824,852</b>

a. Expressed in completed years calculated at the beginning of the plan year.

**Table 20 Non-elective officers - Summary**

	Average	Male	Female	Total
As at 31 March 2019	Age	37.3	35.6	37.0
	Service	14.2	12.2	13.8
	Basic benefit (\$)	189,864	184,642	188,862
As at 31 March 2022	Age	37.4	35.7	37.0
	Service	14.1	12.0	13.7
	Basic benefit (\$)	220,430	212,198	218,763

**Table 21 Non-elective other ranks**  
As at 31 March 2022

Age <sup>a</sup>	Number			Basic benefit (\$thousands)		
	Male	Female	Total	Male	Female	Grand total
15 to 19	754	87	841	63,368	7,558	70,926
20 to 24	5,694	694	6,388	649,582	79,448	729,031
25 to 29	8,248	1,312	9,560	1,126,028	173,165	1,299,193
30 to 34	8,512	1,423	9,935	1,283,643	201,867	1,485,509
35 to 39	6,974	1,202	8,176	1,123,921	179,737	1,303,658
40 to 44	4,924	1,005	5,929	832,295	159,040	991,335
45 to 49	3,090	631	3,721	544,848	102,997	647,845
50 to 54	2,015	451	2,466	366,623	75,471	442,094
55 to 59	973	185	1,158	173,489	30,676	204,165
60 to 64	64	15	79	10,880	2,447	13,327
65 to 69	<u>1</u>	<u>0</u>	<u>1</u>	<u>6</u>	<u>0</u>	<u>6</u>
<b>Total</b>	<b>41,249</b>	<b>7,005</b>	<b>48,254</b>	<b>6,174,684</b>	<b>1,012,405</b>	<b>7,187,089</b>

a. Expressed in completed years calculated at the beginning of the plan year.

**Table 22 Non-elective other ranks - Summary**

	Average	Male	Female	Total
As at 31 March 2019	Age	34.3	36.0	34.6
	Service	11.2	10.3	11.1
	Basic benefit (\$)	130,406	126,190	129,809
As at 31 March 2022	Age	34.6	36.0	34.8
	Service	11.3	10.2	11.2
	Basic benefit (\$)	149,693	144,526	148,943



**Table 23 Elective disabled (3A) participants**  
As at 31 March 2022

Age <sup>a</sup>	Number			Term and paid-up insurance (\$thousands)		
	Male	Female	Total	Male	Female	Grand total
35 to 39	2	0	2	280	0	280
40 to 44	0	0	0	0	0	0
45 to 49	2	2	4	302	287	589
50 to 54	6	6	12	649	694	1,342
55 to 59	45	15	60	4,659	1,379	6,038
60 to 64	50	21	71	3,376	1,383	4,759
65 to 69	40	14	54	1,200	305	1,505
70 to 74	32	8	40	160	40	200
75 to 79	26	5	31	130	25	155
80 to 84	41	0	41	205	0	205
85 to 89	47	0	47	235	0	235
90 to 94	21	1	22	105	5	110
95 to 99	<u>5</u>	<u>0</u>	<u>5</u>	<u>25</u>	<u>0</u>	<u>25</u>
<b>Total</b>	<b>317</b>	<b>72</b>	<b>389</b>	<b>11,326</b>	<b>4,117</b>	<b>15,443</b>

a. Expressed in completed years calculated at the beginning of the plan year.

**Table 24 Elective disabled (3A) participants - Summary**

	Average	Male	Female	Total
As at 31 March 2019	Age	72.6	61.0	70.8
	Term and paid-up insurance (\$)	35,534	65,885	40,120
As at 31 March 2022	Age	73.1	63.7	71.4
	Term and paid-up insurance (\$)	35,730	57,179	39,700

Table 25 Elective retired and disabled (3B) participants

Age <sup>a</sup>	Number			Term and paid-up insurance (\$thousands)		
	Male	Female	Total	Male	Female	Grand total
25 to 29	11	2	13	1,498	361	1,858
30 to 34	410	61	471	57,861	9,002	66,863
35 to 39	1,263	199	1,462	180,405	29,346	209,751
40 to 44	2,061	474	2,535	319,552	77,652	397,204
45 to 49	3,027	628	3,655	491,114	108,873	599,986
50 to 54	6,288	1,102	7,390	983,072	168,749	1,151,821
55 to 59	11,286	1,817	13,103	1,682,985	258,163	1,941,148
60 to 64	12,735	1,862	14,597	1,339,349	177,645	1,516,993
65 to 69	8,201	956	9,157	289,069	31,978	321,047
70 to 74	7,052	426	7,478	35,260	2,130	37,390
75 to 79	6,678	123	6,801	33,390	615	34,005
80 to 84	5,841	86	5,927	29,205	430	29,635
85 to 89	3,688	30	3,718	18,440	150	18,590
90 to 94	1,320	13	1,333	6,600	65	6,665
95 to 99	274	6	280	1,370	30	1,400
100+	<u>32</u>	<u>2</u>	<u>34</u>	<u>160</u>	<u>10</u>	<u>170</u>
<b>Total</b>	<b>70,167</b>	<b>7,787</b>	<b>77,954</b>	<b>5,469,329</b>	<b>865,197</b>	<b>6,334,526</b>

a. Expressed in completed years calculated at the beginning of the plan year.

Table 26 Elective retired and disabled (3B) participants - Summary

	Average	Male	Female	Total
As at 31 March 2019	Age	65.2	57.1	64.4
	Term and paid-up insurance (\$)	76,753	112,151	79,933
As at 31 March 2022	Age	65.7	58.4	64.9
	Term and paid-up insurance (\$)	77,947	111,108	81,260

Table 27 Elective participants entitled to a deferred annuity<sup>a</sup>

Number	Term insurance benefit (\$thousands)
3	221

a. Due to their negligible effect on costs and liabilities, these participants were not taken into consideration for the purpose of this valuation

## Appendix D — Methodology

### D.1 RFDB Account balance

The RFDB account balance available for benefits of the plan forms part of the Accounts of Canada. The account records the transactions for the plan, meaning that no debt instrument has been issued to the RFDB Account by the government in recognition of the amounts therein. The recorded balance is shown at the book value of the underlying notional bond portfolio described in Appendix A.

The RFDB Account balance corresponds to the cumulative historical excess of contributions and interest credits over past benefit payments. The RFDB Account balance is projected to the end of a given plan year by adding to the RFDB Account balance at the beginning of that plan year the net income (i.e. the excess of contributions and interest credits over benefits) projected as described below for that plan year. Administration expenses are ignored because they are not debited from the RFDB Account.

### D.2 Contributions

#### D.2.1 Participants

Participants' annual contributions are projected for a given plan year by multiplying

- the legislated annual contribution rate of 60 cents per \$250 of salary (equivalent to the monthly rate of 5 cents per \$250 of salary)

by

- the projected participants' rounded salaries for that plan year on an open-group basis, reduced by 10% per year from age 61, if applicable, (the legislation expresses the annual reduction of 10% per year on the total amount of coverage)

less

- \$6.00 annually corresponding to the \$5,000 paid-up coverage after age 65, if applicable (i.e. death benefit coverage of \$5,000 corresponds to an annual salary of \$2,500, hence an annual contribution of 60 cents per \$250 of salary would produce a contribution of \$6.00 annually).

Non-elective participants' salaries are projected for a given plan year using the assumed rates of increase described in Appendix F and by the assumed seniority and promotional salary increases given in Table 29. Elective participants' salaries are frozen at time of retirement or disability and are not subject to further increases.

#### D.2.2 Government

The government's annual contribution is projected for a given plan year as the sum of

- one-twelfth of the amount of term insurance death benefits projected to be paid during that plan year, and
- the legislated single premiums in respect of relevant participants 65 years of age.

### **D.3 Discount rates**

The rates used to calculate the present value of benefits in respect of paid-up death benefit are the same as the yields described and shown in Appendix E.

### **D.4 Interest credits**

Annual interest credits are projected for a given plan year as the product of the yield projected for that plan year (Appendix E) and the projected average RFDB Account balance in that plan year.

### **D.5 Benefit payments**

The total amount of annual benefits (term and paid-up insurance) for a given plan year is projected as the sum of the participant annual benefits in force during that plan year multiplied by the mortality rates applicable to each participant during that plan year. The amount of annual benefit in force depends on the salary projected to time of death. Elective participants' salaries are frozen at time of retirement or disability and are not subject to further increases. Salaries are projected for this purpose using the assumed rates of increase in salaries and the number of participants projected on an open-group basis as described in Appendix F.

### **D.6 Liabilities**

#### **D.6.1 Paid-up reserve**

At the end of a given plan year, the liabilities associated with the individual \$5,000 paid-up death benefit in force correspond to the amount which, together with interest at the projected yields, is sufficient to pay for each individual \$5,000 paid-up death benefit projected payable on the basis of the assumed mortality rates. With the exception of elective participants entitled to a deferred annuity, this valuation assumes that the paid-up benefit of \$5,000 will be paid to all elective participants when it becomes available to them.

#### **D.6.2 IBNR**

On the basis of the plan's experience, the reserve at the end of a given plan year for claims incurred but not reported (IBNR) is set equal to one-sixth of the projected annual death benefits paid on average during the six previous plan years.

#### **D.6.3 Outstanding payments**

Outstanding payments are liabilities related to death reported, but still unpaid at the end of a given plan year. They are determined by taking the difference between 95% of the expected payments and the payments already disbursed for the deaths that occurred over the period of five years preceding the valuation date. The 95% assumption was developed based on the actual percentage of payments made from prior years according to the data provided.

#### **D.6.4 Extension of coverage**

Due to the negligible financial impact of the 30-day extension of the basic benefit upon termination of coverage and to the nature of basic benefit paid on a monthly basis, no explicit liability was calculated in respect of that basic benefit provision.

## Appendix E — Economic assumptions

The following economic assumptions are required for valuation purposes:

### E.1 Increases in average earnings

Average earnings are exclusive of seniority and promotional increases, which are considered under a separate demographic assumption. 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).

The resulting assumed increases in average earnings are shown in Table 28.

### E.2 Projected yields on RFDB Account

These yields are required for the long-term projection of the RFDB Account balance, liabilities and excess or shortfall. The methodology used to determine the projected yields on the Superannuation Account is described in Appendix F of the Report on the Pension Plans for the Canadian Forces- Regular Force and Reserve Force as at 31 March 2022 prepared by Office of the Chief Actuary. The projected 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.

**Table 28 Summary of Economic Assumption**  
(percentage)

<u>Plan year</u>	<u>Economic increase in earnings<sup>a</sup> of non-elective participants</u>	<u>Projected yield</u>
2023	4.8	3.2
2024	3.0	3.1
2025	2.3	3.0
2026	2.7	2.9
2027	2.7	2.9
2028	2.6	2.8
2029	2.6	2.7
2030	2.6	2.7
2031	2.6	2.6
2032	2.6	2.5
2033	2.6	2.6
2034	2.6	2.6
2035	2.6	2.6
2036	2.6	2.6
2037	2.6	2.7
2038	2.6	2.8
2039	2.6	2.9
2040	2.6	3.1
2041	2.6	3.3
2042	2.6	3.5
2043	2.6	3.7
2044	2.6	3.8
2045	2.6	3.8
2046	2.6	3.9
2047	2.6	3.9
2048	2.6	3.9
2049+	2.6	4.0

a. Exclusive of seniority and promotional increases.

## Appendix F — Demographic and other assumptions

### F.1 Demographic assumptions

Except where otherwise noted, all demographic assumptions were determined from the Canadian Forces - Regular Force plan's experience as it was done in the past. Where applicable, assumptions of the previous valuation were updated to reflect the intervaluation experience. All references to age and years of qualifying service in this section are based on rounding the exact age and years of qualifying service to the nearest integer. For detailed descriptions on each assumption, please refer to the Actuarial Report on the Pension Plans for Canadian Forces - Regular Force and Reserve Force as at 31 March 2022.

**Table 29 Sample of assumed seniority and promotional salary increases**  
(Percentage of annual earnings)

<u>Years of qualifying service</u>	<u>Officer</u>	<u>Other rank</u>
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

**Table 30 Sample of assumed withdrawal rates of the Regular Force plan**  
(Per 1,000 individuals)

<u>Years of qualifying service</u>	<u>Officer</u>	<u>Male other rank</u>	<u>Female other rank</u>
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 <sup>a</sup>	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



**Table 31 Sample of assumed rates of retirement for members of the Regular Force Plan**  
(Per 1,000 individuals)

<u>Years of qualifying service</u>	<u>Male officer</u>	<u>Female officer</u>	<u>Male other rank</u>	<u>Female other rank</u>
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

**Table 32 Sample of assumed 3B disability incidence rates (own occupation) for the Regular Force Plan**  
(Per 1,000 individuals)

<u>Age</u>	<u>Male officer</u>	<u>Female officer</u>	<u>Male other rank</u>	<u>Female other rank</u>
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

**Table 33** 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 34** 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 35** 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

**Table 36 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

## F.2 Other assumptions

### F.2.1 New participants

It is assumed that the distribution of new members by age and sex will be the same as that of members with less than one year of service at the valuation date, and that the number of new participants will be such that the total number of participants remains constant over the projection period.

**F.2.2 Non-elective participants choosing to become elective participants at retirement**

The proportion of new retirees choosing to continue their coverage under the SDB plan is assumed to be 80% and is derived from the plan's own recent experience.

**F.2.3 Option to reduce coverage to \$500**

The valuation data indicates that the proportion of elective participants opting to reduce their basic benefit to \$500 is negligible. Accordingly, no elective participants were assumed to make such an option.

**F.2.4 Administrative expenses**

In the projection of the RFDB Account, no assumption was made regarding the expenses incurred for the administration of the plan. These expenses, which are not debited from the RFDB Account, are commingled with all other government charges.

## Appendix G — Acknowledgements

The Public Services and Procurement Canada provided all relevant valuation data on plan participants.

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