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

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

Special Actuarial Report 2025

on the financial position of the Public Service Pension Fund

as at 31 March 2025

Canada

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The Honourable Shafqat Ali, P.C., MP.
President of Treasury Board
Ottawa, Canada
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Dear Minister:

Pursuant to the request made under subsection 44.4 (5) of the *Public Service Superannuation Act*, I am pleased to submit the special actuarial report on the financial position of the Public Service Pension Fund as at 31 March 2025. This actuarial valuation is in respect of pension benefits which are defined by Parts I, III and IV of the *Public Service Superannuation Act* and the *Pension Benefits Division Act*.

Yours sincerely,

Assia Billig

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1 Highlights of the report

Main findings as at 31 March 2025	
	Public Service Pension Fund (Service since 1 April 2000)
Financial Position	➢ The actuarial value of the assets in respect of the Pension Fund is $207,010 million.
	➢ The actuarial liability for service since 1 April 2000 is $162,885 million.
	➢ The actuarial surplus is $44,125 million.
Funded ratio	➢ The funded ratio is 127.1%.
Non-permitted surplus[1]	➢ There is a non-permitted surplus of $3,404 million.

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

2 Introduction

This special actuarial report on the financial position of the Public Service Pension Fund (PSPF) was prepared pursuant to the request made by the President of Treasury Board under subsection 44.4 (5) of the *Public Service Superannuation Act* (PSSA).

This actuarial valuation is as at 31 March 2025 and is in respect of pension benefits defined by Parts I, III and IV of the PSSA and the *Pension Benefits Division Act* (PBDA). A special report on the financial position of the PSPF was also prepared as at 31 March 2024.

These special reports will not change the scheduled review dates of the statutory triennial actuarial reviews conducted in accordance with section 6 of the *Public Pensions Reporting Act* (PPRA). The most recent statutory triennial actuarial review was prepared as at 31 March 2023 and the next one is scheduled as at 31 March 2026.

2.1 Purpose of actuarial report

The purposes of this actuarial valuation are to:

- Monitor whether a non-permitted surplus exists within the PSPF as at 31 March 2025;
- Present the financial position of the PSPF as at 31 March 2025; and
- Perform a short-term deterministic projection of the PSPF.

This special actuarial report is intended solely for the above purposes. It was prepared to meet those specific objectives and may not be suitable for any other purposes prior to obtaining approval from the Office of the Chief Actuary (OCA).

For any questions regarding the proper use of this document please contact the OCA.

2.2 Scope of the report

This special report is based on membership data and actuarial assumptions from the statutory valuation as at 31 March 2023, as well as revised assumptions as at 31 March 2025 described in the appendices of this report. This special report does not include a cost certificate, and it does not include the financial position, nor a deterministic projection of the Superannuation Account, and the Retirement Compensation Arrangement No.1 and No.2 Accounts.

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

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

3 Valuation basis

3.1 Valuation inputs

This report is based on pension benefit provisions enacted by the legislation and the membership data, summarized in Appendix A and Appendix D of the 20th Actuarial Report on the Pension Plan for the Public Service of Canada as at 31 March 2023 (20th actuarial report). The actuarial liability as at 31 March 2025 is projected from the 20th actuarial report using the method described in Appendix B of this report.

This valuation is based on PSPF invested assets that the government has earmarked for the payment of benefits for service since 1 April 2000.

The pension assets are summarized in Appendix A of this report.

3.2 Subsequent events

On 9 July 2025, the Government of Canada has launched a Comprehensive Expenditure Review (CER). Since the details are not yet available, we have not reflected any potential impact from the CER in this report.

The Canadian and global economies are going through a period of heightened uncertainty, due in part to escalating trade tensions, environmental risks, and geopolitical conflicts. The future impacts of these issues and risks on this report are still uncertain and evolving, and they have not been recognized as subsequent events.

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

4 Projected valuation results

The projected valuation was prepared using accepted actuarial practices, methods and assumptions summarized in Appendices B to E.

4.1 PSSA – Financial position

Beginning on 1 April 2000, member and government contributions to the Public Sector Pension Plan (PSPP) are credited to the PSPF. The total amount of contributions net of benefits paid and administrative expenses is transferred to the Public Sector Pension Investment Board (PSP Investments) and invested in the financial markets.

This section presents the financial positions for the PSPF as at 31 March 2025. The results of the special actuarial report on the financial position of the PSPF as of 31 March 2024 are also shown for comparison.

Table 1 Balance sheet of the PSPF
(Service since 1 April 2000) (in $ millions)

Components of financial position	2025-03-31	2024-03-31
Assets		
Market value of assets	219,466	193,981
Actuarial smoothing adjustment[a]	(12,802)	(7,993)
Present value of prior service contributions	346	407
Total actuarial value of assets	207,010	186,395
Total actuarial liability	162,885	147,562
Actuarial surplus/(deficit)	44,125	38,833

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

As at 31 March 2025, the PSPF has a surplus of $44,125 million and the funded ratio is 127.1%. As such, no special payments are required and there is a non-permitted surplus[2], as defined by the subsection 44.4 (5) of the PSSA, of $3,404 million. Appendix F presents a deterministic projection of the PSPF through plan year[3] 2035.

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

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

4.2 Reconciliation of the changes in financial position

Table 2 shows the reconciliation of the changes in the financial position of the PSPF. Explanations of the items largely responsible for the changes follow the table. Positive numbers represent improvements to the financial position whereas negative numbers represent deteriorations.

Table 2 Reconciliation of financial position of the PSPF for plan year 2025
(in $ millions)

Components of reconciliation of the financial position	Actuarial surplus/(deficit)
Financial position as at 31 March 2024	38,833
Recognized investment gains or (losses) as at 31 March 2024	7,993
Revised financial position as at 31 March 2024	46,826
Expected interest on revised financial position	2,856
Net experience gains and (losses)	13,234
Revision of actuarial assumptions	(4,046)
Unrecognized investment (gains) or losses as at 31 March 2025	(12,802)
Surplus transfer	(1,943)
Financial position as at 31 March 2025	44,125

4.2.1 Experience gains and (losses)

Since the previous special actuarial report on the financial position of the PSPF as of 31 March 2024, the experience gains and losses increased the surplus of the PSPF by $13,234 million. The main experience gain and loss items are shown in the following table followed by explanatory notes (a) and (b). Positive numbers represent improvements to the financial position whereas negative numbers represent deteriorations.

Table 3 Experience gains and losses for plan year 2025
($ millions)

Components of experience gains and (losses)	PSPF
Investment earnings (a)	12,746
Expected/actual disbursements	13
Contributions (b)	475
Experience gains and (losses)	13,234

Table 3 explanatory notes:

a. The return realized on the PSPF for plan year 2025 was 12.6% versus the expected return 6.1%. Consequently, the Pension Fund experienced an investment gain, before applying the adjusted market value method, increasing the surplus by $12,746 million for plan year 2025.

b. Contributions were higher than the projected cost by $475 million in plan year 2025.

   The contribution rates applicable to plan year 2025 were determined partially based on the 19th Actuarial Report on the Pension Plan for the Public Service of Canada as at 31 March 2020 (19th actuarial report) and the 20th actuarial report. The projected cost for plan year 2025 is based on the 20th actuarial report. Differences in data and assumptions between the 19th actuarial report and

the 20th actuarial report result in contribution amounts exceeding the projected cost.
The actuarial liability reported in the 20th actuarial report reflected salary increases that were known, but not processed as at 31 March 2023. Contributions made in plan year 2025 on retroactive salaries paid in plan year 2025 relative to salaries due in plan year 2024 or earlier are part of the contributions and not the projected cost.

4.2.2 Revision of actuarial assumptions

Actuarial assumptions were revised based on economic and demographic information as described in Appendix C, and trends as described in Appendix D and Appendix E. These revisions have decreased the Pension Fund surplus by $4,046 million. The impact of these revisions is shown in table 4 with the most significant items discussed thereafter. Positive numbers represent improvements to the financial position whereas negative numbers represent deteriorations.

Table 4 Impact of the revision of actuarial assumptions on the financial position
($ millions)

Actuarial assumptions	PSPF
Assumptions for plan years 2024 and 2025	
Economic salary increases	(818)
YMPE and MPE increases	110
Pension indexation	127
Population growth	(30)
Economic assumptions (for plan years 2026 and thereafter)	
Rate of return	(2,283)
Increases in pensionable earnings	487
Pension indexation	(65)
Change in YMPE and MPE	(60)
Transfer value rates	47
Demographic assumptions (for plan years 2026 and thereafter)	
Mortality improvement rates	(1,561)
Net impact of revision	(4,046)

For plan years 2024 and 2025, updates were made to several assumptions used in the 20th actuarial report to reflect the following emerging experience:

- The economic salary increases were higher than anticipated;
- The YMPE and MPE increase on 1 January 2025 was 4.1% versus the expected increase of 2.9%;
- The pension benefit indexation rate on 1 January 2025 was 2.7% versus the expected indexation of 2.9%; and
- The population growth was greater than anticipated.

The above assumptions are used to project the data from the 20th actuarial report to the valuation date of this report. Details of the changes in projection assumptions are described in Appendix C.

The following revisions were made to the economic and demographic assumptions as at 31 March 2025 from the 20th actuarial report:

- the nominal rates of return for plan years 2027 to 2034 inclusively were reduced to 6.0%

compared to an average of 6.2% in the 20th actuarial report, as a result, the liability weighted single rate of return was decreased by 0.08%;

- the increase in pensionable earning assumption for plan year 2026 was reduced to reflect new collective agreements; and
- the mortality improvement rates were increased to reflect recently published studies.

Details of the changes in economic and demographic assumptions are presented in Appendix D and E respectively.

4.3 Current service cost as a percentage of expected pensionable payroll

The current service cost for plan year 2026 and reconciliation with the 2026 current service cost from the 20th actuarial report is shown below.

Table 5 Reconciliation current service cost (as a percentage of pensionable payroll)	
Current service cost for plan year 2026 from the 20th actuarial report	18.44
Changes in assumptions for plan years 2024 and 2025	(0.04)
Changes in demographic assumptions for plan years 2026 and thereafter	0.23
Changes in economic assumptions for plan years 2026 and thereafter	0.16
Current service cost for plan year 2026	18.79

5 Actuarial opinion

In our opinion, considering that this report was prepared pursuant to the request made by the President of Treasury Board under subsection 44.4 (5) of the *Public Service 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 (General Standards and Practice – Practice-Specific Standards for Pension Plans) published by the Canadian Institute of Actuaries.

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

Assia Billig

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Mathieu Desy, FCIA, FSA

Ottawa, Canada
10 October 2025

Appendix A Assets and rates of return

A.1 Assets balance

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

A.2 Public Service Pension Fund

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

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

Table 6 Reconciliation of balance in the PSPF
(in $ millions)

Plan year	2025
Opening balance as at 1 April of the previous year	193,981
Investment earnings	24,605
Employer contributions	3,714
Member contributions	3,798
Transfers received	118
Actuarial liability adjustments	0
Income subtotal	32,235
Annuities	4,399
Pension divisions	35
Return of contributions	40
Pension transfer value payments	169
Transfers to other pension plans	38
Minimum benefits	32
Administrative expenses	94
Expenditures subtotal	4,807
Surplus Transfer	1,943
Closing balance as at 31 March of the plan year 2025	219,466

A.3 Sources of asset data

PSPF entries shown in section A.2 above were taken from pension assets reconciliation provided by the Treasury Board of Canada Secretariat and the financial statements of PSP Investments.

Appendix B Valuation methodology

B.1 Projected liability

Actuarial liability as at 31 March 2025 is projected based on the actuarial liability as at 31 March 2023 using the economic and demographic assumptions specified in Appendices D, E and F.

With the exception of prior service contributions recognized in the present value of prior service contributions as at 31 March 2023, prior service contributions made in plan years 2024 and 2025 were added to the projected liability as at 31 March 2025.

The contributions made on retroactive salaries paid were not added to the projected liability.

B.2 Plan assets

For valuation purposes, an adjusted market value method is used to determine the actuarial value of assets in respect of the PSPF. The method is unchanged from the 20th actuarial report.

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

The only other PSPF–related asset consists of the discounted value of future member and government contributions in respect of prior service elections[4]. The discounted value of future member and government contributions was calculated using the assumed rates of return on the PSPF.

The actuarial value of the assets, determined as at 31 March 2025, is $207,010 million. The calculation to determine this value is shown at table 7.

[4] As described in Appendix A.2.2.2 Elected prior service of the 20th actuarial report.

Table 7 Actuarial value of PSPF assets
($ millions)

Plan year	2021	2022	2023	2024	2025	Total
Actual net investment return (A)	22,988	16,384	7,444	13,003	24,605	
Expected investment return (B)	5,241	8,424	8,804	10,408	11,859	
Investment gains (losses) (C = A-B)	17,747	7,960	(1,360)	2,595	12,746	
Unrecognized percentage (D)	0%	20%	40%	60%	80%	
Unrecognized investment gains (losses) (CxD)	0	1,592	(544)	1,557	10,197	12,802
Market value as at 31 March 2025						219,466
Plus						
Actuarial smoothing adjustment, before application of corridor						(12,802)
Actuarial value as at 31 March 2025 (before application of corridor)						206,664
Impact of application of corridor[a]						0
Actuarial value as at 31 March 2025 (after application of corridor)						206,664
Plus						
Present value of prior service contributions						346
Actuarial value as at 31 March 2025						207,010

a. The corridor is 90% to 110% of market value, that is $197,519M to $241,413M.

Appendix C Assumptions for plan years 2024 and 2025

The actuarial liability as at 31 March 2025 presented in this special report is a projection based on the actuarial liability as at 31 March 2023. Assumptions used to project membership data, pensionable earnings and the YMPE and MPE for plan years 2024 and 2025, as outlined in the 20th actuarial report, have been revised based on updated information. This appendix details the revised assumptions. All other assumptions for plan years 2024 and 2025 remain unchanged from those in the 20th actuarial report.

C.1 New contributors

The active membership data as of 31 March 2023 is projected with new contributors that were determined based on the headcount of the active population as at 31 March 2024 and 31 March 2025.

The assumed percentage increase in the number of contributors for each plan year is shown in table 8:

Table 8 Assumed annual increases in number of contributors

Plan year	Percentage
2024	3.8
2025	0.4

C.2 Economic increase in pensionable earnings for plan year 2024 and 2025

The economic salary increases assumptions used for plan year 2024 was revised from 3.5% in the 20th actuarial report to 4.4% based on actual increases. The corresponding assumption for plan year 2025 remains unchanged at 2.3%.

C.3 Increase in the Year's Maximum Pensionable Earnings (YMPE) and Maximum Pensionable Earnings (MPE) for plan year 2025

The actual economic increase of 4.1% (2.9% in the 20th actuarial report) was used for plan year 2025 to project YMPE and MPE. It was derived from the actual YMPE and MPE.

The YMPE for calendar year 2025 is $71,300 which increased by 4.1% compared to $68,500 in 2024.

The MPE is equal to $210,200 for calendar year 2025 which is a 4.1% increase compared to $202,000 in 2024.

C.4 Increase in pension amounts for plan year 2025

The pension indexation of 2.7% as at January 1, 2025 was used to project pension amounts for plan year 2025 (2.9% in the 20th actuarial report).

Appendix D Economic assumptions for plan years 2026 and thereafter

As per the Funding Policy, all economic assumptions used in this report are best-estimate assumptions. They reflect our best judgement of the future long-term experience of the plan and do not include margins. Certain assumptions after plan year 2026 from the Appendix F of the 20th actuarial report have been revised based on updated information. This appendix details the revised assumptions.

D.1 Inflation-related assumptions

D.1.1 Level of inflation

Price increases, as measured by changes in the Consumer Price Index (CPI), tend to fluctuate from year to year. In 2021, the Bank of Canada and the Government renewed their commitment to keep inflation between 1% and 3% with a target at the mid-point of 2% until the end of 2026[5]. Based on economic data and forecasts as of January 2025, the assumed rates of increase for the CPI are shown in the following table:

Table 9 Rates of CPI increase
(in percentage)

Plan year	Increase
2026	2.2
2027	2.1
2028 and above	2.0

These rates assume the Bank of Canada remains committed to meeting the mid-range 2% target. The ultimate rate of 2.0% in fiscal year 2028 is unchanged from the assumed ultimate rate in the 20th actuarial report.

D.1.2 Increase in Pension Amounts

The assumption related to increases in pension amounts is required to account for indexation of pensions every January 1st. It is derived by applying the indexation formula described in the 20th actuarial report, which relates to the assumed CPI increases over successive 12-month periods ending on September 30th.

D.2 Employment earnings increases

D.2.1 Increase in the Year's Maximum Pensionable Earnings (YMPE)

Since the benefit payable under the plan when a pensioner attains age 65[6] is calculated based on the YMPE, an assumption for the increase in the YMPE is required. The assumed rate of increase in the YMPE is the sum of the real wage increase and the rate of increase for the CPI.

The real wage increase assumption is developed by considering historical trends as well as the future conditions of the labour markets and the economic growth in Canada. The real wage increase is assumed to be constant at 0.8% (0.9% in the 20th actuarial report). Table 10 shows the rates of increase for the YMPE.

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5 Joint statement of the Government of Canada and the Bank of Canada on the renewal of the monetary policy framework

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

The maximum annual pension accrual is assumed to increase in accordance with the assumed annual increase in the YMPE.

Table 10 Rates of YMPE increase
(in percentage)

Plan year	Increase[a]
2026	3.0
2027	2.9
2028 and above	2.8

a. Assumed to be effective as at 1 January.

D.2.2 Economic increase in pensionable earnings for plan year 2026 and after

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.

The economic salary increase assumption for plan year 2026 was revised from 2.6% in the 20th actuarial report to 2.0% based on most recent collective agreements.

The assumed increase in pensionable earnings for plan years 2027 and thereafter remains the same as the 20th actuarial report.

D.2.3 Increase in Maximum Pensionable Earnings (MPE)

It is assumed that the maximum annual pension accrual will rise in line with the projected annual increase in the YMPE. The tax-related maximum pensionable earnings were derived from both the maximum annual pension accrual under a registered defined benefit plan and the YMPE.

D.3 Investment-related assumptions

D.3.1 Rate of return on the Pension Fund

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

D.3.1.1 Investment strategy and asset mix

For the purpose of this report and in line with the PSP Investments' investment policy, the investments have been grouped into four broad asset classes: fixed income securities, credit, equities, and real assets. Table 11 shows the components of each asset class.

Table 11 Components by asset class

Asset Class	Components
Fixed-income	Federal, provincial, emerging market bonds, and inflation-linked bonds
Credit	Private debt, non-investment grade public debt, and quasi-debt instruments
Equities	Public market equities (Canadian and foreign), and private equities
Real assets	Real estate, infrastructure and natural resources

The long-term target mix, also known as the Policy Portfolio, is developed by PSP Investments. The Policy Portfolio is reviewed and approved annually by PSP Investments' Board of Directors. Table 12 shows the Policy Portfolio and the Pension Fund's asset mix as of 31 March 2024.

Table 12 Asset mix
(in percentage)

Asset class	Policy portfolio[a]	As at 31 March 2024
Fixed-income securities	21	24[b]
Credit	11	11[c]
Public market equities	25	21
Private equities	12	15
Real assets	31	29

a. Approved in November 2024. The Policy Portfolio is reviewed annually.
b. Included 3% cash.
c. Included 0.9% in Complementary Portfolio

It is assumed that the initial asset mix will gradually converge towards the Policy Portfolio and that the ultimate asset mix will be reached in plan year 2027. Table 13 shows the convergence towards the long-term target Policy Portfolio.

Table 13 Asset mix by fiscal year
(in percentage)

Plan year	Fixed income securities	Cash	Public equity	Private equity	Real assets	Credit
2026	21	2	23	14	30	10
2027 and above	20	1	25	12	31	11

D.3.1.2 Rates of return by asset class

Rates of return are determined for each asset class in which the Pension Fund assets are invested. Except for fixed income securities and cash, the 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 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 long-term 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.

An overall allowance for rebalancing and diversification has also 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; subsection D.3.1.3 describes how the returns are adjusted for investment expenses.

Cash

The real yield on cash is assumed to be 0.5% for plan year 2026, 0.4% for plan year 2027 and increase to the ultimate yield of 0.5% in plan year 2028.

Fixed income securities

As at 31 March 2024, the fixed-income portfolio has 22% federal bonds, 19% provincial bonds, 23% emerging markets (EM) bonds and 36% inflation-linked bonds[7]. The ultimate mix is 22% federal bonds, 18% provincial bonds, 25% EM bonds and 35% inflation-linked bonds, which is expected to be reached in plan year 2026.

Since the current PSP Investments' Policy Portfolio and its long-term target Policy Portfolio are composed of bonds with different maturities (long, mid and short-term), it is assumed that the fixed income portfolio is composed of universe bonds for the entire projection period. The ultimate universe bonds spread over cash is 83 basis points, while the ultimate long bond spread over cash is 150 basis points.

Credit quality is another important factor affecting bond spreads. Provincial bonds offer the lowest risk premium, reflecting their stability. Inflation-linked bonds show moderate compensation due to their inflation protection nature. Emerging markets debt commands the highest spread, indicating elevated risk, return and currency expectations. Table 14 shows the spreads over Federal long-term bonds among various bond types.

Table 14 Bond spreads over Federal long-term bonds
(in basis points)

Bond type	Initial spread (plan year 2025)	Ultimate spread (plan year 2037)
Universe provincial bonds	46	24
Emerging markets debts	233	169
Inflation-linked bonds	100	(20)

[7] Mostly invested in US Treasury Inflation-Protected Securities (TIPS).

Equity

Real rates of return on equity investments are determined by factors such as income return, expected earnings growth, and long-term risk premiums related to size, geography and private markets. Several elements also contribute to the return on an equity investment including earnings, dividends paid to shareholders, valuation fluctuations, and exchange rate movements for non-Canadian investments.

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

Over time, change in valuation and currency are not expected to have an impact on broad equity market returns. Thus, income return and earnings growth only are used to estimate future returns, with adjustments for small-cap, emerging market, and private market risks.

Developed market equities are expected to yield a 3.1% income return, with 0.9% added from per capita GDP growth assumption, which approximates earnings growth, totaling a real return of 4.0%. Small caps are then projected to add 0.2% due to higher risk, while the emerging markets premium is 1.0%.

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

The expected real return on private equities is expected to be 1.1% higher than the return on developed-market equities, reflecting the additional risk associated with investments in private markets. Developed-market equities are assumed to have a long-term real return of 4.0%, therefore, the projected real rate of return for private equity is 5.1%.

Real assets

The expected real return on real assets is calculated as a weighted average of the returns from real estate, infrastructure, and natural resources. Real estate and infrastructure returns are each composed of an income component of 3.1% and 3.0%, respectively, and a growth component of 0.9%, which is proxied by per capita GDP growth. Due to limited historical data, the real return on natural resources is assumed to equal the average of the real estate and infrastructure returns. As a result, the overall projected real return on real assets is assumed to be 3.9% throughout the projection period.

Credit

The expected real rate of return on credit investments is calculated as the weighted average of returns from U.S. and European investment-grade bonds (18%) and high-yield bonds (82%). The return assumptions for investment-grade bonds and high-yield bonds are 130 and 254 basis points respectively above the yield on Canadian federal universe bonds. Based on these assumptions, the assumed real return on credit investments is estimated at 3.6% throughout the projection period.

Summary of real rate of return by asset class

Table 15 summarizes the assumed real rates of return by asset class throughout the projection period, prior to reduction for investment expenses.

Table 15 Real rate of return by asset class
(in percentage)

Plan year	Fixed-income securities	Public equity	Private equity	Credit	Real assets	Cash
2026	1.9	4.3	5.1	3.6	3.9	0.5
2027	2.1	4.3	5.1	3.6	3.9	0.4
2028	2.2	4.3	5.1	3.6	3.9	0.5
2029	2.2	4.3	5.1	3.6	3.9	0.5
2030	2.2	4.3	5.1	3.6	3.9	0.5
2031	2.2	4.3	5.1	3.6	3.9	0.5
2032	2.2	4.3	5.1	3.6	3.9	0.5
2033	2.2	4.3	5.1	3.6	3.9	0.5
2034	2.2	4.3	5.1	3.6	3.9	0.5
2035	2.3	4.3	5.1	3.6	3.9	0.5
2036	2.3	4.3	5.1	3.6	3.9	0.5
2037 and above	2.2	4.3	5.1	3.6	3.9	0.5

D.3.1.3 Investment expenses

Over the three plan years ending 31 March 2024, PSP Investments' operating and asset management expenses averaged 0.7% of average net assets. It is assumed that, going forward, investment expenses will continue to average 0.7% of average net assets. The majority of these expenses have been incurred through active management decisions.

The objective of active management is to generate returns in excess of those from the Policy Portfolio, net of additional expenses. Therefore, the additional returns from a successful active management program should at least offset the costs incurred to pursue it. For the purpose of this report and in accordance with guidance from the Canadian Institute of Actuaries, it is assumed that additional returns generated by active management will equal the additional expenses incurred. These expenses are assumed to be the difference between total investment expenses of 0.7% and the assumed expenses of 0.2% that would be incurred under a passive management approach.

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

D.3.1.4 Overall rate of return on assets of the Pension Fund

The best-estimate ultimate rate of return on total assets is derived from the weighted average of the assumed rates of return across asset classes. This rate of return is further adjusted upward to reflect additional returns from active management, as well as allowance for rebalancing and diversification. It is then reduced by both active and passive investment expenses to arrive at the net expected return.

Table 16 shows how the ultimate nominal and real rates of return are developed.

Table 16 Overall rate of return on assets of the Pension Fund
(in percentage)

	Nominal	Real
Weighted average rate of return	5.7	3.7
Additional returns due to active management	0.5	0.5
Allowance for rebalancing and diversification	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

Table 17 shows the resulting nominal and real rates of return for each projection year.

Table 17 Rates of return on assets in respect of the Pension Fund
(in percentage)

Plan year	Nominal	Real
2026	5.9	3.7
2027	6.0	3.9
2028 and above	6.0	4.0

It is assumed that the ultimate real rate of return on investments will reach 4.0% in 2028, net of all investment expenses. The ultimate of 4.0% was reached in 2034 in the 20th actuarial report. The real rate of return on assets reflects both the assumed asset mix as well as the assumed real rate of return for each asset category. The nominal return is the sum of the inflation rate and the real return.

Using the variable nominal rates of return on assets in the previous table is equivalent to using a unique flat nominal discount rate of 6.0% for the purpose of calculating the liability at 31 March 2025.

D.3.1.5 Administrative expenses

The administrative expense assumptions are the same as those from the 20th actuarial report.

D.3.2 Summary of economic assumptions

Table 18 summarizes the economic assumptions used in this report.

Table 18 Economic assumptions
(in percentage)

Plan year	CPI increase[a]	Pension indexation[b]	YMPE increase[b]	Pensionable earnings increase[c]	MPE increase[d]	Projected return on Fund
2026	2.2	2.3	3.0	2.0	3.0	5.9
2027	2.1	2.1	2.9	2.6	2.9	6.0
2028	2.0	2.0	2.8	2.5	2.8	6.0
2029 and above	2.0	2.0	2.8	2.5	2.8	6.0

a. Assumed to be effective during Plan Year.
b. Assumed to be effective as at 1 January.
c. Assumed to be effective as at 1 April. Exclusive of seniority and promotional increases.
d. Calendar year 2025 Maximum Pensionable Earnings is $210,200.

Appendix E Demographic assumptions for plan years 2026 and thereafter

Except for the assumption on the number of new contributors and the mortality improvement rate, the demographic assumptions used in this valuation for years after plan year 2026 are those from Appendix G of the 20th actuarial report. This appendix outlines the revised assumptions.

E.1 New contributors

The active membership data as of 31 March 2023 is projected with new contributors that were determined based on the headcount of the active population provided as at 31 March 2024 and 31 March 2025. The assumed percentage increase in the number of contributors for each plan year starting on plan year 2026 is shown in table 19.

Table 19 Assumed annual increases in number of contributors

Plan year	Percentage
2026 to 2028	0.0
2029	0.4
2030 and above	0.5

E.2 Mortality improvement rates

Mortality rates as of 31 March 2023 are assumed to be the same as 20th actuarial report. Future mortality rates are reduced using the same methodology as that of the 20th actuarial report. The ultimate mortality improvement rates were determined considering expert judgment, historical long-term trends, potential future drivers and consideration from other benchmarks such as the MI-CAN-2024 published by the Canadian Institute of Actuaries. Table 20 shows the sample of assumed mortality improvement rates.

Table 20 Sample of assumed mortality improvement rates
(applicable at the beginning of the plan year)

	Initial and ultimate plan year mortality improvement rates (%)			
	Male		Female	
Age	Plan year 2026	Plan year 2040 and thereafter	Plan year 2026	Plan year 2040 and thereafter
30	0.39	1.00	0.28	1.00
40	0.67	1.00	0.85	1.00
50	1.34	1.00	1.27	1.00
60	1.72	1.00	1.53	1.00
70	1.64	1.00	1.28	1.00
80	1.50	1.00	1.06	1.00
90	1.36	0.76	1.28	0.76
100	0.51	0.33	0.62	0.33
110 and above	0.00	0.00	0.00	0.00

Appendix F Deterministic projection of the funded status

F.1 Public Service Pension Fund projection

The following projection is a deterministic forecast of the baseline scenario used in Appendix L.2 of the 20th actuarial report. It was performed using the membership data and methodology described in Appendices of the 20th actuarial report as well as assumptions and asset data previously described. The projection shows the expected evolution of the financial position of the PSPF if all assumptions are realized. Emerging experience that differs from the corresponding assumptions will result in gains or (losses) to be revealed in subsequent valuation reports.

For this forecast it was assumed that:

- The funding status is continuously reassessed;
- Deficits are covered by additional government contributions; and
- Legislation under section 44.4 (1) of the PSSA is applied in case of non-permitted surplus (surplus in excess of 25% of liabilities). The pause in government contribution:
  - is based on whole months starting on 1 December 2025;
  - is applied until the non-permitted surplus in the fiscal year is extinguished;
  - is applied to the contributions of any board, commission or corporation listed in a Schedule to the PSSA; and
  - is not applied to prior service buybacks.

Table 21 shows the projected actuarial value of assets if all assumptions are realized.

Table 21 Actuarial asset value
(in $ millions)

Plan year	Unrecognized investment (gains)/losses[a]	Present value of prior service contributions[a]	Market value of assets[a]	Actuarial value of assets[a]
2026	(12,802)	346	219,466	207,010
2027	(8,064)	289	233,665	225,890
2028	(5,354)	241	246,105	240,992
2029	(2,374)	199	259,060	256,885
2030	88[b]	165	272,367	272,620
2031	0	136	286,904	287,040
2032	0	112	305,602	305,714
2033	0	92	325,200	325,292
2034	0	77	345,490	345,567
2035	0	65	366,685	366,750

a. Shown at the beginning at the plan year
b. Unrecognized loss of plan year 2030 is due to the calculation of the expected investment return for plan year 2026 which is based on the 20th actuarial report to be consistent with the timing of the next statutory valuation report.

Table 22 shows the projected funded ratio and the projection of the components required to calculate the funded ratio. The PSPF's funded ratio is expected to surpass 125% from plan year 2026 to plan year 2030 due to the gradual recognition of the unrecognized investment gains from prior year.

Table 22 Funded status
(in $ millions)

Plan year	Actuarial value of assets[a]	Actuarial liability[a]	Funded ratio[a b]	Prior service contrib.	Gov. contrib. before contrib. pause	Gov. contrib. pause[c]	Employee contrib.	Payments	Investment earnings
2026	207,010	162,885	127.1%	449	3,570	(1,190)[d]	3,548	(5,162)	12,984
2027	225,890	174,969	129.1%	460	3,714	(3,714)[e]	3,692	(5,686)	13,974
2028	240,992	187,712	128.4%	470	3,883	(3,883)[f]	3,861	(6,091)	14,714
2029	256,885	201,160	127.7%	479	4,049	(4,049)[g]	4,024	(6,675)	15,478
2030	272,620	215,162	126.7%	486	4,236	(3,530)[h]	4,210	(7,155)	16,289
2031	287,040	229,901	124.9%	493	4,414	0	4,387	(7,853)	17,257
2032	305,714	245,179	124.7%	499	4,603	0	4,576	(8,452)	18,373
2033	325,292	261,152	124.6%	504	4,773	0	4,744	(9,266)	19,535
2034	345,567	277,598	124.5%	507	4,964	0	4,935	(9,954)	20,743
2035	366,750	294,720	124.4%	510	5,132	0	5,101	(10,868)	21,997

a. Shown at the beginning at the plan year.
b. Ratio of actuarial value of assets over actuarial liability.
c. The contribution pause during the plan year is applied until the non-permitted surplus in the fiscal year is extinguished (i.e. the funded ratio is back to a maximum of 125%).
d. Government contribution assumed to cease on 1 December 2025, this represents 4 whole months of government contribution pause.
e. This represents 12 whole months of government contribution pause.
f. This represents 12 whole months of government contribution pause.
g. This represents 12 whole months of government contribution pause.
h. This represents 10 whole months of government contribution pause.