ECKLER

Actuarial Report on

WorkSafeBC Pension Plan

as at December 31, 2024

Vancouver, British Columbia
September 22, 2025

ECKLER

Contents

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WorkSafeBC
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Highlights and Actuarial Opinion

We have completed an actuarial valuation of the WorkSafeBC Pension Plan (the "Plan") as at December 31, 2024 and have pleasure in submitting our report thereon. Our report addresses the Plan's experience in the period since December 31, 2021, the date of the last valuation.

Scope of the Valuation

The purpose of the actuarial valuation is to:

1. Report on the financial position of the Basic Account as at December 31, 2024;
2. To determine the contribution requirements for the period from January 1, 2025 until the results of the next valuation are available, for which the effective date must be no later than December 31, 2027; and
3. To provide the actuarial certifications required under the *B.C. Pension Benefits Standards Act* ("*PBSA*") and the federal *Income Tax Act* ("*ITA*").

The intended users of this report are WorkSafeBC, the Pension Committee of the Plan, BC Financial Services Authority (BCFSA) and Canada Revenue Agency (CRA). This report is not intended or necessarily suitable for purposes other than those listed above.

The valuation is concerned primarily with the future Basic non-indexed benefits provided under the Plan (including all indexing granted up to the valuation date). The valuation does not directly consider the liabilities for future indexing as such future indexing is to occur only to the extent it can be adequately financed by amounts available in the Inflation Adjustment Account ("IAA"); the future indexing liabilities have been considered indirectly, by setting liabilities exactly equal to the assets in the IAA.

Changes in Benefits and Assumptions since the Last Valuation

The plan rules are summarized in Appendix A, including a summary of the plan amendments made since the previous valuation. None of the plan amendments made since the previous valuation had a financial impact on these valuation results.

The going concern actuarial assumptions have been revised since the previous valuation. In particular, the discount rate was increased in view of higher long-term expectations of investment returns. The key long-term economic assumptions used include (assumptions for the previous valuation, where different, are in brackets).

	Funding Valuation
Annual Investment Return	5.85% (5.60%)
Annual Salary Increase	3.25%
Annual Indexing	2.50%
PfAD	16.85% (8.80%)

The going concern mortality rate assumptions were updated from Club Vita Canada's 2021 VitaCurves to Club Vita Canada's 2024 VitaCurves, both projected generationally with improvement scale CPM-B. This produced a small increase in the going concern liabilities and a small decrease in the current service cost. A reserve of $35 million in the liabilities and 0.3% of salaries in current service cost were added for the Funding Valuation as a margin for uncertainty in the assumption for future improvements in longevity. The hypothetical wind-up/solvency economic assumptions were revised to reflect market conditions as at the valuation date.

The assumptions are described in detail in Appendix E.

Summary of Results

The results as at December 31, 2024 for the Basic Account are summarized below.

($,000's)	Going concern	Hypothetical Wind-up/Solvency
Assets (net of wind-up expenses if applicable)	2,622,668	2,666,099
Liabilities (including PfAD if applicable)	2,122,973	1,981,199
Surplus/Deficit	**499,695**	**684,900**
Funded/Solvency Ratio	123.5%	134.6%
Total current service cost (% of active payroll)	17.42%	
Going Concern Special Payments	Nil	
Solvency Special Payments	Nil	

The going concern valuation indicates that the actuarial excess of $529,416,000 that existed at December 31, 2021 has decreased to $499,695,000 at December 31, 2024. The decrease in actuarial excess is the net result of a number of items, the major ones being the increase in the PfAD, salary increases higher than assumed and actual contributions being less than the current service cost, partially offset by investment earnings on a smoothed asset value basis greater than the rates assumed in the last valuation and the change in the discount rate. More detailed analysis of the going concern results and changes is given in Appendix F.

The current valuation indicates that the total current service cost for Basic Account (non-indexed) benefits has decreased from 18.77% to 17.42% (integrated[1]). The decrease in the Basic Account current service cost is the result of a number of factors, the major cause being the increase in the discount rate and changes in the membership profile. These changes are analyzed in detail in Appendix G.

The hypothetical wind-up/solvency valuation indicates that the solvency surplus of $326,396,000 that existed at December 31, 2021 has increased to a solvency surplus of $684,900,000 at December 31, 2024. The primary drivers for the improvement were the investment earnings on a market value basis being greater than the solvency rates prescribed for the last valuation, and the increase in the average prescribed solvency rates at December 31, 2024 compared to those in effect at December 31, 2021. The solvency ratio of the Plan is 134.6% (greater than 100%) and, because of this, commuted values are due in full.

Since there is both a going concern actuarial excess and a solvency surplus, no special funding payments are required.

The current service cost rate for the Basic Account is 17.42% integrated. Assuming that employee contributions continue to be made at the rate of 7% of salaries (integrated), WorkSafeBC's portion would be 10.42% (integrated). As well, as required under the plan rules, the employees and WorkSafeBC each contribute 1% of salaries to the IAA. Based on the payroll rates as at December 31, 2024, the current service costs are summarized below:

Current Service Cost

	Basic Account		IAA		Total
	Rate	$ at December 31, 2024	Rate	$ at December 31, 2024	$
Employees	7.0% integrated	$24,076,000	1.0%	$3,997,000	$28,073,000
WorkSafeBC	10.42% integrated	$37,746,000	1.0%	$3,997,000	$41,743,000
Total	**17.42% integrated**	**$61,822,000**	**2.0%**	**$7,994,000**	**$69,816,000**

The above valuation results recognize only those benefits up to the maximum *ITA* benefit limits. Benefits above these limits are paid under Part 11 of the Plan, via a Supplemental Benefit Account, which is maintained at a zero balance. Since WorkSafeBC may need to recognize a liability for these Part 11 benefits in its financial statements for the Accident Fund, we have recalculated the liabilities and costs, ignoring the *ITA* limits. When this is done, the going concern actuarial excess reduces by $25,973,000 to $473,722,000 and the employer current service cost requirement for basic non-indexed benefits increases by 0.11%, from 10.42% integrated to 10.53% integrated of salaries, assuming employees continue to contribute at 7% integrated.

[1] The term "integrated" refers to the set of two contribution rates that apply to earnings up to and over the YMPE. Both WorkSafeBC and its employees pay contributions at a rate that is 1.5% lower on earnings up to the YMPE compared to the rate on earnings over the YMPE. For employees, 7% integrated means 5.5% of that part of the employee's salary that does not exceed the YMPE, and 7.0% of the employee's salary which is in excess of the YMPE. For the employer, 10.42% integrated means 8.92% of salary up to the YMPE, and 10.42% on the portion of salary in excess of the YMPE.

Summary of Results – Impact of Current Going Concern Actuarial Excess

Due to the going concern actuarial excess and solvency surplus, contributions to the Basic Account may be made at a rate lower than the current service cost rate of 17.42% integrated.

After setting aside a buffer equal to 5% of the Basic Account liability, as required under the *PBSA,* the remaining $393,546,000 of accessible going concern excess (the actuarial excess above the 5% buffer) may be used in part or full to reduce contributions. This amount could provide for a full contribution holiday. Such contribution holiday would not result in a solvency deficiency. Alternatively, WorkSafeBC could elect to retain the accessible going concern excess in the fund.

WorkSafeBC is currently contributing at a rate of 7.00% integrated to the Basic Account. Combined with the employee contributions of 7.00%, this gives current total contributions to the Basic Account of 14.00% integrated.

Further details are given in Appendix I.

The plan is not in an excess surplus position as defined per the ITA. Hence, the maximum contribution rate under the *ITA* that can be paid until the next valuation is the current service cost on an indexed basis with PfAD. Including the IAA contributions, the total indexed current service cost is 26.73% (integrated). Assuming employee contributions remain at 8% (integrated; including IAA contributions), the maximum contribution WorkSafeBC can make is 18.73% (integrated).

More details are provided in Appendix J.

Reliance

We have relied on the asset information as provided in the audited financial statements of the Plan (for fiscal year ends to March 31) and in the audited financial statements of WorkSafeBC as they relate to the Plan for the relevant calendar years. We have also relied on WorkSafeBC and the plan administrator to provide all relevant data, additional asset information and to confirm the pertinent Plan terms.

Further detail with respect to both the results of the valuation and the information and methods used for the valuation is set out in the attached appendices.

Subsequent Events

Since the valuation date, and as of the date of this report, there has been considerable volatility in global investment markets and macroeconomic uncertainty in connection with international trade policies and tariffs. Any impact on the market value of Plan assets and the actuarial assumptions is not reflected in the valuation results and as such, the plan financial position shown in this report may be substantially different if those results were incorporated in our valuation. These effects will be revealed in future valuations.

To the best of our knowledge, there are no other material events subsequent to the valuation date that would have an impact on the results of this valuation, or alter our opinion.

Actuarial Opinion

In our opinion,

a) the membership data on which the valuation is based are sufficient and reliable for purposes of the valuation,

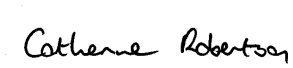
b) the assumptions are appropriate for the purposes of the valuation, and

c) the methods employed in the valuation are appropriate for the purposes of the valuation.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada. For regulatory purposes, the next valuation should be completed no later than as of December 31, 2027.

We would be pleased to discuss the report with you at your convenience.

Respectfully submitted,



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September 22, 2025

[1] The Canadian Institute of Actuaries is the Primary Regulator.

Appendix A: Summary of Plan and Amendments

The previous valuation was based on the provisions of the WorkSafeBC Pension Plan (Plan) as at December 31, 2021. The Plan Rules were amended twice (including four different effective dates) from January 1, 2022, to December 31, 2024, as summarized below.

- Effective retroactive to September 30, 2015, section 8 was amended to maintain the board's monthly contribution remittance schedule to the pension fund, which is compliant with the *Pension Benefits Standards Act* (PBSA).
- Effective retroactive to April 6, 2020, applicable sections were amended to align with the current version of the *Workers Compensation Act* (amended April 6, 2020).
- Effective retroactive to January 1, 2022, section 20 was repealed because the plan's reinstatement provisions expired after December 31, 2021.
- Effective retroactive to March 31, 2024, applicable sections were amended to specify the option for an unlocked lump sum payment to be transferred to a Registered Retirement Savings Plan or Registered Retirement Income Fund, to establish compliance with the PBSA. Other changes provided clarifications and updates to language and terminology for consistency.

The main provisions of the Plan are summarized below. The section references are to the Plan Rules, as at December 31, 2024. WorkSafeBC is referred to in the Plan Rules as the "board".

Employee Eligibility

Section 2 states the Plan applies to all eligible WorkSafeBC employees. Section 3 outlines eligible employees as:

a) a permanent employee of the board in receipt of a salary in payment for service; or

b) any other employee of the board who has completed two years of continuous employment with salary from the board of at least 35% of the year's maximum pensionable earnings (YMPE) in each of two consecutive calendar years and who elect to have the Plan apply to them.

Member Contributions

Section 5 defines the following contributions that are deducted from a member's salary during a calendar year:

a) 5.5% of the member's salary payable that does not exceed the YMPE (paid into the Basic Account);

b) 7.0% of the member's salary payable that exceeds the YMPE (paid into the Basic Account); and

c) 1.0% of the member's entire salary (paid into the Inflation Adjustment Account (IAA)).

Member contributions cease after 35 years of pensionable service have been accrued.

Board Contributions

Section 6 outlines the board is required to contribute such amounts which, based on the recommendation of the actuary, are determined by the board to be necessary to provide for the benefits under the Plan. Actuarial surplus funds may be used to reduce or eliminate contributions that might otherwise be required. All board contributions must also comply with the requirements of the ITA and the PBSA.

Board contribution rates include:

a) 5.5% of that part of the employee's salary that does not exceed the YMPE (paid into the Basic Account);

b) 7.0% of the employee's salary which is in excess of the YMPE (paid into the Basic Account); and

c) 1.0% of the employee's salary (paid into the IAA).

Board contributions also cease in respect of an employee's salary after the employee has accrued 35 years of pensionable service.

Retirement Benefits: Eligibility Conditions for Pension

Section 96 defines earliest retirement age as age 55, normal retirement age as age 65 and latest retirement age as November 30th of the year the member turns age 71.

Section 50 provides that an active member who, on or after September 30, 2015, terminates employment, is on application, entitled to an unreduced pension and bridge benefit calculated under section 54 if the member has reached:

a) age 55 and the sum of the member's age plus years of contributory service is 90, or

b) age 60 with at least 2 years of contributory service, or

c) age 65.

Section 51(a) provides for a reduced pension and bridge benefit calculated under section 55(1) if the terminated member has reached age 55 and completed at least 2 years of contributory service.

Section 51(b) provides for a reduced pension and bridge benefit calculated under section 55(2) if the terminated member has attained age 55 but has not completed 2 years of contributory service.

Calculation of Unreduced Retirement Benefit

Section 54 provides that a member referred to in section 50 is entitled to receive an unreduced pension payable in the form of a single life option guaranteed for 10 years, calculated as follows:

a) 2% of the member’s highest average salary multiplied by the number of years of pensionable service (not exceeding 35 years), less:

0.7% of the lesser of:

1. the member's highest average salary, and
2. 1/12 of the YMPE for the calendar year immediately before the calendar year of the pension effective date,

multiplied by the member's years of pensionable service not exceeding 35 years.

b) plus a bridge benefit, until member reaches age 65 or dies, equal to:

0.7% of the lesser of:

1. the member's highest average salary, and
2. 1/12 of the YMPE for the calendar year immediately before the calendar year of the pension effective date,

multiplied by the member's years of pensionable service not exceeding 35 years.

Sections 97 and 98 define highest average salary as one-twelfth of the average annual salary earned by a member during the 5 years of pensionable service (not necessarily consecutive) in which the salaries were highest (or, if the member has accrued less than 5 years of pensionable service, the total number of years and partial years of pensionable service).

Calculation of Reduced Retirement Benefit

Section 55 provides that a member referred to in section 51 be entitled to receive a reduced pension payable in the form of a single life option guaranteed for 10 years.

A member's pension will be reduced if either:

a) the member is over age 55 but under 60, and age plus contributory service total less than 90, or

b) the member is over age 60 but under 65, with fewer than two years of contributory service

If a member terminates employment after age 50 and has at least 10 years of contributory service, the component of the pension calculated as 2% of the member's highest average salary multiplied by the number of years of pensionable service, is reduced by 3% for each year that:

a) the member's age plus years of contributory service is less than 90, or

b) the member is under age 60,

whichever results in the smaller reduction.

If a member terminates employment prior to age 50 or has less than 10 years of contributory service, the yearly reduction factor is 5% instead of 3%. Pension reductions are pro-rated by month for partial years.

Optional Forms of Pension

Section 56 provides a pension may be granted on the single life option, single life with a guaranteed period of 5, 10 (normal form) or 15 years, joint life and last survivor option, temporary annuity option in combination with one of the aforementioned options, or a combination of these options with the approval of the Plan administrative agent. The amount of any pension granted on a form other than the normal form is calculated on an actuarially equivalent basis.

Where a member has a spouse at retirement, the member is required to elect a 60% joint life and last survivor option, unless the spouse waives this requirement in writing or there is a written agreement or court order made under Part 5 or 6 of the *Family Law Act* that is filed with the Plan administrative agent. This option provides for a reduced amount payable to the member, continuing to the spouse on death of the member at 60% of the initial reduced amount. A spouse is as defined in the PBSA, and includes a common-law or same-sex spouse.

Long-Term Disability (LTD)

Sections 12(5) and 99(2) provide that if a member is receiving a monthly income benefit from a group disability plan, approved for pension purposes, the member and employer do not make contributions. The member is not entitled to a pension under the Plan, but the period for which the member receives such group LTD income benefit is considered pensionable service, with the final pension based on the highest average salary at disablement increased to retirement in accordance with changes in the Consumer Price Index (CPI).

Pre-retirement Death Benefits

Section 69 outlines the following pre-retirement death benefits provisions for active and inactive members who die on or after September 30, 2015, but before being granted a termination or retirement benefit.

a) if there is no surviving spouse or a valid spousal waiver has been filed, the benefit payable to the beneficiary is equal to the commuted value (calculated per section 46) which the member would have been entitled to in respect of the member's pensionable service had the member terminated employment immediately before the date of death.

b) if the member has not attained age 55 at the date of death and is not entitled to a pension, and there is a surviving spouse and a valid spousal waiver has not been filed, the spouse may elect to receive either of the following benefits:

    1. the commuted value which the member would have been entitled to in respect of the member's pensionable service had the member terminated employment immediately before the date of death, or

    2. an immediate pension that is actuarially equivalent to the commuted value and payable as if the member had chosen the joint life and last survivor option.

c) if the member has attained age 55 on the date of death and is entitled to an immediate pension, and there is a surviving spouse and a valid spousal waiver has not been filed, an immediate pension is payable to the spouse which is actuarially equivalent to the commuted value which the member would have been entitled to in respect of the member's

pensionable service had the member terminated employment immediately before the date of death, and payable as if the member had chosen the joint life and last survivor option.

Termination Benefits and Portability

Under sections 42 and 46, a member who terminates employment on or after September 30, 2015, is eligible to receive one of the following:

a) a deferred unreduced or reduced pension calculated (see above "Eligibility conditions for pension" section), or;

b) a commuted value under section 46, subject to the commuted value being payable on a locked-in basis—this option is only available if the member has not reached age 55.

Under certain limited conditions (small pensions, or small commuted values) the PBSA permits the election of a lump-sum payout, regardless of age, and on a non-locked-in basis (section 48).

Section 42(5) provides an inactive member who terminated employment before September 30, 2015, is entitled to receive that retirement benefit or commuted value calculated in accordance with the Plan Rules in force at the date of termination of employment.

Section 100 provides that if an inactive member, whose employment terminated on or after January 1, 1983, is entitled to and applies to receive a deferred pension, their highest average salary is to be increased in each year from the first of the month following the month in which termination of employment occurred to the end of the month immediately preceding the month in which the pension benefit is to be granted, and is based on the percentage increase granted to retirement benefits each January 1 (under section 73) and prorated for the number of complete months.

Section 75(3)(i) provides that the cost of the deferred indexing described above is funded from the IAA.

The Plan has transfer agreements with other public sector pension plans in Canada, including the four main BC public sector pension plans. Under these agreements, members may elect to transfer their service from one plan to another. Transfers under the agreement take into account the benefits under the transferring plans and pro-rate service if the importing plan's reserve requirements are higher than those available from the exporting plan. Members may pay for any shortfall, subject to CRA approval, within certain deadlines.

Cost of Living Benefits (Indexing)

Section 73 sets out how cost of living benefits are to be administered. The Plan provides for increases to retired members on January 1 of each year, with the benefits funded from the IAA. The benefit is based on the total amount of pension being received, including previous indexing increases, less any portion of the pension that is a result of voluntary contributions (which are no longer permitted). The maximum increase is equal to the percentage increase in the CPI over the 12 months ending on September 30 of the previous year.

Section 73 sets out additional requirements about the indexing benefit, including:

a) the same uniform percentage increase will be granted in respect of all pensions eligible for adjustment;

b) the increase is prorated if the pension has not been in payment for at least 12 months;

c) the total capitalized value of all indexing benefits granted on January 1 must not exceed the amount in the IAA on the preceding September 30; and

d) the capitalized value of all indexing benefits granted annually is transferred from the IAA to the Basic Account.

Pension Fund

Section 75 provides that the pension fund is divided into the following three accounts:

a) the Basic Account consisting of all the assets in the fund other than assets in the IAA and the Supplemental Benefits Account;

b) the IAA consisting of:

   1. the 1% active members' contributions made under section 5(1)(c),
   2. the 1% board contributions under section 6,
   3. net investment income earned on the account,
   4. where the most recent actuarial valuation discloses a surplus in the Basic Account, such amount as the board determines be transferred from such surplus, less
   5. amounts transferred to the Basic Account under sections 73 and 88,
   6. contributions made under section 5(1)(c) refunded to members who terminated employment before September 30, 2015, without vesting in accordance with the terms of the Plan in effect on the date the member terminated employment,
   7. amounts determined by the Plan administrative agent in respect of the portion of any commuted value, actuarial reserve value or other form of lump sum transferred out of the pension fund that is attributable to the cost of living adjustment,
   8. amounts transferred to the Basic Account that are equal to the capitalized value of the increase in a member's retirement benefit resulting from any increase in the member's highest average salary under section 100, and
   9. amounts, specified by the board, contributed to the Supplemental Benefits Account.

c) the Supplemental Benefits Account consisting of:

   1. contributions to the pension fund provided for in section 86,
   2. amounts from contributions under section 6 specified by the Plan administrative agent as necessary to cover any annual shortfall between current assets in the account and the cost of providing benefits under section 87 and the cost of providing cost of living benefits under section 88,

3. amounts otherwise contributed under section 6 which are specified by the Plan administrative agent to be required to pay for the cost of administering the account, including the costs to administer any benefits under Part 11, and

4. other amounts that may be specified by the board, less

5. amounts paid in respect of benefits under section 87,

6. amounts paid in respect of cost of living benefits under section 88, and

7. amounts determined by the Plan administrative agent as the cost of administering the account, including the costs to administer any benefits under Part 11.

Income Tax Act (ITA) Limits

The ITA imposes certain limits on the contributions that may be made to, and the benefits that may be paid from, a registered pension plan. However, in total, the contribution requirements from and the benefit promises to Plan members have not been altered under the Plan.

To this end, a Supplemental Benefits Account was created to cover the financing and payment of benefits in excess of those registrable under the ITA. The excess benefits are paid on a current cash basis, by allocating from the regular employer contributions, the amounts necessary to maintain the Supplemental Benefits Account at a zero balance. Effectively, from a Plan member's perspective, it is expected that these procedures will be invisible – the employee contribution and benefit obligations remain unchanged. In completing this valuation, we have calculated the liabilities and costs on two bases, once recognizing the ITA limits and again ignoring those limits. In the Plan summary herein, and elsewhere in this valuation report, our references to contributions/benefits to/from the Basic Account/IAA are inclusive of the allocations to/from the Supplemental Benefits Account; in general, the allocations to/from the Supplemental Benefits Account have not been referenced.

We have also completed supplementary valuations recognizing income tax limits on pensions. Section 49 of the Plan Rules states benefits payable for service accrued after 1991 are limited to pension benefits in accordance with the maximum lifetime retirement benefits under the Income Tax Regulations. The maximum annual pension currently permitted in 2024 (before application of any early retirement reductions, where applicable) is the lesser of:

a) $3,610.00 multiplied by the years of service; and

b) 2% multiplied by the years of service further multiplied by the average of the best 3 years of remuneration paid to the member

The Plan also imposes a 35-year cap on accruals at the above maximum rate.

Plan Termination

Section 103 states for purposes of the Plan termination assumptions needed in calculating the ongoing PBSA minimum funding requirements:

a) all active members are deemed to have terminated employment at the date of such Plan termination,

b) benefits shall be calculated only on service and salaries credited up to the termination date and there shall be no projection of salary increases beyond such date,

c) in the calculation of the Plan's liabilities in respect of benefits to be provided from the Basic Account, the future indexing of benefits shall be ignored, both before and after retirement, and

d) the liability for such future indexing shall be limited to the assets in the IAA.

In the event the Plan is terminated, priorities are set out for any surplus that might emerge. Wage and CPI indexing are first restored before any residual surplus is considered.

Pension Committee

Section 112 prescribes the creation of the Pension Committee. The Pension Committee Terms of Reference provides for the board to appoint three Pension Committee members, comprising:

a) one member who represents WorkSafeBC;

b) one member who represents the employees; and

c) one member nominated jointly by the two members referred to in (a) and (b).

Other Items

a) Section 6(4) provides that expenses incurred in the administration shall be paid from the fund.

b) Section 13 states a maximum of 5 years taken to raise a child may be recognized in establishing eligibility for a pension provided the employee has a record of pensionable service immediately before and after the child-rearing period(s).

c) Section 57 enables the board to adopt a Special Retirement Incentive Plan (SRIP), whereby the age and service conditions, or the early retirement percentage reductions, or both, may be adjusted. Where the board agrees, it must also determine the employees eligible for the SRIP, the period it remains open, the conditions applicable to the incentives, the additional costs to WorkSafeBC, and the timing of these payments to fund the SRIP.

Appendix B: Membership Information

1. Data received from BC Pension Corporation

Data as of December 31, 2024 were prepared by the Pension Corporation and the membership counts received are as follows:

	Pension Corp. Data
Active Members	3,775
Leave of absence	8
Long Term Disability	332
Terminated Vested	609
Inactive	94
Pensioners	2,691
Limited Data	5
Total Membership	**7,514**

2. Data Validation

The Pension Corporation advised us that the data supplied are generally proper, complete and in accordance with specifications, unless otherwise noted. We subjected the data to a number of tests of reasonableness and consistency, including the following:

- A member's (and partner's as applicable) age is within a reasonable range;
- A member's date of birth did not change;
- A member joined the Plan or commenced pension at a reasonable age;
- Accrued service increased by a reasonable amount (e.g. no more than 36 months since the last valuation);
- The salary level and the salary increase from the previous valuation was within a reasonable range;
- Pensions in pay increased by a reasonable amount (e.g. in line with the indexation since the last valuation); and
- We examined the additions to and deletions from each of the data files (i.e. the files for active employees, pensioners and terminated members) since the previous valuation to determine whether all Plan members were accounted for in this valuation, to check for duplicate records and to confirm pension amounts.

There were a number of discrepancies recorded during our examination of the data and we sought clarification of these from the Pension Corporation. Where necessary, we modified the data, our assumptions, or both, to compensate for these discrepancies, as summarized below.

3. Treatment of Member Data

Active Members

The active member data includes a number of individuals who work less than full time. For the purposes of calculating liabilities and normal actuarial costs, we treated all members as if they were full time employees after the valuation date.

The active member data included 60 members for whom we were not provided salary data for the year before the valuation date. For these members, we set their salaries equal to the salary provided in the most recent prior year with a non-zero salary. For 4 members without salary history, we set their salaries equal to the average salaries for active members of the same gender.

In the previous valuation, there were 116 active members who had no salary or service reported for the year ending December 31, 2021, or with a last-contribution-date prior to December 2021. We excluded them from the active member base, and calculated the liability for this group as two and half times their employee contribution with interest balance, by assuming that:

- 50% of this group would receive deferred vested pensions with a liability equal to twice their employee contributions with interest balance, and
- 50% would become active sometime in the future with a liability equal to three times their employee contributions with interest balance

Based on the high percentage of these members who have returned to active membership in recent valuations, we have simplified the approach for this valuation to assume all remain active. The impact of this change is to marginally increase the liabilities (as the value of the accrued pension is marginally higher) but to reduce the normal cost (as the average age of these members is younger than the average of the rest of the active members).

Leaves of Absence

We calculated the liability for the 8 members on a leave of absence on the assumption that these members became active members again immediately after the valuation date.

Members on Long-Term Disability

The liability for the 332 members on long term disability (LTD) was calculated as if these individuals would ultimately collect a pension starting at age 65. The pension was calculated on the basis of service projected to retirement date and the salary on commencing LTD indexed with actual inflation to the valuation date, and assumed inflation thereafter. This is the same approach as used in the previous valuation.

Terminated Vested Members

One of the 609 terminated vested members had an accrued pension equal to zero. We included a liability equal to twice the basic employee contributions with interest balance for this member. We valued the accrued pension for the remaining members. The same approach was used in the previous valuation.

Inactive Members

Of the 94 other inactive members, the bulk of them had less than 2 years of service at termination. We held a liability equal to twice their basic employee contributions with interest balance for this group of members. The same approach was used in the previous valuation.

Members with Limited Data

With respect to the 5 remaining non-retired members with limited data, we held a liability equal to twice their basic employee contributions with interest balance. The same approach was used in the previous valuation.

Pensioners

Of the total pensioner data, there was one member excluded from the valuation because the member died prior to the valuation date with no outstanding guaranteed pensions due.

4. Data Reconciliation

A reconciliation of the data received and membership movements between December 31, 2021 and December 31, 2024 is included below:

Summary of Changes in Membership - December 31, 2021 to December 31, 2024

	Active	LTD	LOA	Deferred Vested	Inactive	Limited Data	Pensioners and Beneficiaries	Total
December 31, 2021	**3,220**	**287**	**0**	**488**	**80**	**10**	**2,363**	**6,448**
Additions:								
- new members	1,113	33	2	106			24	
Changes:								
- vested terminations	(136)	(3)		139				
- retirements	(292)	(47)		(60)			399	
- deaths with beneficiary	(4)	(4)		(1)			9	
- disablement	(113)	113						
- pension split								
- returned to active	46	(42)		(4)				
- to inactive				(21)	21			
- to leave of absence	(6)		6					
- to exception				(1)		1		
Deletions:								
- terminations with CV	(43)	(5)		(37)	(7)	(6)		
- deaths with CV	(4)							
- deaths, no benefit due							(104)	
- guarantee expired								
- reciprocal transfer out	(6)							
December 31, 2024	**3,775**	**332**	**8**	**609**	**94**	**5**	**2,691**	**7,514**

5. Data Summaries

Details regarding the data used in the valuation are set out below.

The data for the 3,783 actives (including the 8 on leave of absence) are summarized below:

Active Employee Data - December 31, 2024

Age	Males			Females		
	Number	Average Service (years)	Average Salary[1]	Number	Average Service (years)	Average Salary[1]
Under 25	9	1.2	$56,748	26	1.2	$57,057
25 - 29	73	2.3	73,747	175	2.5	72,283
30 - 34	169	3.3	91,103	323	3.6	85,641
35 - 39	205	5.4	103,934	349	5.2	95,722
40 - 44	254	7.1	112,955	319	7.5	102,325
45 - 49	183	11.0	115,236	324	10.5	109,590
50 - 54	209	12.7	121,667	301	15.5	112,244
55 - 59	185	15.5	126,096	263	19.8	114,479
60 - 64	127	17.6	137,710	167	18.1	112,486
65 & over	53	20.5	126,733	69	22.2	103,559
Total	**1,467**	**9.9**	**112,705**	**2,316**	**10.2**	**100,680**

Summary Statistics Male and Female Combined	
Total Actives	3,783
Average Age	45.5
Average Service	10.1
Average Salary	$105,343

[1] Actual earnings for the 12 months ended December 31, 2024 for those employed all year and annualized for others.

The table below shows a comparison of the December 31, 2024 active membership with the December 31, 2021 active membership, both based on the active data treatment changes made for this valuation (and as if they had applied for the 2021 valuation), along with the active membership valued as of 2021.

Comparison of Active Employee Data - December 31, 2024 vs December 31, 2021

	Dec. 31, 2021	Dec. 31, 2021 (2024 data treatment)	Dec. 31, 2024	Change 2021 to 2024 (2024 data treatment)
Males				
- Number	1,226	1,245	1,467	+ 17.8%
- Proportion of total	39.5%	38.7%	38.8%	+ 0.1%
- Average age	47.6	47.5	46.4	- 1.1 years
- Average service	11.5	11.4	9.9	- 1.5 years
- Average salary[1]	$100,481	$100,263	$112,705	+ 12.4%
Females				
- Number	1,878	1,975	2,316	+ 17.3%
- Proportion of total	60.5%	61.3%	61.2%	- 0.1%
- Average age	46.4	46.0	44.9	- 1.1 years
- Average service	11.8	11.5	10.2	- 1.3 years
- Average salary[1]	$89,168	$88,708	$100,680	+ 13.5%

The above comparison indicates a 17.5% increase in the covered membership during the inter-valuation period. The average ages and average service have decreased since the previous valuation. These comparisons do not materially change if we compare the active membership valued for the previous valuation against those valued for this valuation.

The percentage increase in the average salary is higher for females (13.5% increase) than males (12.4% increase). However, when we consider only the members who were active in both valuations, the percentage increase in the average salary is even higher at 21.9%. These increases compare with an expected average salary increase assumed at the previous valuation, prior to allowance for seniority increases, of about 10.1% (3 years compounded at 3.25% per year).

[1] Average salary in the 12 months ending on the valuation date.

The data for the 332 employees receiving long-term disability benefits are summarized below.

Members on Long-Term Disability - December 31, 2024

	Number	Average age	Average service	Average salary
Males	69	50.4	14.9	$104,915
Females	263	51.0	16.7	$87,701
Total	**332**	**50.9**	**16.3**	**$91,278**

Summary of Active Employees and Members on Long-Term Disability - December 31, 2024

	Number	Average age	Average service	Average salary	Expected Average Remaining Service Lifetime
Actives & LTD	**4,115**	**45.9**	**10.6**	**$104,208**	**10.3**

The data for the 608 deferred vested members valued based on the vested pension provided are summarized below.

Deferred Vested Member Data - December 31, 2024

	Number	Average age	Average initial annual pension[1]	Average annual offset at age 65	Employee regular contributions with interest
Males	222	46.0	$8,353	$1,520	$5,954,398
Females	386	47.2	$7,399	$1,641	$9,165,442
Total	**608**	**46.7**	**$7,747**	**$1,597**	**$15,119,840**

The data for the 100 other inactive members valued as twice their basic employee contributions with interest balance is summarized below.

Inactive Member Data - December 31, 2024

	Number	Employee regular contributions with interest
Total	**100**	**431,362**

[1] These pensions are calculated based on salaries at date of termination and assumed to commence at the first age at which the employee is entitled to an unreduced pension, i.e. at various age between 60 and 65.

The information with respect to those in receipt of pension benefits as at December 31, 2024 is as follows:

Pensions in Payment to Former Employees - December 31, 2024

Age Group	Number of Pensioners [1]	Annual Pensions ($,000's)[2]				
		Single Life	Joint Life & Survivor	Single Life with Guarantee	Joint with Guarantee	Temporary Life
Males						
Under 59	41	0	587	509	133	501
60 - 64	134	16	2,516	934	1,358	1,744
65 - 69	220	612	4,672	1,188	1,339	-
70 - 74	246	1,298	5,916	950	1,006	-
75 - 79	177	1,877	3,769	410	461	-
80 - 84	102	1,765	1,730	84	-	-
85 - 89	45	707	516	-	-	-
90 & over	28	539	258	-	-	-
Total Males	**993**	**6,814**	**19,964**	**4,075**	**4,297**	**2,245**
Females						
Under 59	73	34	972	798	419	922
60 - 64	231	455	2,575	2,078	1,464	3,065
65 - 69	371	2,508	3,821	3,539	1,304	-
70 - 74	397	5,082	3,792	1,672	822	-
75 - 79	246	4,081	1,775	369	128	-
80 - 84	99	1,870	430	-	-	-
85 - 89	39	481	76	-	-	-
90 & over	26	462	1	-	-	-
Total Females	**1,482**	**14,973**	**13,442**	**8,456**	**4,137**	**3,987**
Basic Total	**2,475**	**21,787**	**33,406**	**12,531**	**8,434**	**6,232**
Supplemental Pensions in addition to the above		**81**	**714**	**175**	**240**	**0**

The average age of the pensioners was 71.8 as of December 31, 2024.

[1] These figures include only those who were formerly contributors to the Plan.

[2] Excluding indexing granted as at January 1, 2025.

Pensions in Payment to Beneficiaries - December 31, 2024

Age Group[1]	Number of Beneficiaries[2]	Annual Pensions ($,000's)[3]	
		Single Life	Single Life with Guarantee
Males			
Under 65	13	154	-
65 - 69	8	171	41
70 - 74	8	99	30
75 - 79	16	214	42
80 & over	11	174	-
Total Males	**56**	**812**	**113**
Females			
Under 65	14	251	12
65 - 69	12	348	42
70 - 74	17	503	-
75 - 79	39	1,036	97
80 - 84	22	664	-
85 - 89	18	425	-
90 & over	25	600	-
Total Females	**147**	**3,827**	**151**
Remaining guarantees	**12**	**-**	**287**
Basic Total	**215**	**4,639**	**551**
Supplemental Pensions in addition to the above	**-**	**61**	**-**

The average age of the 203 beneficiaries in receipt of lifetime pensions was 77.3 as of December 31, 2024.

	Number	Average age[4]	Average annual lifetime pension[4]
Total Pensioners & Beneficiaries	2,690	72.2	30,269

[1] Age nearest birthday at December 31, 2024.

[2] These figures include spouses (or estates) currently receiving benefits where the former contributor is deceased.

[3] Excluding indexing granted as at January 1, 2025.

[4] Averages exclude the 12 members in receipt of a remaining guarantee.

Appendix C: Operation of the Fund

The Fund's financial statements are prepared by the Pension Corporation and based on the market or fair values of assets. The day-to-day investment of the Fund is carried out by the British Columbia Investment Management Corporation (BCI). We have relied upon the financial statements of the fund (as used in the audited financial statements of WorkSafeBC) for purposes of our valuation.

1. Change in Plan Assets

The change in the Basic Account during the last three calendar years to December 31 is shown below.

Year by Year Change in Basic Account Fund Balance from 2021 to 2024

	Basic Account ($,000's)			
	2021	**2022**	**2023**	**2024**
Opening Fund balance	**2,140,438**	**2,333,953**	**2,257,019**	**2,439,327**
Contributions & Income				
Contributions - employees	17,579	18,400	21,304	23,004
Contributions - employer	19,897	20,677	23,319	24,899
Contributions receivable – employer	(2,285)	(1,997)	(1,946)	(70)
Net transfers from other plans	796	2,241	769	1,433
Transfer from IAA	3,804	31,668	54,707	34,288
Investment income, realised and unrealised gains and losses	227,382	(65,474)	175,031	242,203
Benefits & Expenses				
Pensions paid	(66,442)	(73,316)	(81,843)	(87,426)
Termination & death benefits	(2,928)	(2,627)	(2,379)	(2,770)
Administration expenses (expected)	(1,595)	(1,833)	(2,100)	(2,272)
Investment expenses	(2,693)	(4,673)	(4,554)	(5,017)
Closing Fund balance	**2,333,953**	**2,257,019**	**2,439,327**	**2,667,599**

Year by Year Change in Inflation Adjustment Account (IAA) from 2021 to 2024

	Inflation Adjustment Account ($,000's)			
	2021	**2022**	**2023**	**2024**
Opening Fund balance	**431,363**	**476,306**	**433,294**	**414,570**
Contributions & Income				
Contributions - employees	2,935	3,086	3,555	3,829
Contributions - employer	3,271	3,422	3,853	4,101
Contributions receivable – employer	(336)	(296)	(280)	(7)
Net transfers from other plans	(70)	196	183	331
Transfer to Basic Account	(3,804)	(31,668)	(54,707)	(34,288)
Investment income, realised and unrealised gains and losses	46,715	(14,373)	30,794	38,638
Benefits & Expenses				
Pensions paid	0	0	0	0
Termination & death benefits	(3,219)	(2,483)	(1,385)	(1,347)
Administration expenses (expected)	0	0	0	0
Investment expenses	(549)	(896)	(737)	(796)
Closing Fund balance	**476,306**	**433,294**	**414,570**	**425,031**

2. Asset allocation

The actual asset allocations for the Basic Account and IAA at December 31, 2024, as well as the long-term asset mix set out in the Plan's Statement of Investment Policies and Procedures are summarized in the table below.

Asset Class	Actual Assets ($m)	Actual Asset Mix (%)	Long-term Asset Mix (%)
Short Term	72,300	2.4%	2.0%
Government Bonds	722,751	23.4%	18.0%
Corporate Bonds			8.5%
Private Debt	263,637	8.5%	8.5%
Mortgages	146,466	4.7%	5.0%
Total Fixed Income	**1,205,154**	**39.0%**	**42.0%**
Canadian Equities	91,114	2.9%	3.0%
Global Equities	398,418	12.9%	9.0%
Emerging Markets	116,530	3.8%	3.0%
Private Equity	354,194	11.4%	11.0%
Total Equity	**960,256**	**31.0%**	**26.0%**
Real Estate	492,558	15.9%	17.0%
Infrastructure and Renewable Resources	457,989	14.8%	15.0%
Total Real Assets	**950,547**	**30.7%**	**32.0%**
Derivatives	(22,448)	(0.7%)	0.0%
Total Portfolio	**3,093,509**	**100.0%**	**100.0%**
Receivables, prepaid expenses and cash	264		
Account payables and accrued expenses	(1,143)		
Total Market Value	**3,092,630**		

3. Asset Smoothing

The fund's audited financial statements record assets on a market value basis. As in previous valuations, we applied a smoothing technique by adjusting the market values over a five year period. We believe a smoothing approach is appropriate as it would cushion the actuarial valuation results against the dramatic swings in market value that can occur.

To determine the smoothed value of assets, we first determine the actual return on the basis of market values during the year after allowing for the net contributions minus benefits and non-investment expenses. We then determine an assumed return for the year at a rate equal to the valuation discount rate. The difference between the two returns is spread over a five year period, recognizing one-fifth of it in each of the current and four succeeding years. This

approach effectively spreads the difference between (a) the total investment return (including both realized and unrealized capital changes) and (b) a hypothetical return over a five year period. The smoothed value of assets is then restricted to a range of 90% to 110% of market value, if necessary (the same range was applied in the previous valuation).

The application of this approach to the total fund yields the following results:

Determination of Smoothed Value of Assets

($,000's)	2021	2022	2023	2024
1. Market value on January 1	**2,571,801**	**2,810,259**	**2,690,313**	**2,853,897**
2. Net contributions (contributions less benefits and non-investment expenses)	(32,397)	(34,530)	(36,950)	(36,295)
3. Expected interest	144,392	156,408	149,623	158,802
4. = 1 + 2 + 3	2,683,796	2,932,137	2,802,986	2,976,404
5. Market value on December 31	**2,810,259**	**2,690,313**	**2,853,897**	**3,092,630**
6. Excess (shortage) of market over assumed returns = 5 - 4	126,463	(241,824)	50,911	116,226
7. Withheld from current year (T) excess = item 6 of year T x 4/5	101,171	(193,459)	40,729	92,981
8. Withheld from excess in year T-1 = item 6 of year T-1 x 3/5	85,486	75,878	(145,094)	30,547
9. Withheld from excess in year T-2 = item 6 of year T-2 x 2/5	57,177	56,991	50,585	(96,730)
10. Withheld from excess in year T-3 = item 6 of year T-3 x 1/5	(12,897)	28,588	28,495	25,292
11. Total amount withheld (added) = 7 + 8 + 9 + 10	230,937	(32,002)	(25,285)	52,090
12. Smoothed asset value on December 31 = 5 – 11	**2,579,322**	**2,722,315**	**2,879,182**	**3,040,540**

Total Fund Smoothing

December 31	2021	2022	2023	2024
1. Base return	5.65%	5.60%	5.60%	5.60%
Year-end asset values ($,000's)				
2. Market value	2,810,259	2,690,313	2,853,897	3,092,630
3. Smoothed value	2,579,322	2,722,315	2,879,182	3,040,540
4. Ratio of (4) ÷ (3)	91.8%	101.2%	100.9%	98.3%
Annual returns				
5. Market value	10.6%	(3.1%)	7.5%	9.7%
6. Smoothed value	9.9%	6.9%	7.2%	6.9%

The annualized market value rate of return since last valuation is 4.5%.

Using the relationship between the market and adjusted values shown in line 5 above, and applying this relationship to the Basic Account and Inflation Adjustment Account balances, we get:

Basic Account ($,000's)	December 31, 2024
7. Market value	2,667,599
8. Smoothed value	2,622,668
9. Ratio of (9) ÷ (8)	98.3%
Inflation Adjustment Account ($,000's)	
10. Market value	425,031
11. Smoothed value	417,872
12. Ratio of (12) ÷ (11)	98.3%

The figures above indicate that the smoothed asset value is 1.7% lower than the market value as at December 31, 2024. This is a decrease in smoothing cushion relative to the last valuation, when the smoothed asset value was 8.2% lower than the market value. The decrease occurred due to the lower market value returns during the inter-valuation period.

Appendix D: Actuarial Methods

The actuarial methods we have used are described below; these are substantially the same as those used for the previous valuation.

1. Funding Valuation

The going concern valuation assumes that the plan will continue to operate indefinitely, and is used to estimate the funded position of the Plan, and to determine the contributions currently required to be made to the Plan's fund, both to fund the cost of any benefits being earned by members for current service and, in the event there is a funding deficiency, to liquidate the amount of the funding deficiency. Any deficit on the going concern basis must be funded over a period not exceeding 10 years.

We have continued with the approach used in the previous valuation, namely, the Projected Unit Credit Actuarial Cost Method. Under this approach, the actuarial present value of benefits earned for service before the valuation date, including projected future salary increases, is compared with the assets on hand to determine the unfunded actuarial liability or actuarial excess, as the case may be.

With regard to current service costs, the actuarial present values for benefits to be earned for service after the valuation date are calculated for the one year following the valuation date to determine the rate of contribution required to finance currently accruing benefits. This cost will rise as an individual ages and gets closer to retirement. For the group as a whole this step-rate increase in cost is mitigated by the addition of younger new entrants to the plan but, to the extent the group ages, costs can be expected to rise.

The intent of this method is to accumulate assets systematically to provide security for the benefits provided in respect of service that has already been rendered, without further recourse to any other assets; of course, such security is not guaranteed.

2. PBSA Framework for the Funding Valuation of a Defined Benefit Provision

The *PBSA* sets out a framework for the going concern valuation of a Defined Benefit Provision which contains several key elements:

"Provision for Adverse Deviation Percentage" ("PfAD%") is a specific percentage, defined by in the legislation as the greater of 5% or 5 times the long-term bond rate[1]. This percentage is applied to the going concern liability to provide a buffer, or Provision for Adverse Deviation ("PfAD"), against adverse experience. The PfAD% is also applied to the current service cost, unless the plan has Accessible Going Concern Excess (see below).

"Accessible Going Concern Excess" means the amount by which going concern asset value exceeds 105% of the Going Concern Liabilities x (1 + PfAD%)

"Accessible Solvency Excess" means the amount by which the solvency assets value exceeds 105% of the solvency liabilities.

[1] The PfAD% may be lower if the plan has less than 30% invested in non-fixed income.

For this Plan, the funding requirements from the PBSA are:

- Monthly amount equal to 1/120 of the amount, if any, by which the going concern assets is less than the amount determined by the following formula: Going Concern Liabilities x (1 + PfAD%), plus
- Monthly amount equal to 1/60 of the amount by which 85% of the solvency liabilities exceeds the sum of the solvency assets and solvency asset adjustment, plus
- Current service cost, plus
- If there is no Accessible Going Concern Excess additional monthly contributions equal to: PfAD% x current service cost.

If the plan has an Accessible Going Concern Excess, then it is possible under the *PBSA* to consider improvements to accrued benefits, distribution of the excess as provided by the plan text, or the excess may be left in the plan as a further contingency reserve.

3. Hypothetical Wind-up / Solvency Valuation

A hypothetical wind-up/solvency valuation is intended to reflect the status of the Plan as if it had been wound up on the valuation date and the Plan members had been provided with the benefits specified by the Plan and the *PBSA*. The purpose of this valuation is to show the degree of benefit security provided for all of the Plan members' accrued benefits by the current assets of the pension fund. The valuation does not take into consideration the probability of wind-up, which we believe to be very low for this Plan, given the quasi-public sector nature of WorkSafeBC.

Under the PBSA, certain certifications are required with respect to the hypothetical wind-up/solvency position of the Plan. These are needed for a variety of reasons, including: (a) to ensure minimum funding requirements are met, and (b) to determine whether transfers of commuted values in respect of terminating or deceased members can be made in full, immediately, as these may be restricted by the "solvency" position of the Plan.

For this purpose, liabilities must be determined on a "plan termination basis." The Standards of Practice – Practice Specific Standards for Pension Plans issued by the Canadian Institute of Actuaries require the actuary to postulate a scenario upon which a hypothetical wind-up valuation is based. For this purpose, when calculating the wind-up/solvency liabilities, we have assumed the plan has terminated due to the insolvency of the Plan sponsor (although we believe this scenario is very unlikely). Note that the liabilities would be the same even if a different termination scenario was used.

As with the prior valuation, we used the unit credit method. Under this method, the actuarial liabilities consist of the present value of pensions in payment and vested deferred benefits for terminated employees.

The Plan text indicates that for purposes of testing the PBSA solvency rules, benefits are to be calculated as follows:

- all active members are deemed to be terminated and 100% vested;
- benefits are calculated only on the basis of earnings and service frozen at the valuation date;

- future indexing should be ignored, both before and after retirement; and
- the Inflation Adjustment Account continues to be recognized on a defined-contribution basis with liabilities set equal to the assets, as for the going-concern valuation.

4. Indexing Treatment

Indexing supplements on and after January 1, 1984 are on an annual basis and are limited to those amounts that can be appropriately financed by the balances available in the Inflation Adjustment Account. Thus we do not need to allow for future indexing in our calculations, as the costs of this indexing are currently fixed at 1% of salaries to be paid by each of the employees and WorkSafeBC. With respect to indexing supplements granted through January 1, 2024, the present values have been included in the actuarial liabilities for pensions in the course of payment and thus form part of the determination of the recommended contribution.

For members who have terminated employment, we were supplied with deferred pension amounts both including and excluding indexing during the deferred period to date. We understand that transfers from the Inflation Adjustment Account to finance this indexing do not occur until retirement (theoretically, such transfers should be made on an annual basis as the indexing occurs, so as to reduce the inter generational transfer of the costs of such indexing). We have therefore used the deferred pension amounts without indexing so that the Basic Account liability is aligned with the allocation of assets between the Basic and IAA accounts.

The indexing of salaries before retirement in the case of employees on long-term disability is, on the other hand, a charge to the Basic Account rather than to the Inflation Adjustment Account. Accordingly, in valuing the deferred pensions for those members currently on long-term disability, we have made an allowance for this by applying an escalation assumption (at the full underlying inflation assumption) of 2.50% per annum during the deferral period to retirement.

Our valuation of the liabilities deals primarily with the basic non-indexed benefits covered under the Basic Account; the Inflation Adjustment Account is "ignored" on the basis that it is akin to a defined contribution or money-purchase account, used to provide indexing. Where there are sufficient monies in the IAA, full CPI indexing is provided; alternatively, if the monies in the IAA cannot provide full CPI indexing, then the amount of indexing is limited to the monies available. In either case, the mechanics are such that the capitalized value of the indexing granted is transferred from the IAA to the Basic Account, each time indexing is granted.

For disclosure purposes in WorkSafeBC's financial statements, the Inflation Adjustment Account component is treated as if it is a defined contribution plan, with liabilities set equal to the assets, i.e. the Inflation Adjustment Account assets are added to both the Basic assets and liabilities. The net effect of this is neutral on the actuarial excess (unfunded liability) calculated for the Basic Account. Consistent with the 2021 valuation, we included the Inflation Adjustment Account assets with offsetting liabilities exactly equal to these assets.

5. Income Tax Act Maximum Pension Rule

The tax-registered provisions of the pension plan limit the amount of pension as required by the *ITA*, in respect of service after 1991. The maximum annual pension currently permitted is the lesser of:

i. $3,610.00 in 2024 multiplied by the years of service (adjusted as described below); and

ii. 2% multiplied by the years of service further multiplied by the average of the best 3 years of remuneration paid to the member.

While the Plan applies the *ITA* limits only in respect of service after 1991, we have, for ease of calculation, assumed that this limit applies on all service; this assumption does not affect the current service costs, but the accrued liabilities will be slightly understated. The Plan also imposes a 35 year cap on accruals at the above maximum rate, which we have applied.

For an individual in this Plan to be currently affected by the $3,610.00 maximum, the final average salary must be very high; while current salaries are not such as to cause many problems, the salaries projected in the future through application of the assumed salary increase rates outlined above are such that more individuals would be limited. However, under the income tax rules, the flat $3,610.00 limit is automatically indexed each year after 2024 in accordance with increases in the average wage (at the previous valuation the corresponding dollar limit was $3,245.56). Accordingly, we have applied a 3.25% per annum increase to the $3,610.00 limit after 2024.

While the provisions of the Plan limit the normal formula benefits to the *ITA* maxima, the excess benefits are paid under the Part 11 provisions via the Supplemental Benefit Account. Even though no assets are to be accumulated in this account, WorkSafeBC may still need to recognize a liability for these excess benefits in its financial statements for the Accident Fund. Accordingly, we have also calculated the liabilities and costs ignoring the *ITA* limits.

It should also be noted that, in the tax-limited results, we valued the deferred vested pensions in full as provided to us, i.e. we were unable to carve out any "excess" portions. This will slightly overstate the accrued liabilities, but the impact should be minimal when combined with the slight understatement mentioned above resulting from applying the *ITA* limits on all service.

6. Testing of Income Tax Maximum Surplus and Contribution Limits

For purposes of testing the Plan surplus and current service contribution requirements against the maximum permissible *ITA* limits, we also carried out a subsidiary valuation assuming the pensions are fully indexed to inflation. In this scenario, we made the following changes to the regular valuation:

- We combined the assets in the Basic and Inflation Adjustment Accounts;
- We applied an indexing assumption equal to the full assumed underlying inflation rate, i.e. 2.50% per annum, effective January 1, 2025 and annually thereafter both to pensions after retirement and during the pre-retirement period in the case of deferred vested pensions and disability salary accruals, with the exception that we adjusted the January 1, 2025 indexing to pensions in payment as of the valuation date from the assumption of 2.50% to the actual cost of living increase granted of 1.6%; and
- In determining the employer portion of the current service costs, we combined the employee contributions to the IAA with those to the Basic Account, i.e. we assumed a total employee contribution rate of 7% + 1% = 8% (reduced by 1.5% of salaries below the YMPE).

Appendix E: Actuarial Assumptions

The most significant actuarial assumptions are summarized below. The assumptions used for the previous valuation, if different, are shown in brackets. Further details of the assumptions and the underlying rationale are set out in the remainder of this appendix.

	Funding Valuation	Hypothetical Wind-up / Solvency Valuation
Investment Return	5.85% per annum (2021:5.60%)	3.9%/4.5% CV rate and 4.7% annuity purchase rate (2021: 2.3%/3.4% CV rate and 2.85% annuity purchase rate)
CPI Increases	2.50% per annum	Nil
General Salary Increases	3.25% per annum	Nil
Seniority Salary Increases	Annual percentages varying by age and sex	Nil
YMPE increases	3.25% per annum	Nil
Mortality pre-retirement	No allowance	No allowance
Mortality post-retirement		
- Base tables	Club Vita Canada's 2024 VitaCurves excluding Covid experience (2021:Club Vita Canada's 2021 VitaCurves)	CPM2014
- Improvements	CPM-B improvement scale	CPM-B improvement scale
- Reserve for uncertainty in future mortality improvements	$35 million added to liabilities and 0.30% of salaries added to EANC *(2021: no allowance)*	n/a
Withdrawal	Annual percentages varying by age and sex	Nil
Disability	Annual percentages varying by age and sex	Nil
Retirement		
- From active service	Annual percentages varying by age and sex	Age 55 for members younger than 55, immediate for members with age 55 or older
- From LTD	Age 65	
- From vested/inactive status	Age 60 for inactive members at the valuation date; age 55 for members terminating service after the valuation date	Age 60 for members younger than 60, immediate for members with age 60 or older

	Funding Valuation	Hypothetical Wind-up / Solvency Valuation
Active Population	No future growth or decline	Nil
Expenses	0.55% of payroll added to EANC (2021: 0.60%)	$1.5 million wind-up expenses (2021: $1.2 million)
Recognition of Child-Rearing Periods for Pension Eligibility	Contributory service (used for determining pension eligibility but not amount) increased by 2 years for female members	Contributory service (used for determining pension eligibility but not amount) increased by 2 years for female members

Funding Valuation

1. Summary of Interrelationships

The annual investment return and general salary increase assumptions, and their underlying economic interrelationships, are summarized below.

	2021 Valuation	2024 Valuation
1. Investment return	5.60%	5.85%
2. Inflation	2.50%	2.50%
3. Real return rate = 1 - 2	3.10%	3.35%
4. Real salary increase	0.75%	0.75%
5. General salary increase = 2 + 4	3.25%	3.25%

2. Investment Return

We have assumed that the investment return of the fund, net of investment-related expenses, would be at a rate of 5.85% (increased from 5.60% in the previous valuation) per annum compounded annually over the future long term. The *PBSA* requires an explicit PfAD to be added to the going concern liabilities so, as per the previous valuation, this investment return is determined on a best estimate basis.

The discount rate was determined using Eckler's 2025 funding discount rate model. Our model determined expected long term capital market returns, standard deviations and correlations for each major asset class (universe bonds, Canadian equities, global equities, etc.) by using historic returns, current yields and forecasts. We then stochastically generated projected asset class returns for 5,000 paths over 30 years to create expected returns for each asset class. The expected going concern return (before diversification and rebalancing) is the return at the median of each asset class weighted by the Plan's target asset mix.

Further adjustment is made to reflect the diversification and rebalancing effect (the discipline of rebalancing at intervals to the plan's target asset mix provides a mechanism for "selling high and buying low" that is expected to enhance the fund's return over the long term).

The total investment expense allowance of 0.65% was provided by BCI and allows for both active and passive management fees. BCI also provided a split of 0.23% for passive management and 0.42% for active management. For the purpose of establishing the discount rate used in this report, we have assumed that there will be no added-value returns from employing an active management strategy in excess of the associated additional investment management fees.

Based on these key economic expectations over the long term, adjusting for expenses, the going concern discount rate assumption has been developed as follows:

Going Concern Discount Rate

	2021	2024
Expected return, before diversification and rebalancing effect and before allowance for active management	5.55%	5.84%
Diversification and rebalancing effect	0.25%	0.25%
Additional return expected from active management	0.60%	0.42%
Subtotal	**6.40%**	**6.51%**
Provision for investment related expenses (passive management)	(0.17%)	(0.23%)
Provision for investment related expenses (active management)	(0.60%)	(0.42%)
Effect of transition from current strategy over 4 years	(0.02%)	n/a
Rounding	(0.01%)	(0.01%)
Discount return assumption	**5.60%**	**5.85%**

3. Provision for Adverse Deviations (PfAD)

Since the non-fixed income asset allocation is greater than 30%, the PBSA requires that the PfAD is calculated as the greater of 5% or 5 times the long-term bond rate. As at December 31, 2024, the long-term bond rate (CANSIM Series V122544 as published by the Bank of Canada) was 3.37% pa, so the PfAD is 16.85%. This is an increase from the PfAD of 8.8% in the previous valuation, which was based on a long-term bond rate of 1.76% pa.

4. CPI Increases

We have based our assumed CPI inflation rate on our estimate of future inflation considering the Bank of Canada's inflation control target of 1% to 3% per year and the output of Eckler's same stochastic model as was used to determine the discount rate. We have assumed a best estimate for inflation of 2.25% pa. We added a margin for adverse deviations of 0.25%, giving an assumed rate of CPI inflation of 2.50% pa. The same assumptions were used for the 2021 valuation.

5. General Salary Increases

We assumed that the general, or "across the board" rate of future salary increases would be 0.75% above the rate of CPI inflation. This results in a general salary increase assumption of 3.25%. The same assumptions were used for the 2021 valuation.

The 2024 valuation data indicates that average annual earnings increased by about 13.1% from mid-2021 to mid-2024 (i.e. about 4.2% per annum), as compared with an expected increase of about 10.1% (i.e. about 3.25% per annum) on the basis of the assumptions used in the 2021 valuation.

The salary data provided to us were the actual earnings during 2024. We increased the 2024 salaries by half year of salary growth assumption, i.e. 1.625%, and applied the resulting amount as the salary rates on the valuation date. Thereafter, the assumed rates of salary increase are applied at the end of each future year. In the previous valuation, we used the salary data provided for the valuation year without further adjustment as the salary rates on the valuation date, and the assumed rates of salary increase were applied continuously during each future year. This change better reflects the timing of recent salary adjustments. In addition, we used actual historical salaries prior to 2024 for averaging final average earnings in this valuation. In previous valuations, we assumed historic salaries based on the current earnings less assumed salary increases. The change better reflects periods of high salary growth.

Because the assumed rate of salary increase is a long-term assumption, we did not adjust it to reflect any specific future salary increases that are agreed to in the near future. To the extent that the assumed salary increase differs from the actual increases during the coming valuation period, gains or losses will emerge at the next valuation.

6. Seniority Salary Scales

Seniority salary increases are in addition to the general salary increases and are intended to reflect increasing seniority, recognition of merit and promotion. We examined the seniority salary scales based on the earnings history of the active members during the intervaluation period as of December 31, 2024, and compared these with the experience observed and rates used in the previous valuation. Based on these investigations we decided to continue with the previous salary scales.

The annual seniority increases are assumed to reduce with age. Sample seniority increase assumptions at key ages are shown below. The assumptions represent the assumed seniority increase in the next year.

Sample Seniority Salary Rate Increases

	2021 and 2024 valuations	
Age	**Males**	**Females**
25	.037	.029
35	.016	.015
45	.007	.009
55	.003	.004
65	.000	.000

7. YMPE Increase

We also assumed that the YMPE under the Canada Pension Plan would increase at the general salary increase rate of 3.25% per year from its 2024 level of $68,500. In the previous valuation we assumed that the YMPE would increase at the rate of 3.25% per year from its 2021 level of $61,600.

8. Mortality

A key demographic assumption is the longevity of the plan members. For this valuation, Club Vita Canada's 2024 VitaCurves (CV24 VitaCurves) were used, with generational projection using the CPM-B improvement scale. Club Vita prepared two versions of the CV24 VitaCurves, one including all experience and a second adjusted to remove COVID experience that is not expected to repeat. We used the second version.

VitaCurves are baseline mortality rates that vary by member based on their individual longevity characteristics and have been developed using a generalized linear modelling framework. (More details on the methodology can be found in the Canadian Institute of Actuaries member's paper: Key Factors for Explaining Differences in Canadian Pensioner Baseline Mortality.) The CV24 VitaCurves have been calibrated based on Club Vita Canada's longevity dataset for the years 2020 to 2022 and thus an appropriate base year is 2021. Improvements in baseline mortality from 2021 to the calendar year of determination are projected based on each member's year of birth.

Club Vita Canada's longevity dataset is composed of a subset of registered pension plans across Canada, and includes plans covering a range of industries in both the private and public sector. Club Vita Canada's CV24 VitaCurves have been developed based on longevity experience consisting of 2.5 million exposure years and 65 thousand deaths over 2020 to 2022, and vary by the following longevity factors:

- Gender;
- Pensioner type - pensioner or surviving spouse;
- Disability status at retirement for pensioners - disabled or non-disabled pensioner;
- Postal code-based lifestyle/longevity group - five groups for each of males and females;

- Affluence as measured by pension amount or earnings - there are three pension bands for males and females, while there are four earnings bands for males and three for females; and
- Occupation type - currently or formerly employed in a blue or white collar occupation; and
- Pension form at retirement for pensioners - single life or joint life.

Given that the availability of longevity factors varies by plan, and also by members within a plan, the CV24 VitaCurves are calibrated based on different combinations of the factors outlined above, resulting in over 1000 baseline mortality tables. The best VitaCurve is assigned to each individual member based on the longevity factors available for that member.

For pensioners who retired on account of disability, for members currently on long-term disability and for those assumed to become disabled in future, the assumed rates of mortality were based on an aggregate VitaCurve for disabled pensioners, with generational projection using the CPM-B improvement scale.

In the previous valuation, the assumed rates of mortality were based on Club Vita Canada's CV21 VitaCurves, also projected using CPM-B improvement scale.

The Canadian Institute of Actuaries recently published research that suggests a higher long-term rate of improvement than has been included in the past. The research included an updated mortality improvement scale, with a range of ultimate improvement rates. Given this research, and the considerable uncertainty in the future trajectory of mortality rates following the COVID-19 pandemic, we have added a reserve for uncertainty in future mortality improvements of $35 million in the liabilities and 0.30% of salaries in the normal cost on the funding basis and $75 million / 0.70% of salaries on the fully indexed basis. The reserves on other bases have been calculated by pro-rating based on the corresponding liabilities and normal costs, and rounding to the nearest $5 million / 0.05% of pay. This is broadly equivalent to the impact of adopting the new, recently released Canadian mortality improvement scale, within the range of suggested long-term improvements.

For deferred vested pensions, mortality was ignored during the deferral period before retirement. The same assumption was used in the previous valuation.

9. Withdrawal

We examined the rates of withdrawal for reasons other than death, retirement or disability over the period January 1, 2022 to December 31, 2024 and compared this with the experience observed and the rates used for previous valuations. Based on this analysis, we observed lower termination than expected. Given the low credibility and volatility in the experience and the likely impact of volatility due to the pandemic, we have kept the current assumptions unchanged and will continue to monitor trends in the next valuation.

Sample withdrawal rates are shown in the following tables. The withdrawal rates applicable in the first 3 years of service include terminations from disability.

Withdrawal Rates Applicable in the First 3 Years of Service (including terminations from disability)

	2021 and 2024 valuations		
Age at entry	**1st year**	**2nd year**	**3rd year**
Males			
20	.177	.141	.136
30	.091	.086	.089
40	.084	.075	.062
50	.067	.051	.055
Females			
20	.112	.122	.147
30	.106	.122	.127
40	.074	.074	.053
50	.059	.060	.049

Withdrawal Rates Applicable After 3 Years of Service

	2021 and 2024 valuations	
Attained age	**Males**	**Females**
23	.148	.130
33	.052	.076
43	.025	.032
53	.015	.014

The withdrawal rates we have used do not extend past age 54.

10. Retirement

We examined the 2022-2024 retirement experience and compared this with the experience observed in our previous analyses of the retirement rates and with the rates used in the previous valuation. In general, the actual experience shows fewer retirements than were expected on the basis of the rates used in the previous valuation. Given the low credibility and volatility in the experience and the likely impact of volatility due to the pandemic, we have kept the current assumptions unchanged and will continue to monitor trends in the next valuation. The rates used in this and the previous valuations, are as follows:

Rates of Retirement

Age	Service	2021 and 2024 valuation	
		Males	Females
55 - 59	rule of 90	.30	.55
60	10	.24	.30
61	10	.16	.18
62	10	.16	.15
63	10	.21	.18
64	10	.20	.21
65	0	1.00	1.00
55 - 59	at least 10 years, but not rule-of-80	.04	.05
55 - 59	rule-of-80	.09	.09

Even though pensions (unreduced and reduced) are available with less than 10 years of service, we have continued to apply the retirement rates before age 65 only to those with 10 or more years of service, on the assumption that those with fewer than 10 years would not retire until the age 65. Adding an assumption allowing for retirement with less than 10 years based on observed experience would not have a material impact on the results.

11. Disability

The Plan provides for the continued accrual of pension benefits for employees receiving long-term disability benefits. We examined the experience of employees going on long-term disability and observed higher disability rates than expected. Given the low credibility and volatility in the experience and the likely impact of volatility due to the pandemic, we have kept the current assumptions unchanged and will continue to monitor trends in the next valuation. The rates used for this valuation are 210% for males, 170% for females of the respective rates used for the valuation of the Pension Plan for the Public Service of Canada as at December 31, 2021.

We have continued to value the disability cost for active employees as a deferred pension (indexed before retirement) with continued accrual of service, and we have continued to assume that the deferred pensions would commence at age 65.

Sample disability rates are shown in the following table. No direct allowance is made for the possibility of an individual recovering from disability prior to retirement - the rates used have been reduced from the observed disability incidence to implicitly allow for such recoveries.

Sample Disability Rates

Age	2021 and 2024 Valuations	
	Males	Females
25	.0002	.0001
35	.0008	.0015
45	.0030	.0047
55	.0085	.0120

12. Proportions of Contributors Married at Death

Since the pre-retirement death benefit is 100% of the commuted value of the earned pension, the benefit does not differ by single vs. married status, and thus this assumption is not relevant.

13. Expenses

Administration expenses are paid out of the pension fund. These amounts (excluding investment-related expenses) totalled 0.53%, 0.47% and 0.47% of salaries for the three fiscal years to March 31, 2025. Projected expenses provided by the Pension Corporation for the next three years anticipated that the administration expenses will continue at a similar rate. Accordingly, we reduced the expense provision to 0.55% of payroll from the allowance of 0.60% of payroll used in the previous valuation. This provision is added to the current service cost. Based on the projected payroll of $399,686,000, the estimated expenses for 2025 are $2,198,000.

The investment management fees are excluded from our analysis above. They are reflected in the long-term investment return assumption.

14. Recognition of Child-Rearing Periods for Pension Eligibility

We assumed this would only affect female members, and that, on average, it would increase the member's contributory service (which is used for determining pension eligibility) by 2 years; there would, of course, be no increase to the member’s pensionable service (which is used for determining pension amounts). The impact of this would be to reduce the eligibility requirement for unreduced pensions between ages 55 and 59, from a rule-of-90 to a rule-of-88. We assumed that there would be no impact on the eligibility assumptions made for other benefits. The same assumption was made in the previous valuation.

15. Voluntary Contributions

As in the 2021 valuation, this is not a material figure, and we have ignored it in the valuation balance sheet.

Hypothetical Wind-up / Solvency Valuation

We have applied the following actuarial assumptions in determining the hypothetical wind-up/solvency status of the Plan as at December 31, 2024:

- all non terminated members assumed to be terminated and 100% vested in their accrued pensions as at December 31, 2024;
- for those inactive and deferred vested members with incomplete data, we assumed their hypothetical wind-up/solvency liability to be equal to two times the employee regular contributions with interest balance, decreased from four times the employee regular contributions with interest used in the previous valuation to reflect the higher solvency discount rate for this valuation;
- for active and disabled members, liabilities are determined as deferred vested pensions payable at age 55 if the member is now below age 55, or as an immediate pension if the member is now over age 55, subject to the regular 3% or 5% per year early retirement reductions below age 60, as applicable, based on actual average earnings over the last 5 years (or such shorter period of plan membership) and the 2024 YMPE of $68,500;
- for deferred vested members, liabilities are determined as deferred vested pensions payable at age 60 if the member is now below age 60, or as an immediate pension if the member is now over age 60.

The hypothetical wind-up/solvency valuation reflects current transfer value assumptions and market annuity interest rates; these differ from those required at the time of the previous valuation.

- interest: 3.9% per annum for 10 years, 4.5% per annum thereafter for actives, deferred vested and LTD members below age 55 (2.3%/3.4% was used at the previous valuation); for pensioners and other non-retired members aged 55 and over, we used a flat rate of 4.70% (based on a duration for these liabilities of 9.4 years) throughout as a proxy to immediate annuity purchase rates (a flat rate of 2.85% was used in 2021, based on a duration for these liabilities of 11.0 years);
- mortality: for all members, the 2014 Canadian Pensioners Mortality Table (CPM2014) combined with projection scale CPM Improvement Scale B (CPM-B) on a sex distinct basis (the same assumption was used in the previous valuation); for non-retired members and former members, mortality is ignored before assumed pension commencement date; and
- wind-up expenses: $1,500,000 assumed; subtracted from the assets. The allowance has been developed as our expectation of best estimate allowance for expenses which would be expected for termination of the plan based on the Plan provisions and our experience with other similar plans, and an assumption that the plan wind-up will occur within 12 months following the valuation date. A wind-up expense allowance of $1,200,000 was included at the previous valuation.
- as required, we used the market value of assets for the hypothetical wind-up/solvency valuation (the market value of assets was also used at the previous valuation).

Emerging Experience

It should be noted that emerging experience differing from the assumptions described above will result in gains or losses that will be revealed in future valuations.

Appendix F: Going Concern Valuation Balance Sheet

The results of the valuation as of December 31, 2024 with respect to benefits accrued for service to the valuation date are set out below. The December 31, 2021 results are shown for comparison. The cost of benefits for future service subsequent to the valuation date is dealt with in Appendix G.

The Basic Account liabilities include the capitalized value of indexing supplements granted through January 1, 2024, but exclude future indexing to be granted after the valuation date. The inflation granted as of January 1, 2025 is excluded to be consistent with the assets, which exclude the transfer from the Inflation Adjustment Account to cover the cost of that indexing. The Inflation Adjustment Account liabilities are set equal to the Inflation Adjustment Account assets.

Going Concern Valuation Balance Sheet

($,000's)	December 31, 2021	December 31, 2024
Assets (smoothed value)		
1. Basic Account	2,142,157	2,622,668
2. Inflation Adjustment Account	437,165	417,872
3. Total Assets	**2,579,322**	**3,040,540**
Liabilities		
4. Actuarial present values of Basic Account:		
a) Active members	625,414	722,152
b) Disabled members	75,094	93,054
c) Deferred members	32,419	35,604
d) Inactive members	9,506	863
e) Pensions in payment	739,866	930,163
f) reserve for uncertainty in future mortality improvements	n/a	35,000
5. Basic Account sub-total	1,482,299	1,816,836
6. PfAD = 16.85% for 2024 (8.80% for 2021) x (5)	130,442	306,137
7. Inflation Adjustment Account	437,165	417,872
8. Total Liabilities	**2,049,906**	**2,540,845**
Actuarial excess (Unfunded Liability)		
9. Actuarial excess (unfunded liability) = 3 - 8	**529,416**	**499,695**
10. Going Concern Funded Ratio = 1 / (5 + 6)	**132.8%**	**123.5%**
11. Accessible going concern excess = 9 – (5 + 6) x 0.05	**448,779**	**393,546**

If the market value of assets were to be substituted for the smoothed value, the actuarial excess would increase to $544,626,000.

Excess (Income Tax) Benefit Liabilities

The above liabilities and actuarial excess recognize the maximum Income Tax limits on benefits from the registered portion of the pension plan. If these limits are ignored (the excess benefits are currently provided through the Supplemental Benefit Account, which does not accumulate any assets), the liabilities (including PfAD) would increase by $25,973,000 to $2,566,818,000 and the actuarial excess would reduce to $473,722,000.

Reconciliation with Previous Valuation

The previous valuation at December 31, 2021 indicated an actuarial excess of $529,416,000, compared to the actuarial excess of $499,695,000 for this valuation. The change in actuarial position can be traced in an approximate fashion (with all values adjusted for interest to December 31, 2024) as follows:

Change in Actuarial Position

	Approximate Effect on Actuarial excess ($,000's)
1. Surplus at December 31, 2021 with PfAD	**529,416**
2. Interest on Surplus excluding PfAD	113,741
3. Increase in PfAD	(175,695)
4. Actual contributions lower than current service cost rate	(46,299)
5. Experience gains / (losses)	
a) Smoothed investment return greater than assumed	104,199
b) Salary increases higher than assumed	(49,610)
c) YMPE increases higher than assumed	1,252
d) Retirements later than assumed	7,861
e) Less terminations than assumed (including rehires)	(5,563)
f) Mortality experience	(4,423)
g) Disability experience	4,045
6. Gains / (losses) due to changes in valuation assumptions	
a) Discount rate increased	56,142
b) Mortality rates changed (net reduction)	(1,524)
c) Addition of reserve for uncertainty in future mortality improvements	(35,000)
7. Change in adjustments for salary increases and timing	(5,577)
8. Data treatment change	(529)
9. Miscellaneous	7,259
10. Surplus at December 31, 2024	**499,695**

The main sources of gain/loss were as follows:

- The smoothed rate of return over the inter-valuation period was about 7.0% per annum, compared to the 5.60% per annum going concern investment return assumption, generating a gain of $104.2 million (item 5a).
- As discussed in Appendix B, actual cumulative salary increases over the inter-valuation period were higher than the valuation assumption. Combined with the higher than expected YMPE increases, this generated a loss of $48.4 million (items 5b and 5c).
- Other experience gains (losses) such as retirements later than assumed, less terminations than assumed, mortality and disability experience, generated a gain of $1.9 million (items 5d to 5g).
- WorkSafeBC and the employees both contributed to the Basic Account at a rate of 7% integrated each during the inter-valuation period. The total contributions to the Basic Account were less than the current service cost indicated by the previous valuation, generating a loss of about $46.3 million (item 4).
- The assumption changes combined to increase the surplus by about $19.6 million (item 6). The gain is mainly due to the increase in the discount rate, offset by the additional reserve for uncertainty in future mortality improvements.
- The change in the required PfAD reduced the surplus by $175.7 million.
- The remainder, an increase in surplus of about $1.2 million, is due to changes in plan membership, the changes in data treatment, the adjustments made to the method to reflect salary increases and timing, other differences between actuarial assumptions and actual experience during the inter-valuation period and other miscellaneous experience gains and losses.

Sensitivity Analysis

Below we show the going concern actuarial liability as at December 31, 2024 based on a one percentage point drop in the going concern discount rate assumption. All other assumptions were kept unchanged. The liability increase per member group is as follows:

Impact on liabilities of 1% drop in discount rates	Going Concern 5.85% ($,000's)	Going Concern 4.85% ($,000's)	Increase ($,000's)
Active members	722,152	855,944	133,792
Disabled members	93,054	113,549	20,495
Deferred members	35,604	41,839	6,235
Inactive members	863	863	0
Pensioners and beneficiaries	930,163	1,013,552	83,389
Reserve for uncertainty in future mortality improvements	35,000	35,000	0
Totals	**1,816,836**	**2,060,747**	**243,911**

Appendix G: Costs for Future Service

The contribution rate required to fund the Basic Account benefits attributable to service on and after January 1, 2025 is 17.42% of salaries (less 3.0% of salaries up to the YMPE). This rate is calculated using the projected unit credit method.

The total current service cost rate calculated in the previous valuation was 18.77% of salaries (integrated). The change from the 18.77% rate to the 17.42% rate indicated by this valuation can be traced as follows:

Change in Total Basic Account Current Service Cost Rate

	Approximate Effect on Current Service Cost
1. December 31, 2021 integrated total Basic Account current service cost rate	**18.77%**
2. Changes in data treatment	(0.09)
3. Changes in adjustments for salary increases and timing	(0.13)
4. Changes in membership profile from 2021 to 2024	(0.59)
5. Assumption changes:	
• Discount rate	(0.78)
• Mortality rates	(0.01)
• Reserve for uncertainty in future mortality improvements	0.30
6. Administration expense allowance	(0.05)
7. December 31, 2024 integrated total Basic Account current service cost rate	**17.42%**

The reduction arising from the change in the membership profile is largely as the average age and service of the active membership reduced since the previous valuation.

As the going concern funded ratio exceeds 105%, the PBSA does not require the PfAD to be added to the current service cost. The PfAD on the current service cost would otherwise be 2.94% of salaries. The present value of this PfAD over 3 years is approximately $34.0 million.

Assuming that employee contributions continue to be made at the rate of 7% of salaries (integrated), WorkSafeBC's portion of the current service cost is 10.42% (integrated).

The 17.42% integrated rate deals only with the combined employer and employee current service contribution rates for the Basic Account. Both WorkSafeBC and the employees are, in addition, required to pay 1% of salaries each to the IAA, for a total of 2%.

On the basis of the valuation data and assumptions, and assuming that the covered active membership remains constant, the projected payroll rate as at December 31, 2024 is $399,686,000. The annual current service costs calculated as at December 31, 2024, and based on that payroll, are as follows:

Current Service Cost

	Basic Account		IAA		Total
	Rate (integrated)	$ at December 31, 2024	Rate	$ at December 31, 2024	$
Employees	7.0%	24,076,000	1.0%	3,997,000	28,073,000
WorkSafeBC	10.42%	37,746,000	1.0%	3,997,000	41,743,000
Total	**17.42%**	**61,822,000**	**2.0%**	**7,994,000**	**69,816,000**

The above amounts recognize the maximum Income Tax limits on benefits. If these limits are ignored, the 17.42% integrated total Basic Account current service cost would increase by 0.11%, to 17.53% integrated.

Current Service Cost Rate – Sensitivity

Below we show the current service cost rate based on a one percentage point drop in the going concern discount rate assumption. All other assumptions were kept unchanged.

Impact on current service cost rate of 1% drop in discount rates	Going Concern 5.85%	Going Concern 4.85%	Increase
Current service cost rate	17.42%	20.92%	3.50%

The Basic Account Current Service Cost reflecting a 1% drop in the discount rate is $75,811,000.

Appendix H: Hypothetical Wind-up / Solvency Balance Sheet

The results of the wind-up/solvency valuation as of December 31, 2024 on the basis of the solvency assumptions described in Appendix E are set out below. Comparative results for December 31, 2021 are also included.

Hypothetical Wind-up / Solvency Balance Sheet as at December 31, 2024

($,000's)	December 31, 2021	December 31, 2024
Basic Account Assets		
1. Basic Account Assets at Market Value	2,333,953	2,667,599
2. Wind-up expenses	(1,200)	(1,500)
3. Hypothetical Wind-up/Solvency Assets[1]	**2,332,753**	**2,666,099**
Basic Account Liabilities		
4. Actuarial present values of:		
a) Active employees	869,993	797,308
b) Disabled employees	107,513	108,750
c) Deferred members	49,865	44,826
d) Inactive members	15,595	863
e) Pensions in payment	963,391	1,029,452
5. Hypothetical Wind-up/Solvency Liabilities	**2,006,357**	**1,981,199**
Surplus (Deficiency)		
6. Hypothetical Wind-up/Solvency surplus/(deficit) = 3 - 5	**326,396**	**684,900**
7. Solvency ratio = 3 / 5	**116.3%**	**134.6%**

On the basis of the solvency methods and assumptions described in Appendix E, in our opinion, the value of the plan assets would be greater than the actuarial liabilities if the plan were to be wound up on the valuation date. The surplus would have been $684,900,000.

[1] The IAA assets and liabilities, which are equal to the assets, have not been included in the solvency balance sheet, because the indexing is not a guaranteed benefit. Including the IAA would not affect the solvency deficiency, but would decrease the solvency ratio.

The breakdown of active and disabled members' solvency liabilities between those assumed to take a commuted value on plan termination and those assumed to elect an annuity purchase is as follows:

Actuarial Liabilities ($,000's)	Actives	Disabled	Total
Assumed to take an annuity	448,208	74,592	**522,800**
Assumed to take a commuted value	349,100	34,158	**383,258**

Solvency Ratio and Transfer Deficiencies

The solvency ratio for the plan is 134.6%, which is greater than 100%. Under the *PBSA*, if a plan has a solvency deficiency (a "solvency ratio" less than 100%), there are limits on the amounts that may be transferred out of the Plan. Since the solvency ratio is greater than 100%, amounts transferred from the Plan may be paid in full.

Sensitivity Analysis

Below we show the impact on the solvency liabilities as at December 31, 2024 of a one percentage point drop in the discount rate assumption.

- interest for those assumed to take a commuted value - reduced from 3.9% per annum for 10 years and 4.5% per annum thereafter to 2.9% and 3.5% respectively;
- interest for those assumed to take an annuity - reduced from 4.70% per annum to 3.70% per annum.

All other assumptions were kept unchanged.

Impact on liabilities of 1% drop in discount rates	Solvency 3.9% for 10 years / 4.5% thereafter and 4.70% ($,000's)	Solvency 2.9% for 10 years / 3.5% thereafter and 3.70% ($,000's)	Increase ($,000's)
Active members	797,308	921,331	124,023
Disabled members	108,750	123,716	14,966
Deferred members	44,826	53,646	8,820
Inactive members	863	863	-
Pensions in payment	1,029,452	1,129,389	99,937
Total	**1,981,199**	**2,228,945**	**247,746**

Incremental Cost

In accordance with the Canadian Institute of Actuaries' Standard of Practice, we have estimated the incremental cost of the solvency liability as at December 31, 2024. This is the expected aggregate change in solvency liability between December 31, 2024 and the next valuation as of December 31, 2027.

The incremental cost as at December 31, 2024 of amounts funded from the Basic Account is $205,148,000. This amount makes no allowance for any pension increases that may be granted over the period. The incremental cost does not impact the funding requirements of the Plan under the *PBSA*, and is for information purposes only.

The expected current service cost contributions towards the Basic Account are $61,822,000 per annum, assuming contributions are increased to the current service cost rates. This is less than the incremental solvency cost over the 3 year period commencing on the valuation date. In other words, we would expect a deterioration in the solvency position as of the next valuation date, assuming no changes in the solvency assumptions, that contributions are made at the current service cost rate and that experience is in line with the going concern assumptions.

Appendix I: Required Contributions

Current Service Cost

Our calculations indicate that the benefits currently accruing will require total contributions to the Basic Account equal to 17.42% of salaries (integrated); based on the current plan rules, this would be allocated as 7% from employees and 10.42% from WorkSafeBC.

Using the projected pensionable payroll as at December 31, 2024 of $399,686,000, we have estimated that the 17.42% integrated rate will produce an annual contribution to the Basic Account of $61,822,000 for the calendar year 2025. This figure will vary, of course, depending upon the actual pensionable payrolls.

The following table sets out the estimated contributions, assuming that contributions are made at the current service cost:

Estimated Current Service Cost

	Basic	IAA
Current Service Cost %		
Employees	7.0 integrated	1.0
WorkSafeBC	10.42 integrated	1.0
Current Service Cost $		
Employees	$24,076,000	$3,997,000
WorkSafeBC	$37,746,000	$3,997,000
Total	**$61,822,000**	**$7,994,000**

Minimum Contributions

As the Plan is in a surplus position at December 31, 2024 under both the going concern and the solvency valuations, WorkSafeBC may elect to contribute at lower rate, by applying some of the going concern actuarial excess towards its required contribution.

In such a case, the *PBSA* requires that a buffer is set aside equal to 5% of the Basic Account liability, or $106,149,000. The remaining $393,546,000 of accessible going concern excess may be used in part or full to reduce contributions. The maximum contribution reduction permitted by the *PBSA* is the amortization of the remaining actuarial excess over a 5 year period. This annual amount exceeds the current service cost and, hence, under this measure a full contribution holiday could be elected. In addition, any contribution reduction cannot create a solvency deficiency. Based on the solvency surplus of $684,900,000, a full contribution holiday could be elected.

Alternatively, WorkSafeBC could elect to retain the accessible going concern excess assets in the fund or use it in part to reduce contributions. Under the PBSA, the total contributions to the Basic Account can be any amount between nil and the and Basic Account current service cost of 17.42% of payroll, prior to allowance for the maximum as per the next section.

Written notice of any contribution reduction must be provided to the Superintendent and to the plan members.

Maximum Contributions

At WorkSafeBC's option, WorkSafeBC may choose to fund at a higher level than the current service cost stated above. Based on the Plan's surplus position, the maximum current contribution rate is the current service cost on an indexed basis. Including the IAA contributions, the total indexed current service cost is 26.73% (integrated). Assuming employee contributions remain at 8% (integrated; including IAA contributions), the maximum contribution WorkSafeBC can make is 18.73% (integrated).

More details are provided in Appendix J.

Appendix J: Maximum Surplus and Contributions - ITA

Section 147.2(2) of the *ITA* limits employer contributions that may be made to a plan if surplus[1] exceeds a certain amount – the Plan becomes revocable if contributions are made when such surplus exists. This surplus threshold is equal to the lesser of (a) and (b), where

(a) = the Basic Account actuarial surplus, and

(b) = 25% x the Basic Account actuarial liability

Subsection (c) of Section 147.2(2) of the *ITA* also provides that the benefits taken into account for the purposes of a contribution recommendation "may include anticipated cost-of-living and similar adjustments where the terms of a pension plan do not require that those adjustments be made but it is reasonable to expect that they will be made".

Indexing at full CPI has been provided since January 1, 1984 under the present plan terms, and for many years before that under earlier plan provisions. As discussed earlier, indexing is currently financed on a mixture of a pay-as-you-go basis (from a matching 1% employee/WorkSafeBC contribution for active members), an excess interest basis (interest in excess of the valuation assumption is transferred each year from Basic to IAA in respect of pensioner liabilities), and a "terminally-funded" basis (each year the full capitalized cost of any indexing granted is transferred from IAA to Basic). Thus, it may be considered appropriate for purposes of testing the *ITA* 147.2(2) limits to recognize, in advance, the future indexing of pensions for the present plan membership. Accordingly, we carried out a subsidiary, fully indexed valuation, with modifications to the regular assumptions as described in Appendix E. On this basis, the statement of actuarial position and the future costs shown earlier are revised as shown below (only the summary totals are shown):

Statement of Actuarial Position ($,000's)	Regular Valuation	Fully-Indexed Valuation
Assets (smoothed value)		
1. Basic	2,622,668	n/a
2. IAA	417,872	n/a
3. Total Assets	**3,040,540**	**3,040,540**
Liabilities		
4. Basic sub-total with PfAD	2,122,973	n/a
5. IAA	417,872	n/a
6. Total Liabilities	**2,540,845**	**2,798,965**
Surplus (Deficit)		
7. Surplus (Deficit) = 3 - 6	**499,695**	**241,575**
8a. Funded Ratio = 1 / 4	**123.5%**	
8b. Funded Ratio = 3 / 6		**108.6%**

[1] For the purpose of this test, the ITA terminology, including the word "surplus", is used.

The following table sets out the costs of future benefits:

	Regular Non-Indexed Current Service Cost		Indexed (Maximum Current Service Cost Contributions)
	Basic	**IAA**	**Basic and IAA Combined**
Future Cost Rates (%)			
Employees	7.0 integrated	1.0	8.0 integrated
WorkSafeBC	10.42 integrated	1.0	18.73 integrated
Total	**17.42 integrated**	**2.0**	**26.73 integrated**
Future Cost $			
Employees	$24,076,000	$3,997,000	$28,073,000
WorkSafeBC	$37,746,000	$3,997,000	$70,960,000
Total	**$61,822,000**	**$7,994,000**	**$99,033,000**

These results indicate that the $499,695,000 actuarial surplus in the regular valuation decreases to an actuarial surplus of $241,575,000 when the full value of indexing is recognized on an advance-funding basis. WorkSafeBC's required current service contributions also increase from 10.42% Basic (integrated with the YMPE) plus 1% IAA, to a combined requirement of 18.73% (integrated). On the indexed basis, the *ITA* 147.2(2) surplus limit works out to $241,575,000. Thus, the Plan does not have an excess *ITA* surplus, and WorkSafeBC contributions - total Basic plus IAA - may be made at a level not exceeding the current service cost rate (on the indexed basis), i.e. at 18.73% (in addition to the total Basic plus IAA employee contributions).

Appendix K: Plausible Adverse Scenarios

The following analysis does not impact the funding requirements of the Plan under the *PBSA* and is for information purposes only.

A plausible adverse scenario is considered to be one that will occur in the short term (immediately to one year) with a likelihood of occurring between 1 in 10 and 1 in 20 based on the opinion of the actuary. The purpose of the following scenarios is to illustrate the impact on the Plan's financial position of the following adverse but plausible assumptions relative to the best estimate assumptions selected for the Plan's going concern valuation. The purpose of disclosing these results is to demonstrate the sensitivity of the funded status and annual current service cost between December 31, 2024 and the next valuation date to certain key risk factors affecting the Plan. The results of the scenarios selected are shown in the table below with a description of each scenario following.

($,000's)	Going Concern Results at December 31, 2024	Plausible Adverse Scenario Results at December 31, 2024		
		Interest Rate Risk	Deterioration of Asset Values	Longevity Risk
Total smoothed going concern assets	3,040,540	3,052,142	2,991,429	3,040,540
Liabilities	2,540,845	2,523,983	2,534,096	2,573,927
Going concern actuarial excess (unfunded liability)	499,695	528,159	457,333	466,613
Funded Ratio (excluding IAA)	123.5%	125.1%	121.5%	121.6%
PfAD on actuarial liabilities	306,137	237,983	306,137	310,907
Accessible going concern excess	393,546	422,933	351,184	358,810
Total current service cost	17.42%	18.14%	17.42%	17.57%
Discount rate	5.85%	5.63%	5.85%	5.85%
PfAD	16.85%	12.75%	16.85%	16.85%
Market value of assets	3,092,630	3,150,643	2,847,076	3,092,630

Interest Rate Risk

This scenario illustrates the sensitivity of the funded status of the Plan and current service cost to an immediate change in the market interest rates underlying fixed income investments.

In order to assess the impact of a decrease in interest rates of a magnitude consistent with a 1 in 10 likelihood of occurring, we have used the same stochastic model that is used to determine the going concern discount rate (see Appendix E). The stochastic model is based on 5,000 simulations of projected financial variables, including long term yields on fixed income investments and asset class returns. Our long-term best estimates for these variables, and the going concern discount rate are based on the median values over these 5,000 simulations.

To determine the sensitivity to interest rate risk, and the resulting impact on Plan assets and liabilities, we have:

- considered the hypothetical going concern discount rate over the 500 trials where fixed income yields are lowest at the one-year horizon,
- determined the decrease in median long-term fixed income yields over the 500 trials where fixed income yields are the lowest at the one-year horizon.

As such, under the interest rate risk scenario, the going concern discount rate is decreased by 0.22% per year to 5.63% per year as of December 31, 2024.

With respect to the impact on fixed income assets, the scenario results in a decrease in long term yields on fixed income investments of 0.82%. The PfAD is decreased by 4.10% to 12.75%, based on this reduction in the fixed income yield.

Based on the estimated duration of the Plan assets and liabilities, we have then determined the estimated change to the Plan's funded status under the interest rate risk scenario.

Deterioration of Asset Values

This scenario illustrates the sensitivity of the funded status of the Plan to short-term shock which causes a reduction in the market value of assets, with no change to the liabilities of the Plan. This scenario is assumed not to impact the current expectation of the long-term rate of return, and consequently, the going concern discount rate.

In order to assess the impact of a decrease in asset values of a magnitude consistent with a 1 in 10 likelihood of occurring, we have used the same stochastic model that is used to determine the going concern discount rate (see Appendix E). The stochastic model is based on 5,000 simulations of projected financial variables, including long term yields on fixed income investments and asset class returns.

To determine the sensitivity to a deterioration in asset values, based on the Plan's target asset mix, we have:

- determined the decrease in median investment returns over the 500 trials where investment returns are the lowest at the one-year horizon.

As such, under the deterioration of asset values scenario, the actuarial value of assets (smoothed assets) is decreased by 1.62% as of December 31, 2024. Note that market value of

assets is assumed to decrease by 7.94%; the use of smoothed assets decreases the immediate effect of the asset shock.

Longevity Risk

This scenario illustrates the sensitivity of the funded status of the Plan to pension plan members living longer than expected. The impact of this scenario was determined using a mortality scaling factor of 90% to the mortality table used for the going concern valuation as of December 31, 2024, that is, a more conservative mortality assumption than currently employed.