



Actuarial Report of the

**Workers' Compensation Board
Superannuation Plan**

as at March 31 2009

Vancouver, B. C.

December 22, 2009

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WorkSafeBC
6951 Westminster Highway
Richmond BC V7C 1C6

We have completed an actuarial valuation of the Workers' Compensation Board Superannuation Plan (the "Plan") as at March 31, 2009 and have pleasure in submitting our report thereon. Our report is concerned with the experience in the three year period since March 31, 2006, the date of the last valuation.

The purpose of the actuarial valuation is to determine the financial position of the Basic Account as at March 31, 2009 and to report on the adequacy of the employee and employer contribution rates; it is also to be used for filing purposes with the regulatory authorities, and for accounting purposes in the financial statements of the Workers' Compensation Board of British Columbia ("WorkSafeBC"). 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 or the financing related thereto in that 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 inflation assets.

Plan benefits have not changed since the previous valuation - the Plan rules are summarized in Appendix A. No changes were made to the long-term economic assumptions. The mortality rate assumption was reduced to reflect the increasing longevity of members, and minor adjustments were made to the assumed rates of withdrawal from the Plan. The assumptions are described in detail in Appendix D.

The current going concern valuation indicates that the actuarial surplus of \$46,305,000 that existed at March 31, 2006 has increased to \$51,276,000 at March 31, 2009. The increase in surplus is the net result of a number of items, the major ones being investment income earned (on a smoothed basis) at a rate higher than the rate assumed in the previous valuation (increasing surplus), partially offset by salary increases larger than assumed and actual WorkSafeBC contributions lower than the normal cost rate (each reducing surplus), - a more detailed analysis of the changes is given in the report.

Employees contribute 6% of salaries, less 1.5% of salaries up to the Year's Maximum Pensionable Earnings ("YMPE") under the Canada Pension Plan, for basic non-indexed benefits. On this basis, WorkSafeBC's current service contribution requirement (i.e. the balance of the cost) was determined at the 2006 valuation as 10.01% of salaries, less 1.5% of salaries up to the YMPE.¹

The current valuation indicates that the WorkSafeBC normal cost rate requirement for basic non-indexed benefits has increased from 10.01% to 10.61% (integrated), with employee contributions continuing at the integrated 6% rate. The increase is the result of a number of factors, the major causes being a change in the membership profile (primarily an aging of the active Plan membership), the change in the mortality assumption, and the inclusion of an explicit expense assumption; these are analyzed in detail in Appendix F.

The solvency valuation indicates that the solvency surplus of \$56,946,000 (using the market value of assets) that existed at March 31, 2006 has deteriorated to a solvency deficiency of \$50,627,000 at March 31, 2009 (using the smoothed value of assets). The Solvency Asset Adjustment (the difference between the smoothed value of assets and the market value) is \$88,345,000. In the absence of any special solvency funding relief, the PBSA and associated Regulations require that this new solvency deficiency be amortized over 5 years; this would require contributions equal to 5.24% of payroll, remitted no less frequently than quarterly in arrears. Special arrangements that are permitted under the PBSA and Regulations include use of a conforming letter of credit to secure the solvency deficiency payments, or application to the Minister for an extension of the solvency amortization period. Alternatively, WorkSafeBC could opt to pay an amount of \$138,972,000, being the amount by which the plan termination liabilities would exceed the value of the plan assets, were the Plan to be terminated

The solvency ratio of the plan is 83.3% (less than 100%) and, because of this, where lump sums are transferred from the Basic Account by a terminated member or with respect to a deceased member, additional contributions will be required if the amounts transferred exceed a threshold of \$14,132 (in 2010) for an individual transfer or if the cumulative transfer deficiencies exceed 5% of the fund assets. The amount of the additional contribution required is equal to 16.7% of the amounts transferred from the Basic Account. Alternatively, 16.7% of the transfer value could be withheld for up to 5 years. Further detail with respect to these additional payment requirements is given in Appendix G .

As in previous valuations, we evaluated the going concern surplus and maximum contributions in terms of the limits permitted under the *Income Tax Act* ("*ITA*"). The *ITA* surplus/contribution tests have been calculated on a basis that recognizes full indexing of benefits on a pre-funded basis, as permitted by the *ITA* – detail is provided in Appendix A.

¹ In addition to the above contribution requirements for basic non-indexed benefits, the employees and WorkSafeBC each contribute 1% of salaries to the IAA.

Due to the existence of the solvency deficiency, contributions of at least the normal cost rate (10.61% integrated for the employer plus 6% integrated for employees) must be made. If the solvency deficiency is to be amortized over 5 years, additional contributions equal to 5.24% of salaries (not integrated) are required.

Based on the payroll rates as at March 31, 2009, the dollar contribution amounts at the various rate levels are summarized below:

		Basic	IAA
Contribution Requirements (%)			
Cost of Future Benefits (%)	Employees	4.5/6.0	1.0
	WorkSafeBC	9.11/10.61	1.0
Solvency Amortization (%)	WorkSafeBC	5.24%	n/a
Contribution Requirement (\$)			
Cost of Future Benefits (\$)	Employees	\$10,160,000	1,998,000
	WorkSafeBC	19,370,000	1,998,000
	Subtotal Cost of Future Benefits	29,530,000	3,996,000
Solvency Amortization (\$)	WorkSafeBC	10,468,000	0
	Total	39,998,000	3,996,000

The foregoing valuation results recognize only those benefits up to the maximum *ITA* benefit limits. These are paid under Part 1 of the Plan. Benefits above these limits are paid under Part 2 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 2 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 surplus reduces by \$6,823,000 to \$44,453,000 and the current service cost requirement for basic non-indexed benefits increases by 0.18%, from 10.61% to 10.79% of salaries.

Detail with respect to the results of the valuation and the information and methods used for the valuation is contained in the attached appendices.

To the best of our knowledge, there are no material subsequent events that would affect the results and recommendations of this valuation.

Actuarial Opinion

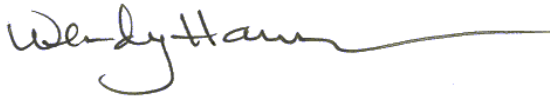
In our opinion,

- (a) the data on which the valuation is based are sufficient and reliable for purposes of the valuation,
- (b) the assumptions used are, in aggregate, appropriate for purposes of the valuation, and
- (c) the methods employed are appropriate for the purposes of the valuation.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice. For regulatory purposes, the next valuation should be completed no later than as of March 31, 2012.

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

Respectfully submitted,



WENDY HARRISON
Fellow of the Canadian Institute
of Actuaries
Fellow of the Society of Actuaries



RICHARD A. BORDER
Fellow of the Canadian Institute
of Actuaries
Fellow of the Institute of Actuaries

December 22, 2009

Appendix A Summary of Plan and Amendments

Changes to the Plan

The previous valuation was based on the provisions of the Plan as at March 31, 2006. There were no amendments to the plan between March 31, 2006 and March 31, 2009

The main provisions of the Plan, as at March 31, 2009, are summarized below.

Income Tax Limits

The *Income Tax Act* 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 WorkSafeBC Plan. To this end, a Supplemental Benefit Account has been created to cover the financing and payment of benefits in excess of those registrable under the *Income Tax Act*. The excess benefits are paid on a current cash basis, by allocating from the regular employer contributions, the amounts necessary to maintain the Supplemental Benefit 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/Inflation Adjustment Accounts are inclusive of the allocations to/from the Supplemental Benefit Account; in general, the allocations to/from the Supplemental Benefit Account have not been referenced.

Covered Employees [Section C]

These include every employee of WorkSafeBC.

Employee Contributions [Section D.1]

The following employee contributions are deducted from an employee's salary:

- (a) 4.5% of that part of the employee's salary that does not exceed the Canada Pension Plan Year's Maximum Pensionable Earnings (YMPE) - paid into the Basic Account;
- (b) 6% of the employee's salary which is in excess of the YMPE - paid into the Basic Account; and
- (c) 1% of the employee's salary - paid into the Inflation Adjustment Account.

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

Employer Contributions [Section D.2]

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

Effective December 25, 2003 the employer contribution rate increased by 2%, to:

- (a) 6.5% of that part of the employee's salary that does not exceed the YMPE - paid into the Basic Account;
- (b) 8% of the employee's salary which is in excess of the YMPE - paid into the Basic Account; and
- (c) 1% of the employee's salary - paid into the Inflation Adjustment Account.

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

Trustees [Section E]

The Plan provides for WorkSafeBC to appoint three Trustees, comprising:

- (a) one Trustee who represents WorkSafeBC;
- (b) one Trustee who represents the employees; and
- (c) one Trustee nominated jointly by the two Trustees referred to in (a) and (b).

The Trustees are responsible for the administration of the Superannuation Fund and the Plan.

Section E further provides that WorkSafeBC shall remit to the Trustees the contributions made under the Plan. The Trustees may, in their discretion, invest the fund monies in investments permitted for pension plans registered in compliance with the *PBSA*.

Fund and Accounts [Section F]

The fund is divided into the following two accounts:

- (a) the **Inflation Adjustment Account** consisting of:
 - (i) the 1% contribution by each of the employees under Section D.1 with a matching amount allocated from the employer contributions under Section D.2;
 - (ii) the net investment income earned on the Inflation Adjustment Account;

- (iii) the income, as determined by the plan administrative agent, that is earned on fund assets held in the Basic Account in respect of pensions being paid and that is in excess of the interest anticipated in the most recent actuarial valuation; and
- (iv) where an actuarial valuation discloses a surplus in the Basic Account, such amounts as the Trustees determine be transferred from such surplus;

less:

- (v) amounts transferred to the Basic Account in respect of capitalized supplements granted under Section Q;
 - (vi) refunds to former contributors of the 1% contribution made to this account under Section D.1, or amounts otherwise transferred out of this account in respect of employee and employer contributions allocated to this account;
 - (vii) amounts in respect of the portions of commuted value payments or other transfers out of the Plan that are attributable to indexing adjustments; and
 - (viii) amounts transferred to the Basic Account under Section L.1(d) in respect of the capitalized value of increases in pension resulting from increases in highest average salary under that section - (for deferred vested pensions);
- (b) the **Basic Account** consisting of all the assets in the fund other than assets in the Inflation Adjustment Account.

Notwithstanding the foregoing, the Part 2 non-tax-registered provisions provide for the maintenance of a Supplemental Benefit Account to cover the financing and payment of contributions and benefits in excess of those registrable under the *Income Tax Act*. Contributions from the Basic and Inflation accounts are to be allocated, as applicable, to this account. However, we understand that no assets are to be accumulated in this account.

Eligibility Conditions for Pension [Section H]

An employee is entitled to a pension if:

- (a) having left the service of WorkSafeBC after attaining age 60, the employee retires;
- (b) having reached age 55 and after not less than 2 years of contributory service, the employee retires; or
- (c) having completed 2 years of contributory service, the employee becomes totally and permanently disabled.

The maximum retirement age is age 65.

Amount of Pension [Section J]

The normal pension is payable monthly, and is calculated as follows:

2% of the contributor's highest average salary multiplied by the number of years of pensionable service (not exceeding 35 years), reduced at age 65 or at the date of death or disability, whichever is earlier, by

- (i) 0.7% of the lesser of the contributor's highest average salary and one-twelfth of the YMPE for the calendar year prior to the calendar year in which the pension is first paid; multiplied by
- (ii) the number of years of pensionable service after December 31, 1965 (not exceeding 35 years).

Highest average salary means the average of the monthly salaries received by the employee during the 60 months of service in which the salaries were highest.

The normal pension is payable on an unreduced basis:

- (a) at or after age 55 if the sum of the member's age plus years of contributory service is equal to 90 or more ("rule-of-90");
- (b) at or after age 60 with at least 2 years of contributory service;
- (c) on retirement from active employment, at age 65, regardless of service.

A contributor who has attained age 55 (but not age 60) and who does not meet the requirements of the rule-of-90 may, instead of receiving the full accrued pension starting at age 60, elect a reduced pension starting immediately, but with the 2% in the benefit formula above reduced by 5% for each year the contributor's age is less than the earlier of age 60 or the age at which the age plus years of contributory service total 90, prorated for fractions of a year. If the employee terminates employment after age 50 with at least 10 years of contributory service, the foregoing 5% per year reduction is reduced to 3% per year. A reduced pension is also available to employees terminating after age 60 with less than 2 years of contributory service, with the 2% in the benefit formula being reduced by 5% for each year the employee's age is less than age 65.

The normal form of pension is payable as a single life annuity for those contributors who terminated service before October 1, 1999. For those contributors who terminate service on or after October 1, 1999, the normal form of pension is single life with a 10-year guarantee; (the 10-year guarantee applies only to the lifetime portion of the pension and not to the additional temporary pension payable until age 65).

An employee who has made voluntary additional contributions in the past - these are no longer accepted - will be granted an additional pension or may take a refund.

Part 1 (Income Tax) Benefit Limits [Section J.1.2]

The tax-registered provisions in Part 1 of the pension plan limit the amount of pension as required by the *Income Tax Act*, in respect of service after 1991. The maximum annual pension currently permitted (before application of any early retirement reductions, where applicable) is the lesser of:

- (i) \$2,444 multiplied by the years of service; 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.

The Plan also imposes a 35 year cap on accruals at the above maximum rate. The \$2,444 limit in 2009 is automatically indexed to increases in average wage rates in 2010 and thereafter.

Alternative Types of Pensions [Section I]

A pension may be granted on the single life plan, single life plan with guaranteed period, joint life and last survivor plan, temporary life plan or such combination of these plans as may be approved by the Trustees. The amount of any pension granted on a form other than the normal form is calculated on an actuarially equivalent basis.

Where an employee has a spouse at retirement, the employee is deemed to have elected a form of pension that provides for the continuance of 60% of the pension to his/her spouse in the event that the employee should predecease the spouse, unless the employee and spouse elect, by completion of a form prescribed by the Trustees, to choose some other form of pension. A spouse is as defined in the *PBSA*, and includes a common-law or same-sex spouse.

Disability Pension [Sections D.1(c) and H.2]

Section D.1(c)(ii) provides that if an employee is receiving a monthly income benefit from an approved group disability income benefit plan, the employee is not entitled to a disability pension under the Plan, but the period for which the employee receives such group disability 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.

Section H.2 provides that where a disability pension is payable, the pension earned to date may be increased as permitted under the *Income Tax Act*. Subject to certain limits, this permits the immediate recognition of projected future service in the calculation of the pension.

Death Benefits [Section K]

The pre-retirement death benefits are as follows:

- if the employee is not vested (i.e. less than 2 years of contributory service and dies before age 60), the death benefit is a refund of employee contributions plus interest;
- if the employee is vested, the death benefit is the full commuted value of the regular pension earned to the date of death.

Death benefits for former employees who have not taken a refund and who die before retirement are determined in the same manner as for active employees, as described above.

Vesting, Refunds and Portability [Section L]

A terminating employee who has 2 or more years of contributory service is entitled to receive a deferred vested pension starting at or after age 55, calculated as described earlier in the section headed "Amount of Pension".

If an employee terminates without becoming entitled to a pension, a refund is payable, equal to the accumulated employee contributions plus interest. Interest credits are based on the average yield of 5-year personal fixed term chartered bank deposit rates, published in the Bank of Canada Review as CANSIM Series V122515. Prior to 2002, interest was credited at a rate related to the investment earnings on the fund.

In lieu of a deferred pension, a vested member who terminates before age 55 may elect a lump-sum commuted value in respect of the full vested pension, payable on a locked-in basis. 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.

The deferred vested pension of an employee is based on the highest average salary at termination, increased to retirement or to December 31, 1982 if earlier, in accordance with changes in the pension index. Subsequent to 1982, the highest average salary is increased to retirement by the percentage increase granted to pensions for the period between the month of termination and the month the pension becomes effective. Section (L.1(d)) provides that the cost of this indexing is funded from the Inflation Adjustment Account.

Supplementary Allowances (Indexing) [Sections P and Q]

The Plan provides for increases to retired members on January 1 of each year, with the benefits funded from the Inflation Adjustment Account. 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 Consumer Price Index ("CPI") over the 12 months ending on September 30 of the previous year.

Section Q sets out additional requirements with regards to 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 Inflation Adjustment Account on the preceding September 30; and
- (d) the capitalized value of all indexing benefits granted annually is transferred from the Inflation Adjustment Account to the Basic Account.

Plan Termination [Section N1]

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 is ignored, both before and after retirement; and
- the liability for future indexing is limited to 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.

Other Items

1. Section N.9 provides that expenses incurred in the administration of the Plan shall be paid from the fund.
2. 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). [Section B – "contributory service" definition]

3. Section N.10 enables WorkSafeBC to request the Trustees 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 Trustees agree, they 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.

4. In 1999, the definitions of, and references to, approved and reciprocal employers were removed from the Plan, to comply with *Income Tax Act* requirements. In general, these provisions allowed for portability among various plans (mostly with four public sector plans in B.C.), whereby service and salaries were commonly recognized in all of the plans. These arrangements have been replaced by transfer of reserve agreements, whereby the plan member may elect to have a reserve transferred and then be covered by the rules of the importing plan.

Appendix B Membership Information

Data as of March 31, 2009 were prepared by the Pension Corporation for 2,746 active employees, 412 former employees entitled to deferred pensions, 202 employees currently receiving long-term disability benefits, 3 inactive employees on leave of absence, 102 other inactive employees, 13 non-retired individuals with very limited data, 1,015 former employees in receipt of pensions and 114 beneficiaries in receipt of pensions as a result of the deaths of Plan members (a total of 1,129 pensioners). The Pension Corporation advised us that the data supplied are generally proper, complete and in accordance with specifications, unless otherwise noted.

Where possible, we compared totals with corresponding details in the Plan's audited Annual Reports, and also spot-checked individual items against the data recorded for the previous valuation. We also conducted a number of edits on the data to test for internal consistency and overall appropriateness for our valuation. 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.

Details regarding the data are set out below.

The active employee data is summarized below:

Active Employee Data¹ - March 31, 2009

Age ²	Males			Females		
	Number	Average Service (years)	Average Salary ³	Number	Average Service (years)	Average Salary ³
20 – 24	4	0.8	\$73,765	8	0.6	\$43,959
25 – 29	27	1.7	55,081	39	1.4	51,210
30 – 34	57	4.0	65,294	100	4.5	62,249
35 – 39	88	6.4	75,427	196	7.4	68,170
40 – 44	155	9.6	79,807	269	10.4	70,030
45 – 49	185	12.7	88,857	310	12.6	71,734
50 – 54	199	14.8	89,465	332	15.7	70,267
55 – 59	175	18.5	94,479	266	17.0	70,787
60 & over	108	19.6	101,383	126	17.0	66,356
Total	998	13.0	\$86,410	1,646	12.5	\$68,973

The active member data included 102 persons who had no salary or service reported for the year ending March 31, 2009, or with a last-contribution-date prior to March 2009. We excluded them from the active member base, and have included them with the inactive data.

¹ Excluding 102 employees reclassified as inactive

² Age nearest birthday at valuation date

³ Actual earnings for the 12 months ended March 31, 2009 for those employees employed all year and annualized for others. Zero or very low earnings figures were replaced by the average earnings in the same gender group

A comparison of the March 31, 2009 active membership with the March 31, 2006 active membership is as follows:

Comparison of Active Employee Data - March 31, 2009 vs March 31, 2006

	March 31, 2006	March 31, 2009	Change 2006 to 2009
Males			
- Number	914	998	+ 9.2%
- Proportion of total	37.3%	37.7%	+ 0.4%
- Average age	47.9	48.3	+ 0.4 years
- Average service	13.3	13.0	- 0.3 years
- Average salary ¹	\$77,559	\$86,410	+ 11.4%
Females			
- Number	1,537	1,646	+ 7.1%
- Proportion of total	62.7%	62.3%	- 0.4%
- Average age	46.2	47.3	+ 1.1 years
- Average service	12.3	12.5	+ 0.2 years
- Average salary ¹	\$60,679	\$68,973	+ 13.7%

The above comparison indicates a 7.9% increase in the covered membership during the 3 year inter-valuation period. The proportion of males to females has increased slightly. The average ages have increased, by 0.4 years for males and 1.1 years for females. The average service has decreased by 0.3 years for males and increased by 0.2 years for females.

The percentage increase in the average salary is higher for females (13.7% increase) than males (11.4% increase). These increases compare with an expected average salary increase of about 9.3% (3 years compound at 3.0% per year) based on the previous valuation assumptions, producing a liability loss during the inter-valuation period (as shown in the gain and loss analysis in Appendix A).

¹ Average salary in the 12 months ending on the valuation date

The information supplied with respect to 45 of the 412 former employees entitled to deferred pensions was incomplete. We held liabilities for them equal to twice their contributions plus interest. The data for the 412 individuals is summarized below.

Inactive Member Data - March 31, 2009

	Number	Average age	Average initial annual pension ¹	Average offset at age 65	Employer regular contributions with interest
Males	123	49.4	\$10,942	\$2,256	\$5,864,118
Females	244	45.9	9,132	2,223	8,493,303
Incomplete Data	45	n/a	n/a	n/a	231,330

The data for the 202 employees receiving long-term disability benefits is summarized below. We calculated liabilities for them including service projected to age 65, with retirement assumed to occur at age 65.

Members on Long-Term Disability with Projected Deferred Pensions

	Number	Average age	Average Service	Average Salary
Males	45	55.0	18.4	\$78,265
Females	157	52.4	18.3	62,721

The data for the 3 inactive employees on leave of absence is summarized below. We calculated liabilities for them as if they were active employees at the valuation date.

Members on Leave of Absence

	Number	Average Age	Average Service	Average Salary
Males	1	57.0	9.4	\$83,036
Females	2	46.0	11.8	49,224

The 204² “other inactive employees” had regular contributions totalling \$3,272,014 with interest credited to March 31, 2009, and we held a liability for them equal to twice this amount.

With respect to the 13 non-retired members with limited data, we held a liability equal to twice the refund balances.

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 ages between 60 and 65.

² Including the 102 employees reclassified from actives

The information with respect to those in receipt of pension benefits as at March 31, 2009 is as follows:

Pensions in Payment to Former Employees - March 31, 2009

Age Group ¹	Number of Pensioners ²	Annual Pensions (\$,000's) ³				
		Single Life	Joint Life & Survivor	Single Life with Guarantee	Joint L&S with Guarantee	Temporary Life
Males						
55 - 59	42	35	624	289	132	379
60 - 64	100	177	1,144	995	375	904
65 - 69	127	553	1,554	880	231	138
70 - 74	93	615	1,061	307	124	-
75 - 79	63	421	765	58	-	-
80 - 84	56	373	568	7	-	-
85 - 89	42	451	324	-	-	-
90 - 99	10	247	42	-	-	-
Total Males	533	2,872	6,082	2,536	862	1,421
Females						
55 - 59	81	40	352	1,063	140	715
60 - 64	129	417	453	1,474	149	1,031
65 - 69	114	727	220	774	28	79
70 - 74	67	384	128	160	8	-
75 - 79	46	493	64	1	-	-
80 - 84	24	270	27	-	-	-
85 - 89	13	166	35	-	-	-
90 - 99	8	69	-	-	-	-
Total Females	482	2,566	1,279	3,472	325	1,825
Grand Total	1,015	5,438	7,361	6,008	1,187	3,246

¹ Age nearest birthday at March 31, 2009

² These figures include only those who were formerly contributors to the Plan.

³ Including indexing supplements granted through January 1, 2009

Pensions in Payment to Beneficiaries - March 31, 2009

Age Group ¹	Number of Beneficiaries ²	Annual Pensions (\$,000's) ³	
		Single Life	Temporary Life
Males			
- 44	-	-	-
45 - 49	-	-	-
50 - 54	1	48	-
55 - 59	2	15	-
60 - 64	2	21	-
65 - 69	1	2	-
70 - 74	-	-	-
75 - 79	1	13	-
80 - 84	-	-	-
85 - 89	-	-	-
90 - 99	1	4	-
Total Males	8	103	-
Females			
- 44	1	3	-
45 - 49	1	44	-
50 - 54	-	-	-
55 - 59	3	57	-
60 - 64	7	153	-
65 - 69	4	93	-
70 - 74	4	54	-
75 - 79	15	203	-
80 - 84	27	430	-
85 - 89	27	451	-
90 - 99	9	126	-
Total Females	98	1,614	-
Remaining guarantees	8	94	-
Grand Total	114	1,811	-

¹ Age nearest birthday at March 31, 2009

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

³ Including indexing supplements granted through January 1, 2009

The data from the Pension Corporation, and our treatment of this data, are summarised below.

		Valuation Treatment					
	Pension Corp. Data	Pensioners	Active Members	Long Term Disability	Deferred Vested	Reactivate	Refund 2 x CWI
Pensioners	1,129	1,129					
Active Members	2,746		2,644				102
Long Term Disability	202			202			
Terminated Vested	412				367		45
Inactive members	102						102
Leave of absence	3					3	
Limited data	13						13
Total membership	4,607	1,129	2,644	202	367	3	262

Appendix C Operation of the Fund

The Fund's financial statements are based on the market values of assets. The day-to-day investment of the Fund is carried out by the British Columbia Investment Management Corporation. The March 31, 2009 fund balance is summarized below.

Fund Balance at March 31, 2009

		(\$,000's)
Cash		16
Contributions receivable		2,056
Accrued investment income		438
Accounts payable and accrued expenses		(375)
Investments in process		
- due from sales		2,544
Investments (at market value)		
- short-term		11,456
- bonds		260,738
- mortgages		48,911
- equities		316,428
- private placements		66,115
- foreign currency		0
- real estate		139,634
Fund Balance		847,961
Comprising:	Basic Account	694,504
	Inflation Adjustment Account	153,457
	Supplemental Benefit Account	0

The changes in the fund balances during the three years since the previous valuation are summarized below:

Change in Fund Balance From March 31, 2006 to March 31, 2009

	(\$,000's)			
	Basic Account	Inflation Adjustment Account	Supplemental Benefit Account	Total
Fund balance March 31, 2006	677,499	155,262	-	832,761
Plus: Contributions				
- employees	29,347	5,763	-	35,110
- employer	40,073	5,711	577	46,361
Transfers from other plans	6,623	1,776	25	8,424
Investment income (including realized and unrealized capital changes)	3,528	1,343	-	4,871
Less: Pensions paid	(64,470)	-	(602)	(65,072)
Termination benefits	(6,028)	(2,565)	-	(8,593)
Administration expenses	(1,843)	-	-	(1,843)
Transfers to other plans	(3,171)	(887)	-	(4,058)
Internal account transfers	12,946	(12,946)	-	-
Net increase	17,005	(1,805)	-	15,200
Fund balance March 31, 2009	694,504	153,457	-	847,961

The fund market values and the total fund returns during the last 10 years are set out below. Our yield calculations are determined assuming that cash flows occur at mid-year. The assumption of mid-year cash flows will distort the results if the weighted cash flows are too far from mid-year. The yields are based on the total net assets of the fund including both invested and non-invested assets (i.e. receivables and payable are included in the asset base to determine yields). The nature of our calculations is such that the results will likely differ somewhat from those produced by performance measurement services who apply more refined techniques. The yields are also shown on the smoothed asset value basis (described in Appendix D).

March 31	Market Values (\$,000's)			Total Fund Yields on	
	Basic Account	Inflation Adjustment Account	Total Fund	Market Value	Smoothed Value
2000	500,151	108,318	608,469	18.1	15.0
2001	478,757	108,340	587,097	- 2.9	11.4
2002	490,217	114,446	604,663	4.1	7.9
2003	442,080	106,072	548,152	- 9.1	4.2
2004	538,560	128,338	666,898	20.8	3.3
2005	585,387	137,940	723,327	7.7	4.0
2006	677,499	155,262	832,761	14.5	7.6
2007	758,585	175,504	934,089	11.4	9.4
2008	774,726	178,806	953,532	1.9	10.0
2009	694,504	153,457	847,961	(11.4)	3.6

Appendix D Actuarial Basis and Assumptions

The significant actuarial assumptions are summarized below.

Investment Return	6% per annum (unchanged from previous valuation)
General ("across-the-board") Salary Increases	3% per annum (unchanged from previous valuation)
Seniority Salary Increases	annual percentages varying by age and sex
Pension Indexing	<p>future indexing of pensions and deferred pensions ignored, as will be covered by Inflation Adjustment Account</p> <p>future indexing (by inflation) of wage base for disability accruals assumed to be a charge to the Basic Account and to be 2.5% per annum (unchanged from previous valuation)</p> <p>indexing to date is capitalized and forms part of pension liability</p>
Asset Values	assets carried at smoothed market values
Costing Method	recommended contributions are based on an accrued benefit approach

More detail with respect the actuarial basis and assumptions is set out below.

Investment return and general salary increase rates

Our actuarial costing method involves projecting future benefit disbursements and contribution and investment income. In such projections, the most significant assumptions are those that are made for the future rates of return to be earned by the fund and the future general salary increases (which are across-the-board increases applying to employees regardless of service, rank or position).

(a) Relationship to excess investment return threshold

The investment return assumption is also significant for another reason. Since 1982, the provisions of the Plan relating to the indexing of pensions provide that the income to be credited to the Inflation Adjustment Account in respect of pensions being paid is determined by reference to the amount "in excess of the interest anticipated in the most recent actuarial valuation". An increase in the investment return assumption, and hence in the excess return threshold, would have at least two effects:

- (i) it would reduce the amount of excess investment return allocated to the IAA, and hence reduce the potential for future indexing; and
- (ii) it would reduce the cost of the basic non-indexed Plan, provided benefit levels are not changed.

A reduction in the investment return assumption would have the opposite effects. In this context, consistency in the assumptions, from one valuation to the next, takes on added significance.

The previous valuation used a long-term investment return assumption of 6% per annum. As noted earlier, this also becomes the threshold rate used to determine excess investment return transfers to the IAA during the post-retirement period; effectively, this is the same as saying that the Basic Account would earn no more than 6% per annum during the post-retirement period.

(b) Actual returns and asset mix

We have calculated market value returns on the total fund (i.e. Basic plus IAA), including non-invested assets (i.e. receivables, net of payables), net of investment-related expenses, and assuming that all cash flows occur at mid year, as 11.4% for 2006/07, 1.9% for 2007/08 and -11.4% for 2008/09. At March 31, 2009, approximately 45% of the total portfolio was invested in equities and private placements, and a further 17% in real estate.

After examining the net average investment return earned by the fund's investments, the yield on investments made in recent years, the likely future trend of investment returns in general, the investment practices, and the provisions of this plan - e.g. the allocation of excess investment income to the Inflation Adjustment Account - we have, following discussions with WorkSafeBC and the Plan Trustees, kept our long-term investment return assumption as 6% per annum for the purposes of this valuation.

(c) Real return and salary relationships - derive salary assumption

The 6% investment return assumption used in the 2006 valuation was viewed as consisting of a real return component of about 3.5% per annum plus a long-term underlying inflation assumption of about 2.5% per annum. We continued with the same real return component of 3.5% for this valuation and obtain the same long-term underlying inflation assumption of 2.5% per annum.

The general salary increase assumption used in the 2006 valuation was 3% per annum. This was viewed as consisting of the underlying inflation assumption of 2.5% per annum, plus a real salary increase component of 0.5% per annum. We continued with the same real salary increase component of 0.5% and obtain the same general salary increase assumption of 3%.

(d) Implication of assumption interrelationships

During the **post-retirement period**, the investment return is critical, as this is the discount rate for the Basic Account post-retirement liabilities. It also sets the excess investment return threshold that effectively puts a ceiling on the amounts the Basic Account can earn on the portion of the assets that support post-retirement liabilities. For example, if the investment return assumption is 6%, then the excess investment return threshold is 6%, and if the actual long-term returns exceed 6% on average, all of the excess will be transferred to the IAA, i.e. the Basic Account will only retain 6% on those assets.

During the **pre-retirement period**, it is the relationship, i.e. the net difference, between the investment return and general salary increase assumptions that is the key, rather than their absolute levels - projected benefits increase each year by the salary assumption and are then discounted by the investment assumption. The net result is that the liabilities are effectively being discounted by the net difference between the two assumptions. For example, the long-term assumptions we have used in this valuation (i.e. 6% investment return, 3% salary, 2.5% underlying inflation) would produce results similar to those using assumptions of 6.5% investment return and 3.5% salary, with 3% underlying inflation; or 7% investment return and 4% salary, with 3.5% underlying inflation, etc. Thus, the underlying inflation assumption itself is not relevant.

(e) Summary of interrelationships

The 2009 and 2006 annual investment return and general salary increase assumptions, and their underlying economic interrelationships, are summarized below.

	2006 and 2009 valuation
1. Investment return = excess investment return threshold	6.0%
2. Real return rate	3.5%
3. Implied underlying inflation = 1 - 2	2.5%
4. Real salary increase	0.5%
5. General salary increase = 3 + 4	3.0%

(f) Salary Data and Salary Growth Assumption

The salary data provided to us for this valuation were the actual earnings during 2008/09. Based on our understanding of the pattern of salary increases during this period, we used these salary amounts without further adjustment as being equal to the salary rates on the valuation date (this may understate very slightly the actual salary rates at the valuation date). Thereafter, the assumed rates of salary increase are applied continuously during each future year.

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.

(g) YMPE increase

We also assumed that the YMPE under the Canada Pension Plan would increase at the general salary increase rate of 3% per year from its 2009 level of \$46,300. In the previous valuation we assumed that the YMPE would increase at the rate of 3% per year from its 2006 level of \$42,100.

Pension indexing - Valuation of Basic Account

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 indexed supplements granted through January 1, 2009, 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.

With regard to the vested pensions of members who have terminated employment, the amounts of deferred pensions quoted to us include indexing during the deferred period to date. We understand that such transfers from the Inflation Adjustment Account 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 adjusted the deferred pension amounts to remove this indexing so that the Basic Account liability is aligned with the allocation of assets between the Basic and IAA accounts. In previous valuations, we made no such adjustment.

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 2.5% per annum during the deferral period to retirement.

Asset values

The fund's annual reports record assets on a market value basis. As in previous valuations, we applied a smoothing technique for purposes of the previous actuarial valuation 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 assumed underlying real interest rate plus the year-over-year change in the consumer price index. The difference between the two returns is then 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 based on a long-term real interest rate, over a five year period.

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

Total Fund Smoothing

	2005/06	2006/07	2007/08	2008/09
1. Mar-over-Mar increase in CPI	2.2%	2.3%	1.4%	1.2%
2. Base return = (1) + 3.5%	5.7%	5.8%	4.9%	4.7%
Year-end asset values - (\$,000's)				
3. Market value	832,761	934,089	953,532	847,961
4. Smoothed value	757,689	834,787	919,361	955,827
5. Ratio of (4) ÷ (3)	0.910	0.894	0.964	1.127
Annual returns				
6. Market value	14.5%	11.4%	1.9%	-11.4%
7. Smoothed value	7.6%	9.4%	10.0%	3.6%

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	2008/09
8. Market value	\$694,504
9. Smoothed value	\$782,849
10. Ratio of (9) ÷ (8)	1.127
Inflation Adjustment Account	
11. Market value	\$153,457
12. Smoothed value	\$172,978
13. Ratio of (12) ÷ (11)	1.127

The figures above indicate that the smoothed asset value is 12.7% higher than the market value as at March 31, 2009. This is a significant reversal of the relationship at the last valuation, when the smoothed asset value was 9% lower than the market value. The relatively low market value returns during the period were sufficient to eliminate this 9% smoothing "cushion", and furthermore, to generate a 12.7% "negative smoothing cushion". The net effect of the smoothing mechanism increases the "smoothed" rates of return during the 3 year inter-valuation period to above the long-term assumption, on average. While the financial position of the plan has improved due to the performance of the assets on a smoothed basis, it has deteriorated on a market value basis. This difference illustrates the volatility of the assets, and the dampening effect of the smoothing process.

Mortality

- (a) For active employees we assumed 75% for males and 80% for females of the respective base rates in the 1994 Group Annuity Mortality Table. The previous valuation used corresponding multiples of 80% for males and 85% for females at the respective rates in the 1994 Group Annuity Mortality Table.
- (b) For employees retired on account of disability we continued to use 85% for males and females of the mortality rates (applicable in 1997) for similar retirees used for the valuation of the Canadian Public Service Superannuation Plan as at March 31, 1996 (that valuation applies mortality improvement factors, on a dynamic basis, to certain base rates). The same assumption was used in the previous valuation.
- (c) For other retired employees, the beneficiaries and spouses of former employees, and for active employees after retirement, we used 75% for males and 80% for females of the rates of the 1994 Group Annuity Mortality Table. In the previous valuation, we used corresponding multiples of 80% for males and 85% for females of the rates in the 1994 Group Annuity Mortality Table.

The change in mortality rates was made to allow for improvements in the mortality of members.

The above rates are the same as those used for the most recent actuarial valuation under the BC Public Service Pension Plan.

Withdrawal

We examined the rates of withdrawal for reasons other than death, retirement or disability over the period April 1, 2006 to March 31, 2009 and compared this with the experience observed and the rates used for previous valuations. We have made modest changes to the withdrawals rates used for the previous valuation, by adopting the following multiples of those rates.

Multiples applied to 2006 Withdrawal Rates

	In the first 3 years of service			After 3 years of service
	1 st year	2 nd year	3 rd year	
Males	105%	100%	100%	105%
Females	105%	100%	100%	100%

Sample withdrawal rates are shown in the following tables.

A. Withdrawal Rates Applicable in the First 3 Years of Service
(These include terminations from all sources, i.e. including death, disability and retirement)

Age at entry	2009 valuation			2006 valuation		
	1 st year	2 nd year	3 rd year	1 st year	2 nd year	3 rd year
Males						
20	.146	.141	.136	.139	.141	.136
30	.075	.086	.089	.071	.086	.089
40	.069	.075	.062	.066	.075	.062
50	.055	.051	.055	.052	.051	.055
Females						
20	.092	.122	.147	.088	.122	.147
30	.087	.122	.127	.083	.122	.127
40	.061	.074	.053	.058	.074	.053
50	.049	.060	.049	.047	.060	.049

B. Withdrawal Rates Applicable After 3 Years of Service

Attained age	2009 valuation		2006 valuation	
	Males	Females	Males	Females
23	.116	.118	.110	.118
33	.041	.069	.039	.069
43	.020	.029	.019	.029
53	.011	.013	.010	.013

The withdrawal rates we have used do not extend past age 54, and are the same as those used for the most recent valuation under the BC Public Service Pension Plan.

Disability

The Plan provides for either the payment of a disability pension from the Plan or, for employees receiving long-term disability benefits, the continued accrual of pension benefits. We examined the combined experience of employees going on disability pensions and on long-term disability and retained the rates used in the previous valuation. Since most employees receive continuing disability service credits rather than an immediate pension, we have continued to value the disability cost for active employees as a deferred pension (indexed before retirement) with continued accrual of service, rather than as an immediate pension. 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. The rates adopted are the same as those used for the most recent actuarial valuation for the BC Public Service Pension Plan.

Sample Disability Rates

Age	2006 and 2009 Valuations ¹	
	Males	Females
25	.0003	.0001
35	.0006	.0012
45	.0022	.0036
55	.0067	.0102

Retirement

We examined the 2006-2009 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. Based on these investigations, we decided to continue with the retirement rates used in the previous valuation.

The rates used in this and the previous valuations, are as follows:

¹ The rates used for this valuation are 100% for males and 115% for females of the respective rates used for the valuation of the Canadian Public Service Superannuation Plan as at March 31, 1999.

Rates of Retirement

Age	Service	2009 and 2006 valuation	
		Males	Females
For unreduced retirement pensions			
55 - 59	rule of 90	.55	.55
60	10	.26	.21
61	10	.18	.18
62	10	.18	.18
63	10	.18	.18
64	10	.26	.26
65	0	1.00	1.00
For reduced early retirement			
55 - 59	at least 10 years, but not rule-of-80	.08	.10
55 - 59	rule-of-80	.14	.16

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.

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 both on the earnings history of the active members during the 3 year period ended March 31, 2009 and on the graduated average salaries of the active members as of March 31, 2009, 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. Sample earnings rates expressed as a proportion of earnings at age 65 are as follows:

Sample Seniority Salary Scale Rates

Age	2009 and 2006 valuation	
	Males	Females
25	.641	.659
35	.833	.825
45	.938	.927
55	.990	.983
65	1.000	1.000

Proportion of eligible terminating employees electing a vested pension

Effective January 1, 1998, locking-in of vested pensions occurs after 2 years of service, in respect of all service credits. We have therefore valued all vested terminations as vested pensions. The same assumption was made in the previous valuation.

The balance of the terminating employees (i.e., those not vested) is assumed to elect a refund of contributions with interest.

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.

Expenses

Administration expenses are paid out of the pension fund, effective January 1, 1997. These amounts (excluding investment-related expenses) totalled 0.37%, 0.33% and 0.29% of salaries for the 2006/07, 2007/08 and 2008/09 fiscal years respectively. Given the existence of a surplus in previous valuations, we have, up to now, ignored these expenses in our calculation of the current service cost requirements.

Taking into account the current financial position of the Plan, we have incorporated an explicit expense provision of 0.33% of payroll in this valuation.

The investment management fees are excluded from our analysis above. As before, we have assumed that these are implicitly included in the long-term investment return assumption, which is assumed to be net of such charges.

50% rule

This rule provided that if the employee contributions-plus-interest exceed 50% of the value of the pension, the excess is credited to the employee. It was dropped as part of the 1999 benefit changes. Accordingly, we had dropped the application of this test in our 2000 valuation, with respect to active employees, but had continued with it, on an interim basis, with respect to those who were terminated with deferred vested entitlements at the valuation date. We dropped this test fully at the 2003 valuation.

Refunds

We continued with the interest assumption used for accumulation and refunds of employee contributions to be 1.5% less than the valuation interest assumption, i.e. at 4.5% per annum. This allows for the *PBSA*-related practice whereby the refund interest rate is set equal to an average of 5-year bank-term-deposit rates (which are assumed to be 1.5% less than fund earnings).

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.

Voluntary contributions

As in the 2006 valuation, this is not a material figure, and we have ignored it in the valuation balance sheet.

Maximum pension rule

The tax-registered provisions in Part 1 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) \$2,444 in 2009 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 future normal 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 \$2,444 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 \$2,444 limit is automatically indexed each year after 2009 in accordance with increases in the average wage (at the previous valuation the corresponding dollar limit was \$2,111, and was scheduled to increase to \$2,444 in 2009, and thereafter by the average wage increase). Accordingly, we have applied a 3% per annum increase to the \$2,444 limit after 2009 (the same as previous valuation).

While the Part 1 provisions of the Plan limit the normal formula benefits to the *ITA* maxima, the excess benefits are paid under the Part 2 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 existing pensions in payment, and the deferred vested pensions, in full, as provided to us, i.e. we were unable to carve out any "excess" portions; these should be minimal anyway since the limits only affect those benefits earned after 1991.

Treatment of Inflation Adjustment Account

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 Basic, each time indexing is granted.

For disclosure purposes in WorkSafeBC's Annual Report on the Accident Fund, 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 assets are added to both the Basic assets and liabilities. The net effect of this is neutral on the actuarial surplus (unfunded liability) calculated for the Basic Account. For the 2006 valuation, we included the Inflation Adjustment Account assets with offsetting liabilities exactly equal to these assets. We have continued this approach for the 2009 valuation.

Testing of Income Tax maximum surplus and contribution limits

The foregoing assumptions deal with the regular liabilities under the Basic Account. 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, using a smoothed asset value of \$955,827,000;
- We applied an indexing assumption equal to the full assumed underlying inflation rate, i.e. 2.5% per annum. This indexing rate was applied both to pensions after retirement and during the pre-retirement period in the case of deferred vested pensions and disability salary accruals. For active employees, our program applies the indexing on a continuous basis after retirement; for existing pensioners and deferred vested members, the indexing is applied annually, in arrears; 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 $6\% + 1\% = 7\%$ (reduced by 1.5% of salaries below the YMPE).

Actuarial cost method

We have continued with the approach used in the previous valuation, namely, the Accrued Benefit Actuarial Cost Method. Under this approach, the actuarial present value of benefits earned for service before the valuation date is compared with the assets on hand to determine the unfunded actuarial liability or actuarial surplus, 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 only 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.

Solvency valuation

Under the pension legislation of British Columbia (i.e. the *PBSA*), certain certifications are required with respect to the 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 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.

Accordingly, we have applied the following changes to the actuarial assumptions in determining the funded status of the plan as at March 31, 2009:

- all non-terminated members assumed to be terminated and 100% vested in their accrued pensions as at March 31, 2009
- all active and deferred vested members' liabilities generally 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 94.5% of the 1-year 2008/09 data salaries (as an approximation to the current 5-year highest average salaries taking into account any special "signing" bonus payments during the 5-year period) and the 2008 YMPE of \$44,900
- members on long-term disability assumed to be credited with future accrual to age 65 and a deferred pension from that age
- interest: 3.3% per annum for 10 years, 5.3% per annum thereafter for actives, deferred vested and LTD members below age 55 (4.5%/4.75% was used at the previous valuation); for pensioners and other non-retired members aged 55 and over, we used a flat rate of 4.85% throughout (as a proxy to immediate annuity purchase rates; flat 4.75% used in 2006); for LTD's aged 55 and over, a flat rate of 4.45% (as a proxy to deferred annuity purchase rates, a flat rate of 4.5% used in 2006)

- mortality for actives and LTD's: UP-94@2020 for members below age 55 assumed to take a lump sum settlement. UP-94@2015 Table for members aged 55 and over assumed to elect an annuity purchase; mortality ignored before retirement; unisex mortality (at 50% male, 50% female) applied after assumed retirement (50% male, 50% female used in 2006)
- mortality for deferred vested members: UP-94@2020 for members below age 55 assumed to take a lump sum settlement. UP-94@2015 Table for members aged 55 and over assumed to elect an annuity purchase; mortality ignored before retirement; sex distinct mortality applied after assumed retirement
- mortality for pensioners and beneficiaries: UP-94@2015, on a sex-distinct basis
- wind-up expenses: \$1,200,000 assumed; subtracted from the assets (\$1,200,000 at the 2006 valuation).

In previous valuations, assets were carried at market value for the purpose of the solvency valuation. Taking into account the recent market conditions, the long-term commitment of the plan sponsor to maintaining the pension plan, and the use of the smoothed value of assets for the going concern valuation, we modified the asset valuation method used for this solvency valuation. For solvency, assets are now valued using the same smoothing mechanism as for the going concern valuation. This method is permitted under the PBSA and associated Regulations.

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 E Going Concern Valuation Balance Sheet

Statement of Actuarial Position

The results of the valuation with respect to benefits accrued for service to the valuation date are set out below. The cost of benefits for future service subsequent to the valuation date is dealt with in Appendix A.

The Basic Account liabilities include the capitalized value of indexing supplements granted through January 1, 2009, but exclude future indexing to be granted after the valuation date; the Inflation Adjustment Account liabilities are set equal to the Inflation Adjustment Account assets.

Going Concern Valuation Balance Sheet as at March 31, 2009

	(\$,000's)
ASSETS (smoothed market value)	
1. Basic Account	782,849
2. Inflation Adjustment Account	172,978
3. Total Assets	955,827
LIABILITIES	
Basic Account (non-indexed)	
4. Actuarial present values of:	
(a) pensions in payment	254,107
(b) benefits to inactive employees (deferred pensions and refunds)	30,251
(c) benefits to employees who are now disabled	36,363
(d) benefits to active employees	410,852
5. Basic Account sub-total	731,573
6. Inflation Adjustment Account	172,978
7. Total Liabilities	904,551
SURPLUS (DEFICIT)	
8. Surplus (balancing item) = 3 - 7	51,276

Excess (Income Tax) Benefit Liabilities

The above liabilities and surplus 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 would increase by \$6,823,000 and the surplus would reduce to \$44,453,000.

Reconciliation with Previous Valuation

The previous valuation at March 31, 2006 indicated an actuarial surplus of \$46,305,000, compared to the surplus of \$51,276,000 for this valuation. The change in actuarial position can be traced in an approximate fashion (with all values adjusted for interest to March 31, 2009) as follows:

Change in Actuarial Position

		Approximate Effect on Surplus (\$,000's)
1. Surplus at March 2006		46,305
2. Interest @ 6% on item 1 for 3 years		8,845
3. Investment income (on smoothed values) higher than 6%		32,309
4. Actual salary increases to March 31, 2009 higher than previously assumed		(22,768)
5. Actual WorkSafeBC contributions lower than normal cost rate		(13,389)
6. Freeze vested salary at date of termination		3,891
7. Assumption changes		
	pre-retirement mortality	18
	post-retirement mortality	(6,428)
	withdrawal rate	101
		(6,309)
8. Pensioner mortality gain		1,134
9. Other factors including changes in plan membership and other differences between actuarial assumptions and actual experience during the inter-valuation period		1,258
10. Surplus at March 2009		51,276

The smoothed rate of return over the valuation cycle was about 7.6%, compared to the 6% going concern investment return assumption, generating a gain of \$32.3 million (item 3). As discussed in Appendix B, actual cumulative salary increases over the inter-valuation period exceeded the valuation assumption, generating a loss of \$22.8 million (item 4). WorkSafeBC contributed to the Basic Account, at a rate of 8% integrated, which was less than the normal cost of 10.01% integrated indicated by the previous valuation, drawing down surplus by about \$13.4 million (item 5). The change to the treatment of vested salaries (described in Appendix D) increased the surplus by about \$3.9 million (item 6). The assumption changes combined to decrease the surplus by about \$6.3 million, with most of the change arising from the reduction of the post-retirement mortality assumption to reflect the expected improved longevity of pensioners. There was a small pensioner mortality gain of about \$1.1 million (item 8); this is due to the volatility of the experience, and does not obviate the need for the reduction in the assumed mortality rate. The remainder, an increase in surplus of about \$1.3 million, is due to changes in plan membership and other miscellaneous experience gains and losses.

Thus the major factors leading to the net increase in the surplus may be summarized as: investment income earned at a rate higher than the rate assumed in the previous valuation (item 3), offset by the impact of actual salary increases higher than long-term assumptions (item 4) and actual WorkSafeBC contributions lower than normal cost rate (item 5).

Appendix F Costs for Future Service

The contribution rate required of WorkSafeBC to fund Basic Account benefits attributable to service on and after April 1, 2009 is 10.61% of salaries (less 1.5% of salaries up to the YMPE). This rate is calculated using the accrued benefit method, assuming that employee contributions will continue to be made at the rate of 6% of salaries (integrated).

The normal actuarial cost rate calculated in the previous valuation was 10.01% of salaries (integrated). The change from the 10.01% rate to the 10.61% rate indicated by this valuation can be traced as follows:

	Approximate Effect on Normal Cost
1. 2006 integrated cost rate	10.01%
2. Changes in membership profile from 2006 to 2009	+ 0.17
3. Assumption changes:	
- pre-retirement mortality	- 0.01
- post-retirement mortality	+ 0.11
4. Expenses	+ 0.33
5. 2009 integrated cost rate	10.61%

The increase under item 2 above is largely due to an aging of the active membership. As noted in Appendix B, the average ages have continued to increase, by 0.4 years for males and 1.1 years for females, during the 3-year inter-valuation period.

The 10.61% integrated rate deals only with the employer contribution requirement to the Basic Account. WorkSafeBC is, in addition, required to pay 1% of salaries to the IAA.

On the basis of the valuation data and assumptions, and assuming that the covered active membership remains constant, the projected payroll rate as at March 31, 2009 is \$199,766,000. The current service contribution requirements calculated as at March 31, 2009, and based on that payroll, become:

	Basic Account		IAA		Total
	Rate	\$ at 3.31.09	Rate	\$ at 3.31.09	\$
Employees	4.5/6.0%	10,160,000	1.0%	1,998,000	12,158,000
WorkSafeBC	9.11/10.61%	19,370,000	1.0%	1,998,000	21,368,000
Total		29,530,000		3,996,000	33,526,000

The foregoing amounts recognize the maximum Income Tax limits on benefits. If these limits are ignored, the 10.61% (integrated) required WorkSafeBC contribution rate to the Basic Account would increase by 0.18%, to 10.79%.

Appendix G Solvency Valuation

The statement of actuarial position shown in Section 1 of this Appendix is revised below on the basis of the solvency assumptions described in Appendix D.

Solvency Balance Sheet as at March 31, 2009

	(\$,000's)
BASIC ACCOUNT ASSETS	
1. Basic Account Assets at Market Value	694,504
2. Solvency Asset Adjustment	88,345
3. Basic Account Assets at Smoothed Value	782,849
4. Wind-up expenses	(1,200)
5. Total Net Assets	781,649 ¹
BASIC ACCOUNT LIABILITIES	
6. Actuarial present values of:	
(a) pensions in payment	271,321
(b) benefits to inactive employees (deferred pensions and refunds)	38,187
(c) benefits to employees who are now disabled	45,287
(d) benefits to active employees	477,481
7. Total Basic Account Liability	832,276
SURPLUS (DEFICIENCY)	
8. Balancing item = 5 - 7	(50,627)

If the market value of assets in the Basic Account, equal to \$694,504, was substituted in the above solvency balance sheet in item 3, the solvency deficiency would increase to \$138,972,000. Thus, on the basis of the solvency methods and assumptions described in Appendix D, in our opinion, the value of the plan assets would be less than the actuarial liabilities if the plan were to be wound up on the valuation date. The shortfall would be \$138,972,000, based on the market value of assets.

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 increase the solvency ratio.

The solvency ratio for the plan is 83.3% (calculated as the ratio of [item 1 – item 4] to item 7 above), which is less than 100%. In this case, when amounts are transferred from the Basic Account on behalf of terminated or deceased members, additional contributions may be required. When the individual transfer amount from the Basic Account exceeds \$14,132¹, or cumulative transfer deficiencies² exceed 5% of the fund assets³, the amount of additional contribution is equal to 16.7% of individual amounts transferred from the Basic Account. Alternatively, 16.7% of the Basic Account transfer value could be withheld for up to 5 years.

¹ The threshold of \$14,132 calculated as [5% of the 2010 YMPE/16.7%] and applies in calendar year 2010. This threshold must be recalculated in subsequent calendar years.

² The transfer deficiency is equal to 16.7% of the commuted value, where 16.7% represents 100% minus the solvency ratio.

³ 5% of the Basic Account assets is equal to about \$34.7 million. The Basic Account transfers have historically been in the range of \$2 to \$4 million per annum; it is therefore improbable that cumulative transfer deficiencies would exceed the 5% of assets.

Appendix H Required Contributions

Our calculations indicate that the benefits currently accruing will require total contributions to the Basic Account equal to 16.61% (integrated): 10.61% from WorkSafeBC and 6% from employees.

Using the projected pensionable payroll as at March 31, 2009 of \$199,766,000, we have estimated that the 16.61% integrated rate will produce an annual contribution to the Basic Account of \$29,530,000 for fiscal 2009/2010. This figure will vary, of course, depending upon the actual pensionable payrolls.

In addition, the new solvency deficiency of \$50,627,000 (as outlined in Appendix G) must be addressed. In the absence of any special solvency funding relief, the solvency deficiency should be amortized over not more than 5 years from the valuation date. We have calculated the required contribution rate, expressed as a level percentage of pensionable payroll, as 5.24%. The dollar amount of projected solvency deficiency payment for fiscal 2009/2010 is \$10,468,000, in addition to the normal cost contributions. The payments toward the solvency deficiency are to be made no less frequently than quarterly in arrears.

WorkSafeBC could choose to make larger payments to finance the solvency deficiency more quickly but the cumulative payments made until the time of the next valuation should not exceed \$138,972,000 which is the amount by which actuarial liabilities would exceed the value of the plan assets if the plan were to be wound up on the valuation date.

The following table sets out the required contributions, assuming the solvency deficiency is amortized over 5 years.

		Basic	IAA
Required Contributions %			
Cost of Future Benefits (%)	Employees	4.5/6.0	1.0
	WorkSafeBC	9.11/10.61	1.0
Solvency Amortization (%)	WorkSafeBC	5.24%	n/a
Required Contributions \$			
Cost of Future Benefits (\$)	Employees	\$10,160,000	1,998,000
	WorkSafeBC	19,370,000	1,998,000
	Subtotal Cost of Future Benefits	29,530,000	3,996,000
Solvency Amortization (\$)	WorkSafeBC	10,468,000	0
	Total	39,998,000	3,996,000

Appendix I Maximum Surplus and Contributions - ITA

Section 147.2(2) of the *ITA* limits employer contributions that may be made to a plan if surplus 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) = 20% x the (defined-benefit, i.e. Basic Account) actuarial liability, and
- (b) = the greater of
 - (i) twice the current service cost
 - And (ii) 10% x the 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 D. 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	782,849	n/a
2. IAA	172,978	n/a
3. Total	955,827	955,827
Liabilities		
4. Basic sub-total	731,573	n/a
5. IAA	172,978	n/a
6. Total	904,551	951,583
Surplus (Deficit)		
7. = 3 - 6	51,276	4,244

The following table sets out the costs of future benefits:

	Regular Non-Indexed Normal Cost		Indexed (Maximum Normal Cost Contributions)
	Basic	IAA	Basic and IAA Combined
Future Cost Rates (%)			
Employees	4.5/6.0	1.0	5.5/7.0
WorkSafeBC	9.11/10.61	1.0	12.64/14.14
Total	13.61/16.61	2.0	18.14/21.14
Future Cost \$ at 3.31.09			
Employees	10,160,000	1,998,000	12,158,000
WorkSafeBC	19,370,000	1,998,000	26,421,000
Total	29,530,000	3,996,000	38,579,000

The foregoing results indicate that the \$51,276,000 actuarial surplus in the regular valuation reduces to an actuarial surplus of \$4,244,000 when the full value of indexing is recognized on an advance-funding basis. WorkSafeBC's required current service contributions also increase from 10.61% Basic (integrated with the YMPE) plus 1% IAA, to a combined requirement of 14.14% (integrated). On the indexed basis, the *ITA* 147.2(2) surplus limit works out to \$95,158,000, which is much higher than the adjusted (indexed-basis) surplus of \$4,244,000. Thus, the Plan does not have an excess *ITA* surplus, and it would thus appear as if WorkSafeBC contributions - total Basic plus IAA - may be made at a level not exceeding the normal cost rate (on the indexed basis), i.e. at 14.14% (in addition to the total Basic plus IAA employee contributions).

The above discussion does not reflect the impact on the maximum contributions of the new solvency deficiency. Effectively, under *ITA* Regulation 8516(2) Funding on a Termination Basis, the plan sponsor may make contributions in an amount so that, if the plan is terminated immediately after the contribution is made, the plan will have sufficient assets to pay benefits accrued to date. Therefore, in addition to the maximum normal costs set out in the table above, the plan sponsor may contribute an amount of up to \$138,972,000 (the amount by which, in our opinion, the plan termination liabilities would exceed the value of the plan assets) if the plan were terminated.

Appendix J B.C. Cost Certificate

This Cost Certificate is required under the Pension Benefits Standards Act, Section 9(3)(b)

1. Name of plan: Workers' Compensation Board Superannuation Plan
2. Registration number: P85663
3. Plan fiscal year-end: March 31
4. Cost Certificate for period 2009 to 2012 According to the actuarial review as of: 3/31/09
5. Normal actuarial cost of benefits for current employment:

(a) For the fiscal year following the review date of the Actuarial Report on which this Cost Certificate is based,

	<u>Basic</u>	<u>IAA</u>
Estimated cost of benefits for all members funded by employer contributions:	\$19,788,000	2,041,000*
Estimated cost of benefits for all members funded by member contributions:	<u>\$10,379,000</u>	<u>2,041,000*</u>
Total estimated cost of benefits for all members:	<u>\$30,167,000</u>	<u>4,082,000*</u>

(b) The rule for computing the normal actuarial cost of benefits for the period covered by this Cost Certificate is:

Employer: - % of employee contributions

9.11/10.61 % of covered payroll Basic + 1.0% IAA

 - other - describe:

Employee: 4.5/6 % of covered payroll Basic + 1.0% IAA

 - other - describe:

* these figures are equal to those shown in the body of the report, increased by 2.16% to reflect the average salary increase at 4/1/2009.

6. Unfunded liabilities and solvency deficiencies existing at the beginning of the period covered by this Cost Certificate:

Original date established	Original balance at the beginning of period covered by this Cost Certificate	Annualized special payments	Percent of annual payroll, if applicable	End of amortization period
---------------------------	--	-----------------------------	--	----------------------------

a) Unfunded liabilities

i.		\$ Nil	\$		
ii.		\$	\$		
iii.		\$	\$		

b) Solvency deficiencies

i.	03/31/2009	\$ 50,627,000	\$	5.24%	03/31/2014
ii.		\$	\$		
iii.		\$	\$		

7. If the plan has an indexation provision, was this provision fully included in the determination of:

- a) The going concern liability? yes no
- b) The normal actuarial cost? yes no

8. a) Value of surplus assets of the plan at the review date: \$ 51,276,000

b) If known to the reviewer, a description of how the surplus assets will be utilized:

9. Plan Assets (not including IAA assets with market value of \$153,457,000)

- a) \$694,504,000 Market valuation b) \$782,849,000 Going concern valuation
- c) \$693,304,000 Solvency assets d) \$88,345,000 Solvency asset adjustment

e) Method used to determine the going concern assets: (includes payables and receivables)

- Book value Adjusted book value Market value Adjusted/average market value
- Blend of book and market Other (specify): _____

10. Plan Liabilities - Going Concern Basis

a) Liabilities for:

- i) \$410,852,000 Active members
- ii) \$ 66,614,000 Deferred vested members and others with future entitlements
- iii) \$254,107,000 Pensioners and/or beneficiaries receiving benefits
- iv) \$731,573,000 TOTAL Basic + \$172,978,000 IAA

b) Valuation method: Unit credit Entry age normal Aggregate
 Individual level premium Attained age normal
 Other (specify): _____

c) Assumptions:

Mortality Tables

GAM 83 (Adjusted) GAM 83 GA 71 (Adjusted) GA 71 GA 65
 Other (specify): GAM 94 (Adjusted)

Unisex mortality table? yes no

If yes, the ratio of males/females assumed: _____ n/a

Valuation interest rate(s)	<u>6.0%</u>	Retirement rate(s)	<u>yes</u>
Withdrawal rate(s)	<u>yes</u>	Disability rate(s)	<u>yes</u>
Age of spouse	<u>M-F = 3</u>	Proportion married	<u>90%</u>
Expenses	<u>ignored</u>	Post-retirement pension increases	<u>0</u>
Maximum pension indexation	<u>3.0%</u>	YMPE indexation	<u>3.0%</u>
Salary increase rate(s)			
Inflation	<u>2.5%</u>	Productivity	<u>0.5</u>
Merit	<u>yes</u>	Total salary increase	<u>3.0 + merit scale</u>

Other assumptions: _____

11. Plan Liabilities - Plan Termination Basis

a) Liabilities for:

- i) \$ 477,481,000 Active members
- ii) \$ 83,474,000 Deferred vested members and others with future entitlements
- iii) \$ 271,321,000 Pensioners and/or beneficiaries receiving benefits
- iv) \$ 832,276,000 TOTAL Basic + \$153,457,000 IAA

b) Assumptions (if different from going concern liability assumptions): *

Mortality Tables

- GAM 83 (Adjusted)
 GAM 83
 GA 71 (Adjusted)
 GA 71
 GA 65
 Other (specify): _____

Unisex mortality table? yes no

If yes, the ratio of males/females assumed: _____

Valuation interest rate(s) _____ Age of spouse _____

Proportion married _____ Expenses _____

Post retirement pension increases _____ Maximum pension indexation _____

Other assumptions: _____ * Please see valuation report Appendix D for solvency assumptions

12. Attach a reconciliation of the results of the actuarial review and identification of the sources of actuarial gains and losses due to plan experience on a going concern basis. - See valuation report

13. If this is a negotiated cost plan, complete the following:

- | a) Employer contributions
Cents/Hour
(or % of Earnings,
if applicable) | Member contributions
Cents/Hour
(or % of Earnings,
if applicable) | N/A |
|---|--|--|
| i) _____ | _____ | Normal actuarial cost |
| ii) _____ | _____ | Unfunded liability/solvency deficiency
payments |
| iii) _____ | _____ | Contingency reserves |
| iv) _____ | _____ | Total contribution rate |
- b) Assumed average number of hours of employment per member per fiscal year: _____

14. Membership data used for actuarial review

Number of:

- a) 2,644 Active members
- b) 834 Deferred vested members and other with future entitlements
- c) 1,129 Pensioners and/or beneficiaries receiving benefits

15. ACTUARIAL OPINION

[If the plan is fully insured, then the person authorized by the insurance company may sign this certificate instead of the actuary.]

In my opinion:

- a) *the data on which the valuation is based are sufficient and reliable for the purpose of the valuation;*
- b) *the assumptions are, in aggregate, appropriate for the purpose of the valuation;*
- c) *the methods employed in the valuation are appropriate for the purpose of the valuation; and*
- d) *the normal actuarial costs and the special payments shown in this Cost Certificate are sufficient to meet the funding and solvency tests prescribed in the Pension Benefits Standards Act and its Regulation.*

- e) *there is no solvency deficiency and the actuarial basis used in this determination is described in Sections 6, 9 and 11 above*

OR

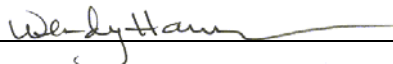
- there is a solvency deficiency as described in Section 6 above; and*

- f) *the solvency ratio is not less than 1 and the actuarial basis used in this determination is described in Sections 9 and 11 above*

OR

- the solvency ratio is: 83.3%*

This cost certificate has been prepared, and my opinion given, in accordance with accepted actuarial practice.

Signature:  Date: December 22, 2009

Name (printed): Wendy Harrison Title: -

Firm: Eckler Ltd.

Address: #980 - 475 West Georgia Street, Vancouver, B.C. V6B 4M9

Phone Number: (604) 682-1381 Fax Number: (604) 669-1510