

**Actuarial Valuation of the
Parliamentarians Pension Plan
As of January 1, 2008**

March 17, 2009



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The Public Service Pension Board has carried out, as required by the current Parliamentary Pensions Law, an actuarial valuation of the Parliamentarians Pension Plan as of January 1, 2008 for funding purposes. The results of the valuation are provided in this report. The last actuarial valuation to be carried out was as of January 1, 2005 by the consulting firm Watson Wyatt Worldwide.

The principal legislation governing benefits for Parliamentarians dates back to 1984, since which time several pieces of amending legislation have been passed. The Parliamentary Pensions Law, 2004 (“the 2004 Law”) was a major revision and re-statement, incorporating several new features to align it with the Public Service Pensions Law, including specifying the administration and financing procedures.

The valuation is to serve the following purposes, as specified in Section 10 of the 2004 Law:

1. to determine whether the Fund remains capable of meeting its long-term liabilities at the rate or rates of contribution then in force;
2. if it is not so capable, to ascertain what rate or rates of contribution would be required to reinstate that capability; and
3. to determine the amount to be reflected on the balance sheet. *(This requirement has now been superseded by International Accounting Standards requirements that are outside the scope of this report.)*

The purpose of this valuation is to identify the liabilities for the active and inactive members and determine the amounts required for funding, in accordance with the 2004 Law.

A separate actuarial valuation is required to establish the amounts to be expensed and the amounts to be reflected in the Government’s balance sheet under the provision of International Accounting Standards No.19.

All monetary amounts in this report have been expressed in Cayman Islands Dollars. Throughout this report “the Plan” means the pension provisions arising under the current law, together with all the subsequent amending legislation.



1. Actuarial Position of the Fund as of January 1, 2008

	<u>January 1, 2005</u> <u>valuation</u>	<u>January 1, 2008</u> <u>valuation</u>
	(CIS thousands)	
Value of Pension Fund Allocated Assets	2,237.8	4,729.3
Past Service Liability (No Projection of Pay)	15,024.0	18,633.6
Past Service Liability (With Projection of Pay)	15,514.1	19,433.7
<i>Actuarial Deficiency</i>	<i>13,276.3</i>	<i>14,704.4</i>
<u>Funded Ratio (Assets/PSL)</u>	14%	24%

2. Future Contribution Requirement

The contribution requirement on the basis of normal cost plus amortization of actuarial deficiency over 20 years is CI\$1,822 thousand for the year commencing January 1, 2008, or 104.07% of the pensionable payroll (compared to 101.15% of payroll in the 2005 valuation), inclusive of members' 6% contribution.



1. Census Data

Information was provided for each individual covered by the Plan as of January 1, 2008. The valuation was based on data submitted with respect to 14 active DB participants receiving total annual pensionable emoluments of CI\$1,751 thousand, 59 participants currently receiving annual benefits of CI\$1,262 thousand, and 1 terminated participant entitled to deferred vested benefits.

Exhibit 2 shows a summary of the census data used.

2. Benefit Provisions

As of January 1, 2008, the legal document concerning the pension provisions is the 2004 Law. Exhibit 4 shows an outline of the principal provisions as they affect the actuarial valuation of the liabilities. Only the provisions that have the most important impact on the valuation are detailed in the outline. There are no substantial differences from the prior valuation.

3. Available Assets

The Plan assets are combined with the assets of the Public Service Pensions Plan and the Judicial Pension Plan. The Board maintains a notional allocation of assets between these three plans and this was used for purposes of this valuation. The value allocated to the Parliamentarians Pension Plan as of January 1, 2008 was \$1,924,680.19. An additional \$2,980,538.66 was paid into the fund on November 25, 2008 in respect of contributions for periods prior to January 2008. For purposes of this actuarial valuation, credit was taken for this late payment of contributions by discounting back to the valuation date using an interest rate of 7% per annum. The resulting discounted value of this additional contribution was \$2,804,668.09. The total value of assets taken into account for this valuation was thus \$4,729,348.28.

4. Actuarial Assumptions Used for Valuing the Plan

Exhibit 3 provides a summary of the actuarial assumptions used in this valuation.

4.1 Economic Assumptions

It is important to take a consistent view on all of the economic assumptions used in an actuarial valuation since they are inter-related. The following are the most important of the economic assumptions:

Inflation - It is usual to commence with an assumption on the underlying long-term rate of inflation, as inflation impacts such things as future salary increases, future asset earnings, and future pension increases. A long-term rate of 2.5% per year has been used for purposes of this valuation.

Interest Rate - The valuation interest rate is used to discount future benefit payments and represents the expected long-term rate of return of the Fund's invested assets. This valuation has

been carried out using a 7% per year rate, net of administration and investment expenses, based on long-term expectations and composition of the portfolio.

Salary Increases - An allowance of 1.5% over and above inflation for merit and promotion has been made. The rate of salary increases used in this valuation is therefore 4% per year.

Pension Increases - We have assumed in the future that pensions will increase at the rate of 2.5% per year, the same as the rate of inflation.

4.2 Demographic Assumptions

The demographic assumptions have also remained unchanged since the previous valuation, when several changes were made. The most important of the demographic assumptions are as follows:

Retirement Age - The plan provides unreduced benefits from age 55 after completing one full parliamentary term. The valuation assumes retirement will take place immediately upon completing age 55 and 10 years of service.

Mortality - The mortality rates used in the prior valuation were left unchanged. The table used is described in Exhibit 3.

Turnover - The age-related turnover rates used in this valuation are shown in Exhibit 3. Given the age profile of the plan participants, turnover rates should have very little impact of plan finances.

5. Actuarial Cost Method Used for Valuing the Benefits

5.1 Assessing the Actuarial Position of the Fund as of January 1, 2008

The actuarial position of the Fund as of January 1, 2008 has been determined using the **projected unit credit actuarial cost method** in conjunction with the assumptions outlined in the preceding section. This method is commonly used for both measuring the funded status of the plan as of the valuation date as well as determining the amount of contribution required. Under this approach, two past service liabilities are developed, which are both based on pensionable service up to the valuation date.

The first past service liability is based on pensionable emoluments as of the valuation date and reflects the liability in respect of benefits actually earned up to December 31, 2008.

The second past service liability allows for the impact of future pay increases at the assumed annual rate of pay increase. This past service liability reflects the eventual liability of benefits related to past service at the valuation date. A surplus/ (deficiency) arises when the assets of the Fund are more/(less) than this projected past service liability under the projected unit credit actuarial cost method.

The second measure of past service liabilities is used for developing the ongoing required contribution rate. It is also the methodology used as amounts to be reflected in the balance sheet

in most recognized accounting standards, but using different assumptions as required by the various accounting standards. The difference between the second and first measures indicates the extent of past service liability attributable to future pay increases.

5.2 Assessing the Future Contribution Requirement

The approach that was developed in the previous valuation has been continued in the current valuation.

The projected unit credit actuarial cost method used for determining the past service liability also develops a **normal cost** of the Plan. The normal cost represents the cost of the accrual of one year's worth of benefit, based on projected pay. Under the projected unit credit actuarial cost method, a common approach to developing the current required annual contribution is to amortize the (surplus)/ deficiency arising. The total annual cost is the normal cost (representing the current year's accrual of benefit) plus this amortization payment (representing past accruals). Based on decisions reached by the Board Trustees, a fresh-start 20- year amortization period has been used.

6. Valuation Results

6.1 The Actuarial Position of the Fund as of January 1, 2008

Exhibit 1 sets out the results of the actuarial valuation on the basis outlined in Sections 5.1 and 5.2 above, as well as the results from the previous valuation for comparison purposes.

Past Service Liability (No Projection of Pay) - The first past service liability measurement, with no future pay projections, is shown in Item C of Exhibit 1, and is equal to CI\$18,633,639. This compares with Fund assets of CI\$4,729,348. It should be noted that the past service liability for inactive members is CI\$13,070,613, significantly less than the assets.

Past Service Liability (With Projection of Pay) - The second past service liability measurement, with future pay projections, is shown in Item D of Exhibit 1, and is equal to CI\$19,433,698. The resulting actuarial deficiency (shown as Item E) is CI\$14,704,350.

6.2 Assessment of Future Contribution Requirements

Lines E through F of Exhibit 1 show the determination of the future contribution requirement based on the funding method adopted by the Board.

Normal Cost - As mentioned above, the normal cost is the cost with respect to benefits being earned during the current year, with allowance for future pay projection. This is shown in Item E of Exhibit 1 and is CI\$480,742 (or 27.46% of pensionable emoluments).

Total Annual Cost - The total annual cost of the benefits provided under the projected unit credit actuarial cost method used is the sum of the normal cost and the amortization of the actuarial deficiency as of January 1, 2008. The amortization period has been taken as 20 years. The total annual cost for 2008 is CI\$1,821,792 (or 104.07% of pay).

7. Conclusions and Recommendations

1. The Fund continues to be severely underfunded. Assets allocated to the Plan cover only 24% of the past service obligations. The Plan's assets are also insufficient to cover the benefits currently in payment.
2. The funding requirement has increased from 101.15% (last valuation) to 104.07% of pensionable payroll. The increase is attributable to:
 - a. The increase in the actuarial deficiency and the consequent increase in the amortization payment. An important reason for the increase in actuarial deficiency is the significant increase in benefits being paid to retired participants and beneficiaries.
 - b. The increase in the normal cost due to the changing demographics of the active membership.
3. The Plan's financing and cash flow situation is very sensitive to contributions being made on a timely manner and also to the incidence of retirements and the consequent lump sum commutations being paid. This needs to be constantly monitored.

I am at the disposal of the Board to discuss this report and to answer any questions that may arise, or to provide any further information that may be required. Professional standards require me to state that I am compensated as an employee of the Public Service Pensions Board.

Respectfully Submitted



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Actuary
Public Service Pensions Board

March 17, 2009

<u>Actuarial Position as of January 1, 2008</u>	<u>January 1 2005</u>	<u>January 1 2008</u>
A. Summary of Valuation Data		
1. Number of participants currently receiving benefits	41	59
2. Number of participants with deferred vested benefits	2	1
3. Number of active participants	15	14
4. Total annual pensionable emoluments (CI\$)	1,657,092	1,750,584
B. Value of Pension Fund Allocated Assets (CI\$)	2,237,802	4,729,348
C. Past Service Liability (No Projection of Pay)		
1. Inactive participants (CI\$)	8,860,891	13,070,613
2. Active participants (CI\$)	6,163,114	5,563,026
3. Total (CI\$)	15,024,005	18,633,639
D. Past Service Liability (With Projection of Pay)		
1. Inactive participants (CI\$)	8,860,891	13,070,613
2. Active participants (CI\$)	6,653,177	6,363,085
3. Total (CI\$)	15,514,068	19,433,698
E. Surplus/(Deficiency) (CI\$) (Item B less D3)	(13,276,266)	(14,704,350)
F. Funding Level		
1. PSL - No Pay Projection (Item B / Item C3)	15%	25%
2. PSL - With Pay Projection (Item B / Item D3)	14%	24%
<u>Future Contribution Requirement</u>		
E. Normal Cost for Year (CI\$)	422,942	480,742
F. Item F as % of Emoluments	25.52%	27.46%
G. Amortization of Deficiency (over 20 years) (CI\$)	1,253,185	1,341,050
H. Item H as % of Emoluments	75.63%	76.61%
I. Total Annual Cost of Benefits (CI\$) (Item F plus Item H)	1,676,127	1,821,792
J. Item J as % of Emoluments	101.15%	104.07%

Summary of Valuation Census Data

	<u>January 1</u> <u>2005</u>	<u>January 1</u> <u>2008</u>
<u>Active Participants</u>		
Number of Active Participants	15	14
Average Age	50.67	50.57
Average Pensionable Service	9.19	8.05
Total Annual Pensionable Earnings	1,657,092	1,750,584
<u>Participants with Deferred Vested Benefits</u>		
Number of Participants	2	1
Total Deferred Pensions (Annual)	114,730	13,738
<u>Participants Currently Receiving Benefits</u>		
Number of Participants	41	59
Total Pensions Currently in Payment (Annual)	694,479	1,262,462



Actuarial Assumptions Employed

A. Economic Assumptions

- | | |
|-------------------------------|---|
| 1. Underlying Inflation Rate: | Long-term inflation rate of 2.5% per year. |
| 2. Interest: | 7% per year, net of administration and investment expenses. |
| 3. Salary Increases: | 4% per year, consisting of an allowance of 2.5% for inflation and 1.5% for merit and promotion. |
| 4. Pension Increases: | 2.5% per year, the same as the rate of inflation. |
| 5. Commutation of Pensions: | It has been assumed that all employees will exercise, to the maximum amount, their right to commute part of their pension for a lump sum payment. |

B. Demographic Assumptions:

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|---------------|---|
| 1. Mortality: | It is not anticipated that the mortality rates of the participants will be significantly different to that of employees of U.S. corporations. Standard U.S. mortality rates have been used for the valuation. The rates used are based on the UP-1994 Table and sample rates are shown below: |
|---------------|---|

<u>Age</u>	<u>Male</u>	<u>Female</u>
20	.000545	.000305
30	.000862	.000377
40	.001153	.000763
50	.002773	.001536
60	.008576	.004773
70	.025516	.014763
80	.066696	.042361
90	.164442	.125016



Actuarial Assumptions Employed (Continued)

B. Demographic Assumptions (Cont'd.):

2. Turnover: The rates at the following illustrative ages indicate the turnover assumptions, excluding mortality and disability:

<u>Age</u>	<u>Annual Rates of Turnover</u>	
	<u>Male</u>	<u>Female</u>
20	.075	.125
25	.050	.125
30	.035	.075
35	.025	.045
40	.015	.025
45	.005	.005
50	---	---

3. Disability: No disability incident rates have been used.

4. Retirement Age: Completion of age 55 and 10 years of service.

5. Family Assumptions:

a. Percentage of Employees with Spouse - 80%.

b. Age of Wife - 3 years younger than husband.

c. Percentage Employees with Dependent Children -

Males:	65% pre-retirement
	5% post-retirement
Females:	20% pre-retirement
	0% post-retirement



Principal Benefit Provisions

- | | |
|--|---|
| 1. Eligibility: | Elected members and the Speaker of the Legislative Assembly are eligible to participate in the Plan. |
| 2. Credited Service: | Service as a plan participant. |
| 3. Pensionable Earnings: | Full calendar month's basic salary paid to the participant. |
| 4. Participant Contributions: | 6% of Pensionable Earnings. |
| 5. Government Contributions: | To be determined by actuarial valuations. |
| 6. Eligibility for Retirement Pension: | Having attained normal retirement age of 55, or early retirement age (between ages 50 and 54 inclusive) and completed one full parliamentary term. |
| 7. Retirement Benefits | |
| a. Pension at Retirement - | Annual pension equals to 1/360 times the number of completed months of credited service times the final month's Pensionable Earnings, subject to a maximum pension of 2/3 of the highest salary earned by a participant. |
| b. Commutation - | Up to 25% of the retirement pension can be commuted for a lump sum. The pension to lump sum conversion will be determined by the plan's actuarial factors. This provision also applies to spouse's pension. |
| c. Pension Increases - | Pensions in payment may be adjusted annually to match annual cost-of-living increases up to 5% and on a sliding scale thereafter. |
| d. Early Retirement | For retirements before age 55, the benefit will be reduced for early retirement in accordance with the plan's actuarial factors. |
| 8. Benefits on Death After Retirement or While Eligible to Retire: | A surviving spouse is entitled to a monthly pension equal to one-half (50%) of participants pension amount.

Each child is entitled to a monthly pension equal to one-half of the participant's pension amount divided by the number of |



children left by the participant. The payment is payable up to age 18 or 23 (for child in full-time education).

9. Benefits on Disablement:

A pension based on accrued normal retirement pension is payable upon receipt of medical evidence of permanent disability and incapacity to perform duties. The benefit will be suspended upon cessation of disability.

An additional pension is payable to a participant who is permanently injured in discharge of duty equal to one-third of the participant's Final Pensionable Earnings.

10. Benefits on Death in Service:

A spouse's pension equal to 50% of the member's pension accrued as of the date of death, based on pay and service at the date of death.

Each child is entitled to a monthly pension equal to one-half of the participant's accrued pension divided by the number of children left by the participant. The payment is payable up to age 18 or 23 (for child in full-time education).

In addition, there will be paid an amount equal to the excess, if any, of the greater of

- (a) a lump sum equal to 12 months' Pensionable Earnings, or
- (b) the participant's contribution account balance

over the actuarially equivalent present value of the pension benefits payable to the beneficiaries.

An additional pension is paid to the beneficiaries of participants killed as a result of injuries received while in the actual discharge of duty.

11. Termination Benefits:

Provided the service requirements are satisfied upon termination, a participant who terminates his employment can expect to receive a pension commencing at age 55, based on benefits accrued at the time of termination. The pension has the same features of commutation, post-retirement death benefit, and post-retirement pension increases as for active employees eligible for retirement benefits.

12. Other Benefits (Not Valued):

None.

