

**Actuarial Valuation of the  
Parliamentarians Pension Plan  
As of January 1, 2011**

**April 12, 2012**



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The Public Service Pension Board (the “Board”) has carried out, as required by the current Parliamentary Pension Law, an actuarial valuation of the Parliamentarians Pension Plan as of January 1, 2011 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, 2008 but this has not been tabled at the Legislative Assembly.

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 Parliamentary Pensions (Defined Contribution Plan) Regulations, 2009 was gazetted on December 4, 2009. Benefits for participants who joined prior to this date are based on defined benefit principles whereas the retirement benefits for newer participants are based largely on defined contribution principle.

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 fund balance sheet.

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.

The Parliamentarians Pension Plan (the “Plan”) is the program resulting from the provisions of the above referenced laws. Although there is only one plan, there are two categories of participants: the Defined Benefit (“DB”) participants and the Defined Contribution (“DC”) participants as indicated above. It should be noted at the outset that the defined contribution plan is not a pure defined contribution plan in the traditional sense. It can be referred to as a “hybrid DC” plan.

Normally, it is the “defined benefits” that require actuarial valuation and this is where the emphasis is placed in this report. It is, however, also important to consider the Hybrid DC benefits because of the financial consequences resulting from the interactions between the two parts.

The January 1, 2005 actuarial valuation, the last actuarial valuation to be tabled, established a required contribution, under the financing method adopted by the Board, of 101.15% of pensionable pay for DB participants.

The January 1, 2008 valuation showed an increase in the unfunded position of the Plan and consequently a higher contribution rate requirement.



All monetary amounts in this report have been expressed in Cayman Islands Dollars.

It should be noted that the results of this valuation are not suitable for reporting under International Public Sector Accounting Standards, for which separate actuarial valuations are prepared annually.

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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 currently compensated as an employee of the Public Service Pensions Board.

Respectfully Submitted



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Actuary  
Public Service Pensions Board

April 12, 2012



1. Actuarial Position of the Fund as of January 1, 2011

	<u>January 1, 2008</u>	<u>January 1, 2011</u>
	<u>Valuation</u>	<u>Valuation</u>
	(CI\$ millions)	
	<i>7% Interest Basis</i>	<i>8% Interest Basis</i>
<b><u>Defined Benefit ("DB")</u></b>		
Value of Pension Fund Allocated Assets	4.73	3.74
Past Service Liability (No Projection of Pay)	18.63	16.00
Past Service Liability (With Projection of Pay)	19.43	16.65
<b><i>Actuarial Deficiency</i></b>	<b><i>14.70</i></b>	<b><i>12.91</i></b>
<b><u>Defined Contribution ("DC")</u></b>		
Assets = Liabilities	0	0.07
<b><u>Total</u></b>		
Value of Pension Fund Allocated Assets	4.73	3.81
Past Service Liability (Projection of Pay)	19.43	16.72
<b><u>Funded Ratio (Assets/PSL)</u></b>		
DB Plan only	24%	22%
DB and DC Plans together	24%	23%

2. Future Contribution Requirement

The contribution requirement for the DC participants is **12.40%** of their payroll, or **CI\$52 thousand** for the year commencing January 1, 2011.

The contribution requirement for the DB participants on the basis of normal cost plus amortization of actuarial deficiency over 20 years is **CI\$1.82 million** for the year commencing January 1, 2011, or **119.15%** of the payroll of the DB participants.

The total annual plan funding cost for 2011, based on active pensionable payroll as of January 1, 2011, is therefore estimated as **CI\$1.87 Million** (or **96.35%** of total pay of both DB and DC participants).



**1. Census Data**

Information was provided for each individual covered by the Plan as of January 1, 2011. The valuation was based on data submitted with respect to 12 active DB participants and 3 active DC participants, 41 participants currently receiving pension benefits and 5 terminated participants entitled to deferred vested benefits.

Exhibit 3 shows a summary of the census data used.

**2. Benefit Provisions**

As of January 1, 2011, the legal document concerning the pension provisions is the 2004 Law. Exhibit 5 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**

Asset and cash flow information was made available by the Finance and Investment Department of the Board. Audited accounts for the period since the last valuation were not available. The Plan assets are combined with the assets of the Public Service Pension Plan and the Judicial Pension Plan. The figure on the right shows the composition of the assets as of December 31, 2010. The long-term investment strategy adopted by the Investment Committee of the Board has been to invest up to 65% in equities/property and the balance in bonds/cash.

Equities	\$ 187.03	59%
Bonds	\$ 106.50	34%
Property	\$ 10.63	3%
Cash/other	\$ 12.52	4%
	<u>\$ 316.68</u>	<u>100%</u>

The Board maintains a notional allocation of assets between these three plans and this was used for purposes of this valuation. The allocation is based on the cash flows of the three plans.

The value allocated to the Parliamentarian Pension Plan was CI\$3.81 million as of January 1, 2011. The value of the assets attributable to DC participants was derived as the total of the participants' account balances. This total was CI\$69 thousand, leaving a balance of CI\$3.74 million for the DB part.



#### 4. Actuarial Assumptions Used for Valuing the Plan

##### 4.1 Economic Assumptions

The economic assumptions were reviewed in detail with the Board Trustees prior to this valuation. In agreement with them, some of the assumptions have changed since the previous valuation – most importantly, the valuation rate of interest and the method of incorporating administrative expenses.

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 economic assumptions should also be consistent with those used for the actuarial valuations of the other public service plans. 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, future pension increases, and administrative expenses. A long-term rate of 2.5% per year has been used for purposes of this valuation. This assumption has remained unchanged since the previous valuation.

**Interest Rate** - The valuation interest rate is used to discount future benefit payments and represents the expected long-term rate of return on the Fund's invested assets. The assets of all three funded plans managed by PSPB are pooled together. A consistent valuation interest rate has therefore been used in all three plans. The previous two valuations have been carried out using a 7% per year rate, based on long-term expectations and composition of the portfolio. This rate was net of investment and administration expenses. The following changes have been made for this valuation:

- a. While it makes sense to use an interest rate net of investment expense, administration expenses are not directly related to investments. It was therefore decided to use an interest net of only investment expenses and to account for administrative expenses more directly and transparently.
- b. A decision was made to use a valuation interest rate of **8% per year**, net of investment expense, as the main basis for this valuation. It must be noted, at the outset, that the valuation interest rates of the previous valuation and the current one are not very different in their overall impact on developing contribution requirements after allowing for the different manner in which administration expenses are treated.
- c. Results have also been provided using a 7% interest basis, to show the sensitivity of the results to this assumption.

**Salary Increases** - An allowance of 1.00% over and above inflation for merit and promotion has been made. The rate of salary increases used in this valuation is therefore 3.50% per year. The previous valuation used a salary increase rate of 4.00% per year.



**Pension Increases** - Future pensions have been assumed to increase at the rate of 2.5% per year, the same as the rate of inflation.

**Administration expense** – Total annual administration expenses for all the plans are approximately CI\$3.5 million currently. Of this, it is estimated that CI\$ 50,000 is attributable to administering the DB part of this plan.

**DC Annuity Conversion Factors** – At retirement of DC participants, the conversion of account balances to annuities is based on plan actuarial factors. This implies guarantee of interest and mortality rates that are implicit in the factors. It has been assumed that these factors will be changed periodically and that they will, overall, be cost neutral with respect to the actuarial valuations in the future. The current actuarial factors in use have been unchanged since inception but also use an interest rate of 8%.

#### 4.2 **Demographic Assumptions**

Except for mortality rates, the demographic assumptions have remained unchanged since the previous valuation. The most important of the demographic assumptions are as follows:

**Retirement Age** - The plan provides unreduced benefits from age 55 after completing one full parliamentarian 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 updated to reflect improvement using standard US mortality projection tables. The table used is described in Exhibit 4.

**Turnover** - The age-related turnover rates used in this valuation are shown in Exhibit 4. Turnover rates for this plan are particularly difficult to establish as they depend on election results.

### 5. **Actuarial Cost Method Used for Valuing the Benefits**

#### 5.1 **Assessing the Actuarial Position of the Fund as of January 1, 2011**

For the defined benefit section, the actuarial position of the Fund as of January 1, 2011 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, 2011.

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 the past service liability attributable to future pay increases.

For the defined contribution section, the past service liability is equal to the assets allocated to the defined contribution participants.

## 5.2 Assessing the Future Contribution Requirement

- 5.2.1 **For the DC participants**, future contributions are taken as 12% of pay for DC participants, all of it being allocated to participants' account balances. An extra contribution is required to finance death and disability benefits provided by the plan over and above the value of account balances. The cost of these benefits for the DC participants has been valued as a one-year term cost. This represents the estimated actuarial value of these benefits arising during the course of the year following the valuation date. This additional cost has been estimated to be 0.40% of pay for DC participants. The ongoing contribution requirement is thus 12.40% of pay.
- 5.2.2 **For the DB participants**, 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. It can be taken as the ongoing cost of the plan if past service liabilities were fully funded. In this valuation, the annual cost of administering the DB plan has also been added to the normal cost.
- 5.2.3 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 20- year amortization period** has been used in the past.



Exhibits 1A1 and 1A2 set out the results of the actuarial valuation on the basis outlined in Section III 5.1 above. **Exhibit 1A1** shows the results on the two interest base alternatives. **Exhibit 1A2** shows the results on the 2008 valuation basis and compares the results with the 2008 valuation

The most important items to note are as follows:

*Past Service Liability (No Projection of Pay)* - The first past service liability measurement, with no future pay projections, is shown in Item C. In Exhibit 1A1 it is equal to CI\$16.1million for the plan as a whole (DB and DC parts together) in the main 8% interest basis. This compares with Fund assets of CI\$3.8million. In the DC part, both the liabilities and assets are equal to the account balance. It should be noted that assets allocated to the DB part, CI\$3.7million, are insufficient to cover the past service liability for inactive participants in the DB part of CI\$13.1million.

*Past Service Liability (With Projection of Pay)* - The second past service liability measurement, with future pay projections, is shown in Item D. For the DB part, this is equal to CI\$16.7million using the main 8% interest basis. The resulting actuarial deficiency (shown as Item E) is **CI\$12.9million**, and it is this amount that forms the basis for developing the amortization costs. Item F.2 shows the extent to which this is covered by assets. This is **22%**.

If a 7.00% valuation interest rate is used, the actuarial deficiency increases to CI\$14.8 million and the asset coverage decreases to 20%.

Fig.IV.1 below shows the key extracts from these tables.

**Fig. IV.1 Position at Dec 31, 2010 - Key Results**  
(CI\$ millions)

	<b>DC Part</b>		<b>DB Part</b>		
	Dec-08	Dec-11	Dec-08	Dec-11	Dec-11
				<b>2008 Basis</b>	<b>2011 Basis</b>
Assets	-	0.1	4.7	3.7	3.7
Past Service Liability	-	0.1	19.4	18.5	16.6
(Actuarial Deficiency)	-	-	<b>(14.7)</b>	<b>(14.8)</b>	<b>(12.9)</b>
Asset Coverage %	N/A	100%	24%	20%	22%

As shown in Exhibit 1A2 and in the table above, the January 1, 2008 actuarial valuation had a deficiency of \$14.7million. With a 20-year amortization, the expected deficiency at January 1, 2011 using the 2008 valuation basis would have been \$13.6million had the actual experience during the intervening three years been exactly as expected and had the deficiency amortization payments been met. The actual actuarial deficiency of CI\$14.8million implies that an additional deficiency of \$1.2million has arisen since the prior valuation, mainly the result of contribution income being less than expected. Changing the actuarial basis for the 2011 valuation (8% valuation interest basis) has resulted in an actuarial gain of CI\$1.9million.



Exhibits 2A1 and 2A2 show the determination of the future contribution requirement for the plan as a whole based on the funding method adopted by the Board as described in Section III 5.2 using the actuarial bases described in Section III 4.1 and 4.2. **Exhibit 2A1** shows the results on the two interest bases (8% as the main valuation basis and 7% to show the sensitivity of the interest rate choice). **Exhibit 2A2** shows the results on the 2008 valuation basis and compares the results with the 2008 valuation.

The most important items to note are the following:

*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, and including the annual cost of benefit administration. This is shown in Item E of Exhibit 2A1 and is CI\$0.56million (36.47% of current pay of DB participants) for the DB part using the main 8% interest basis and CI\$0.05million (12.40% of current pay of DC participants) for the DC part, based on the January 1, 2011 pensionable payroll.

*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, 2011. As explained above, the amortization period adopted by the Board is 20 years. The total annual cost for the DB part is CI\$1.82 million (or 119.15% of pay) for the DB participants. The total annual cost for the DC participants is just the normal cost. The total annual cost for both plans for 2011 is \$1.87million, or 96.35% of the total combined DB and DC payroll.

The annual cost of administering the DB part has been included as a component of the normal cost. Investment management expenses have been implicitly taken into account in the determination of the valuation interest rate. In previous valuations, both investment management expenses and administration costs were allowed for as an adjustment to the rate of investment return.



1. The Fund continues to be severely underfunded. Assets allocated to the Plan cover only 22% of the past service obligations. The Plan's assets are also insufficient to cover the benefits currently in payment. Without any future contributions, the assets are sufficient to cover only 3 years of benefit payments.
2. For the DB part, the funding requirement in dollar amount has remained virtually unchanged between the January 1, 2008 and the January 1, 2011. The requirement, when expressed as a percentage of pensionable payroll for DB participants, has increased from 104.05% to 119.15% as a result of the reduced payroll of active DB participants.
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. In particular, an acceleration of retirements and consequent payment of lump sum commutations can lead to cash flow issues.
4. Many of the comments made with respect to the Actuarial Valuation of the Public Service Pension Plan also apply to this plan.



**Actuarial Position as of January 1, 2011 - Full Plan**

	<u>DC</u>	<u>Shown for Interest Sensitivity</u>		<u>Main Valuation Results</u>	
		<u>7% Interest Rate</u>	<u>7% Interest Rate</u>	<u>8% Interest Rate</u>	<u>8% Interest Rate</u>
		<u>DB</u>	<u>Total</u>	<u>DB</u>	<u>Total</u>
<b>A. Summary of Valuation Data</b>					
1. Number of participants currently receiving benefits	N/A	41	41	41	41
2. Number of participants with deferred vested benefits	-	5	5	5	5
3. Number of active participants	3	12	15	12	15
4. Total annual pensionable emoluments (CI\$000s)	416	1,530	1,946	1,530	1,946
<b>B. Value of Pension Fund Allocated Assets (CI\$000s)</b>					
	69	3,740	3,809	3,740	3,809
<b>C. Past Service Liability (No Projection of Pay)</b>					
1. Inactive participants (CI\$000s)	-	14,382	14,382	13,071	13,071
2. Active participants (CI\$000s)	69	3,353	3,422	2,933	3,002
3. Total (CI\$000s)	69	17,735	17,804	16,004	16,073
<b>D. Past Service Liability (With Projection of Pay)</b>					
1. Inactive participants (CI\$000s)	-	14,382	14,382	13,071	13,071
2. Active participants (CI\$000s)	69	4,121	4,190	3,582	3,651
3. Total (CI\$000s)	69	18,503	18,572	16,653	16,722
<b>E. Surplus/(Deficiency) (CI\$000)</b>					
(Item B less D3)	-	<b>(14,763)</b>	<b>(14,763)</b>	<b>(12,913)</b>	<b>(12,913)</b>
<b>F. Funding Level</b>					
1. PSL - No Pay Projection (Item B / Item C3)	100%	21%	21%	23%	24%
2. PSL - With Pay Projection (Item B / Item D3)	<b>100%</b>	<b>20%</b>	<b>21%</b>	<b>22%</b>	<b>23%</b>
<b>Assumptions</b>		<u>Shown for Interest Sensitivity</u>		<u>Main Valuation Results</u>	
Assumed Retirement Age		55 and 10yrs	55 and 10yrs	55 and 10yrs	55 and 10yrs
Discount Rate		7.00%	7.00%	8.00%	8.00%
Salary Increases		3.50%	3.50%	3.50%	3.50%
Pension Increases		2.50%	2.50%	2.50%	2.50%



**Actuarial Position as of January 1, 2011 - 2008 Actuarial Basis**

	January 1, 2008 Results		January 1, 2011 Results		
	DC	DB	DC	DB	Total
A. Summary of Valuation Data					
1. Number of participants currently receiving benefits	-	41	N/A	41	41
2. Number of participants with deferred vested benefits	-	1	-	5	5
3. Number of active participants	-	14	3	12	15
4. Total annual pensionable emoluments (CI\$000s)	-	1,751	416	1,530	1,946
B. Value of Pension Fund Allocated Assets (CI\$000s)	-	4,729	69	3,740	3,809
C. Past Service Liability (No Projection of Pay)					
1. Inactive participants (CI\$000s)	-	13,071	-	14,335	14,335
2. Active participants (CI\$000s)	-	5,563	69	3,282	3,351
3. Total (CI\$000s)	-	18,634	69	17,617	17,686
D. Past Service Liability (With Projection of Pay)					
1. Inactive participants (CI\$000s)	-	13,071	-	14,335	14,335
2. Active participants (CI\$000s)	-	6,363	69	4,157	4,226
3. Total (CI\$000s)	-	19,434	69	18,492	18,561
E. Surplus/(Deficiency) (CI\$000) (Item B less D3)	-	<b>(14,705)</b>	-	<b>(14,752)</b>	<b>(14,752)</b>
F. Funding Level					
1. PSL - No Pay Projection (Item B / Item C3)	N/A	25%	100%	21%	22%
2. PSL - With Pay Projection (Item B / Item D3)	N/A	<b>24%</b>	<b>100%</b>	<b>20%</b>	<b>21%</b>
<b>Assumptions</b>					
Assumed Retirement Age		55 and 10yrs		55 and 10yrs	
Discount Rate		7.00%		7.00%	7.00%
Salary Increases		4.00%		4.00%	4.00%
Pension Increases		2.50%		2.50%	2.50%



**Contribution Requirements - Full Plan**

	DC	Shown for Interest Sesity		Main Valuation Results	
		7% Interest Rate	7% Interest Rate	8% Interest Rate	8% Interest Rate
		DB	Total	DB	Total
A. Summary of Valuation Data					
1. Number of active participants	3	12	15	12	15
2. Total annual pensionable emoluments (CI\$000s)	416	1,530	1,946	1,530	1,946
B. Value of Pension Fund Allocated Assets (CI\$000s)	69	3,740	3,809	3,740	3,809
C. Past Service Liability (With Projection of Pay for DB)					
1. Inactive participants (CI\$000s)	-	14,382	14,382	13,071	13,071
2. Active participants (CI\$000s)	69	4,121	4,190	3,582	3,651
3. Total (CI\$000s)	69	18,503	18,572	16,653	16,722
D. Surplus/(Deficiency) (CI\$000s) (Item B less D3)	-	(14,763)	(14,763)	(12,913)	(12,913)

**Funding for DB Section: Normal Cost Plus 20-year Amortization of Past Service Liability**

E. Normal Cost for Year (CI\$000s)					
1. Benefit Provisions	1/ 52	569	621	508	560
2. Provision for Administrative Expenses	2/	50	50	50	50
3. Total		619	671	558	610
F. Item E.3. as % of Emoluments	12.40%	40.46%	34.48%	36.47%	31.35%
G. Amortization of Deficiency (over 20 years) (CI\$000s)	N/A	1,346	1,346	1,265	1,265
H. Item G as % of Emoluments	N/A	87.97%	69.17%	82.68%	65.01%
I. Total Annual Cost of Benefits (CI\$000s) (Items E+G +I)	52	1,965	2,017	1,823	1,875
J. Item I as % of Emoluments	12.40%	128.43%	103.65%	119.15%	96.35%

**Assumptions**

	Shown for Interest Sesity		Main Valuation Results		
Retirement Retirement		57	57	57	57
Discount Rate		7.00%	7.00%	8.00%	8.00%
Salary Increase Rate		3.50%	3.50%	3.50%	3.50%
Pension Increase Rate		2.50%	2.50%	2.50%	2.50%

1/ For DC participants: 12% plus additional 0.4% for defined benefit type risk benefits.

2/ For DC participants: administrative expenses are taken as reductions to the credited rates of return on account balances.



**Contribution Requirements - 2008 Actuarial Basis**

	<u>January 1, 2008 Results</u>		<u>January 1, 2011 Results</u>		
	<u>DC</u>	<u>DB</u>	<u>DC</u>	<u>DB</u>	<u>Total</u>
A. Summary of Valuation Data					
1. Number of active participants	-	14	3	12	15
2. Total annual pensionable emoluments (CI\$000s)	-	1,751	416	1,530	1,946
B. Value of Pension Fund Allocated Assets (CI\$000s)	-	4,729	69	3,740	3,809
C. Past Service Liability (With Projection of Pay for DB)					
1. Inactive participants (CI\$000s)	-	13,071	-	14,335	14,335
2. Active participants (CI\$000s)	-	6,363	69	4,157	4,226
3. Total (CI\$000s)	-	19,434	69	18,492	18,561
D. Surplus/(Deficiency) (CI\$000s) (Item B less D3)	-	(14,705)	-	(14,752)	(14,752)

**Funding for DB Section: Normal Cost Plus 20-year Amortization of Past Service Liability**

E. Normal Cost for Year (CI\$000s)	-	481	56	593	649	
F. Item F as % of Emoluments	1/	N/A	27.47%	13.46%	38.76%	33.35%
G. Amortization of Deficiency (over 20 years) (CI\$000s)		N/A	1,341	N/A	1,345	1,345
H. Item H as % of Emoluments		N/A	76.58%	N/A	87.91%	69.12%
I. Total Annual Cost of Benefits (CI\$000s) (Items E.+G.)		-	1,822	56	1,938	1,994
J. Item J as % of Emoluments		N/A	104.05%	13.46%	126.67%	102.47%
K. Plan Administration Cost	2/					

Assumptions

Retirement Retirement		55 and 10yrs		55 and 10yrs	55 and 10yrs
Discount Rate		7.00%		7.00%	7.00%
Salary Increase Rate		4.00%		4.00%	4.00%
Pension Increase Rate		2.50%		2.50%	2.50%

1/ 12% plus additional 1% for defined benefit type risk benefits for DC participants.

2/ Administration expenses included implicitly in the determination of total annual cost.



**Summary of Valuation Census Data****Active Participants - Defined Benefit**

Number of Active Participants		12
Average Age		50.50
Average Pensionable Service		6.50
Total Annual Pensionable Earnings	\$	1,530,180

**Active Participants - Defined Contribution**

Number of Active Participants		3
Average Age		57.98
Total Annual Pensionable Earnings	\$	416,100
Total Account Balance at December 31, 2010	\$	69,012

**Participants with Deferred Vested Benefits**

Number of Participants		5
Total Deferred Pensions (Annual)	\$	83,110

**Participants Currently Receiving Benefits**

Number of Participants	1/	41
Total Pensions Currently in Payment (Annual)	\$	1,192,718

1/ This includes the 3 DC participants who are currently receiving pensions under the Defined Benefit part.



## Actuarial Assumptions Employed

### A. Economic Assumptions

1. Underlying Inflation Rate: Long-term inflation rate of 2.5% per year.
2. Interest: 8% per year, net of investment expenses. Results at 7% are also shown in this report to illustrate sensitivity of the results towards this assumption.
3. Salary Increases: 3.5% per year, consisting of an allowance of 2.5% for inflation and 1.0% 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:

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, projected to the year 2011; sample rates are shown below:

<u>Age</u>	<u>Males</u>	<u>Females</u>
20	0.000393	0.000232
30	0.000792	0.000318
40	0.001006	0.000590
50	0.002036	0.001148
60	0.006519	0.004383
70	0.019735	0.013557
80	0.056221	0.037593
90	0.153611	0.118791



**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 for regular disability benefits. Calculations have shown that, under the provisions of the Plan, use of disability incidence and associated disability mortality rates are cost neutral to the Plan.

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:                                 | Public service employees are immediately eligible for participation in the Plan.   |
| 2. Credited Service:                            | Continuous service from date of hire.  |
| 3. Pensionable Earnings:                        | Full calendar month's basic salary paid to the participant.  |
| 4. Employee Contributions:                      | Employee contributions are currently pitched at a rate of 6% of pensionable earnings.  |
| 5. 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 parliamentarian term.   |
| 6A. Retirement Benefits – Defined Benefit Part: |  |
| a. Pension at Retirement -                      | A monthly pension equal to 1/360 times the number of completed months of pensionable service times the final month's Pensionable Earnings. The pension cannot exceed two-thirds of the highest salary earned by the participant. |
| b. Commutation -                                | Up to ¼ of the retirement pension can be commuted for a lump sum. The pension to lump sum conversions 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 increased, once a year. The Pensions Law (2004) calls for these pension increases 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.   |



## Principal Benefit Provisions (Continued)

### 6B. Retirement Benefits – Defined Contribution Part:

- a. Pension at Retirement - A monthly pension based on the accumulated account balance representing the accumulation of employee contributions, matching Government contributions and investment returns. The accumulated account balances are converted to annuities (3 different optional forms available) using actuarial conversion factors. These conversion factors have remained unchanged since the inception of the Defined Contribution Part.
- b. Commutation - Part of the accumulated account balance may be taken in cash, while the remainder must be taken as a pension.
- c. Pension Increases - Pensions in payment may be increased, once a year. The Pensions Law calls for these pension increases to match annual cost-of-living increases up to 5% and on a sliding scale thereafter.

### 7. Benefits on Death After Retirement or While Eligible to Retire:

*Defined Benefit Part only:* A spouse's pension equal to 50% of the pensioner's benefit, payable until remarriage.

A dependent children's pension payable up to age 18 (or age 23 if in full-time education) equal to 50% of the pension received by the participant, divided by the number of dependent children. These amounts are doubled if there is no spouse.

*Defined Contribution Part only:* the benefit is based on the choice elected by the participant at the time of retirement.

### 8. 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.

In addition, a pension is payable to an officer who is permanently injured in discharge of duty and who is not entitled to compensation under any Workmen's Compensation Law. The amount of the pension depends on the extent of disablement.



## **Principal Benefit Provisions (Continued)**

9. Benefits on Death in Service: *Defined Benefit Part only:* 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. An additional equivalent amount is divided equally among any children under the age of 18 or 23 (if in full-time education).
- Defined Contribution Part only:* Benefits payable to spouse and children equivalent in value to the participants account balances.
- Both Sections:*
- 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 month' Pensionable Earnings
  - (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.
10. Termination Benefits: An employee who terminates his employment can expect to receive a pension commencing at age 60, 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.
11. Other Benefits (Not Valued): None.

