

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

March 17, 2009



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The Public Service Pension Board (the "Board") has carried out, as required by the current Public Service Pension Law, an actuarial valuation of the main Public Service 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 Pensions (Amendment) Law, 1991 established the Public Service Pension Fund (the "Fund"), the purpose of which is to accumulate contributions, investment income and other payments accepted by the Public Service Pensions Board for the eventual payment of pensions and related benefits being paid out of the general revenue of the Islands. The Fund was established with effect from January 1, 1990 but no benefits could be paid out of it during the 1990s since the Fund was not capable of meeting the projected liabilities, after taking into account the contributions and earnings of the Fund. Benefit payments are now being met by the Fund.

The Public Service Pensions Law (1999), "the 1999 Law", amended and restated the prior pension law. The 1999 Law resulted in several changes to the pension provisions. A major change brought out by the 1999 Law is that the retirement benefits for new entrants are based on defined contribution principles, with both the Government and participants contributing at a rate of 6% of pensionable earnings for the accumulation of defined contribution account balances. The Public Service Pensions Law (2000), "the 2000 Law", and The Public Service Pensions Law (2004), "the 2004 Law", have made various amendments and revisions to the 1999 Law.

The valuation is to serve the following purposes, as specified in Section 12 of the 2004 Law:

1. to determine whether the Fund remains capable of meeting its liabilities for the following period of at least 40 years 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 *(This requirement has now been superseded by International Accounting Standards requirements that are outside the scope of this report.)*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 January 1, 2005 actuarial valuation established a required contribution, under the financing method adopted by the Board, of 40.53% of pensionable pay for Defined Benefit ("DB") participants for the plan as a whole, and 13% of pay for Defined Contribution ("DC") participants. Participating employers were provided their own individual assessment of how much the DB plan cost them. The DB contribution rates for all participating Statutory Authorities were significantly lower than 40.53% whereas for CI Government ("CIG") it was significantly more since CIG assumes the majority of the past service liabilities. The DC contribution rates were uniformly 13% for all participating employers.

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 1999 Law, as amended by the 2004 Law. It should be noted that the Parliamentarians (both active and inactive members) and the Judiciary, are not included in this report, but are covered in respective separate reports. Furthermore, the results of this valuation are not suitable for reporting under International Accounting Standards No. 19, for which separate actuarial valuations are prepared annually.



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 millions)	
<u>Defined Benefit ("DB")</u>		
Value of Pension Fund Allocated Assets	112.0	174.3
Past Service Liability (No Projection of Pay)	230.9	310.8
Past Service Liability (With Projection of Pay)	277.7	366.7
<i>Actuarial Deficiency</i>	<i>165.7</i>	<i>192.4</i>
 <u>Defined Contribution ("DC")</u>		
Assets = Liabilities	22.9	68.4
 <u>Total</u>		
Value of Pension Fund Allocated Assets	134.9	242.7
Past Service Liability (No Projection of Pay)	253.8	379.2
Past Service Liability (Projection of Pay)	300.6	435.0
 <u>Funded Ratio (Assets/PSL)</u>		
DB Plan only	40%	48%
DB and DC Plans together	45%	56%

2. Future Contribution Requirement

The contribution requirement for the DC participants is 13% of their payroll, or C\$17.0 million for the year commencing January 1, 2008.

The contribution requirement for the DB participants on the basis of normal cost plus amortization of actuarial deficiency over 20 years is C\$27.3 million for the year commencing January 1, 2008, or 44.90% of the payroll of the DB participants.

The total annual cost for 2008, based on active pensionable payroll as of January 1, 2008, is therefore estimated as C\$44.3 Million (or 23.11% of pay).



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 1,332 active DB participants receiving total annual pensionable emoluments of CI\$60.8 million, 3,313 active DC participants receiving total pensionable emoluments of CI\$130.9 million, 1,018 participants (DB and DC) currently receiving annual benefits of CI\$10.7 million, and 411 terminated DB participants and 1,158 terminated DC participants entitled to deferred vested benefits.

Exhibit 4 shows details of the census data used, as well as a breakdown between the different groups of participants.

2. Benefit Provisions

As of January 1, 2008, the legal document concerning the pension provisions is the Pension Law, which came into force on December 31, 1963, and subsequent amendments to it, in particular the 1999 Law, 2000 Law and 2004 Law. Exhibit 7 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 were made available by the Finance and Investment Department of the Board. A summary of this information is shown in Exhibit 5. Audited accounts for the period since the last valuation are not yet available. The Plan assets are combined with the assets of the Parliamentarians Pension 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 main Public Service pension plan was CI\$242.7 million as of January 1, 2008. The value of the assets attributable to DC participants was derived as the total of the participants' contribution account balances. The total assets pertaining to the DC participants was CI\$68.4 million, leaving a balance of CI\$174.3 million for the DB participants.



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, the assumptions have remained unchanged since the previous valuation. 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, based on long-term expectations and composition of the portfolio. This rate is net of investment and administration expenses.

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 - Future pensions have been assumed to 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. The most important of the demographic assumptions are as follows:

Retirement Age - The plan provides unreduced benefits from age 55 after completing 10 years of service. A recent analysis of retirement experience indicates that the average retirement age is close to 57. Therefore, age 57 has been selected as the assumed retirement age. Note that Police Officers are assumed to retire on completion of 21 years of service, if earlier.

Mortality - The mortality rates used in the prior valuation were left unchanged. The table used is described in Exhibit 6.

Turnover - At the prior valuation, an analysis was carried out of the turnover experience. This showed that experience was in line with the rates being used in the previous valuation. The age-related turnover rates used in this valuation are shown in Exhibit 6.



4. Actuarial Assumptions Used for Valuing the Plan (Continued)

4.2 Demographic Assumptions (Continued)

New Entrants – As part of this valuation, projections of cash flows and the Fund assets have been made and this requires making some assumptions about future participants. It has been assumed that a sufficient number of new entrants will enter the plan to replace the employees who retire, die or leave service to keep the number of active participants constant. The future new entrants have been assumed to have the same age and earnings profile as recent new participants to the plan. All new entrants are included under the DC part of the plan.

5. Actuarial Cost Method Used for Valuing the Benefits

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

For the defined benefit section, 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.

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



5. Actuarial Cost Method Used for Valuing the Benefits (Continued)

5.2 Assessing the Future Contribution Requirement

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

For the DC participants, future contributions are taken as 13% of pay, 12% of pay being allocated to participants' account balances with the additional 1% of pay being reserved to provide for certain risk-related defined benefit type provisions.

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. 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 1A sets out the results of the actuarial valuation on the basis outlined in Section 5.1 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 1A, and is equal to CI\$379.2million. This compares with Fund assets of CI\$242.7million. It should be noted that the past service liability for inactive members is CI\$155.2million, which is more than covered by 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\$435.0million. The resulting actuarial deficiency (shown as Item E) is CI\$192.3million, and it is this amount that forms the basis for developing the amortization costs.

The January 1, 2005 actuarial valuation had a deficiency of \$165.7million. With a 20-year amortization, the expected deficiency would have been \$152.9million had the actual experience during the intervening three years been exactly as expected. The actual actuarial deficiency of CI\$192.3million implies that an additional deficiency of \$39.5million has arisen since the prior valuation. Analyses show that this has been due to a number of factors, the main ones being as follows:



	CI\$ millions
Investment earnings greater than expected ^{1/}	-4.9
Salary increases, actual – expected ^{2/}	+19.7
Pension increases, actual – expected ^{3/}	+5.5
Other experience/data ^{4/}	+6.2
Loss on DC retirements ^{5/}	+0.2
Contributions received less than expected ^{6/}	+12.8
Total	39.5

- 1/ Actual investment earnings during the three-year period was 26.99%, compared to 22.50% expected.
- 2/ Salary increases were 19.7% for the group during three-year period, compared to 12.50% expected.
- 3/ Pension increases were 11.8% during three-year period, compared to 7.7% expected.
- 4/ This covers other experiences such as retirement, turnover, disability, death, and data discrepancies from the previous valuation.
- 5/ The DB and DC parts of the Plan are inter-related. When a DC participant retires, typically 75% of the account balance is converted to a monthly pension. Both the account balance and the pension obligation are transferred to the DB part. The current actuarial factors for converting account balances into pensions imply a subsidy from the DB part to the DC part.
- 6/ Some pre-2008 contributions were still outstanding as of January 1, 2008. A large part of this related to CIG paying at the overall plan rate rather than at the CIG-specific rate which was significantly higher. However, it was agreed subsequent to the tabling of the 2005 valuation that CIG would continue to pay at the overall plan rate until January 1, 2008.

6.2 Assessment of Future Contribution Requirements

Exhibit 2A shows the determination of the future contribution requirement for the plan as a whole 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 2A and is CI\$9.74 million (16.03% of current pay) for the DB participants and



CI\$17.02 million (13.00% of current pay) for the DC participants, based on the January 1, 2008 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, 2008. As explained above, the amortization period has been taken as 20 years. The total annual cost for the DB part is CI\$27.28 million (or 44.90% of pay) for the DB participants. The total annual cost for the DC participants is just the normal cost.

6.3 Actuarial Valuation Results Specific to each Participating Employer

Each participating employer's DB part costs will be different to the overall DB plan costs because of the variation of demographics among the various employers and also because a substantial portion of past service obligations have been allocated to CIG as a result of service prior to incorporation of most of the participating employers. Exhibit 1B sets out the actuarial position as of January 1, 2008 for each of these participating employers. Exhibit 2B sets out their contribution requirements as a result of participation in the DB part of the Plan. The contribution requirement of 13% of pensionable emoluments for participation in the DC part of the plan applies uniformly to all participating employers.

6.4 Fund Projections

Exhibits 3A through 3D show long-term projections of the active population age distribution, benefit payments, contributions, and fund assets. The introductory page of Exhibit 3 describes these projections and their implications.

Exhibit 3D also shows that the Fund should be capable of meeting its liabilities over the next 40-year period (one of the requirements of the Law) if the contribution rate developed in this valuation is adopted and the actuarial experience largely follows the assumptions used.

7. Conclusions and Recommendations

1. Although there has been an improvement in the funded ratio (Item F of Exhibit 1A), the Fund continues to be severely underfunded with respect to the benefit obligations in respect of service to date, with or without allowance for future pay increases, but allowing for future cost-of-living increases to pensions. It will continue to remain underfunded for the foreseeable future. However, the liability for inactive members, that is existing pensioners and beneficiaries and those with deferred pensions, is covered by available assets.
2. This report addresses the funding requirements of the plan as a whole and also provides separate assessments specific to each participating employer.
3. The funding requirement for the defined benefit part of the plan as a whole has increased from 40.53% (last valuation) to 44.90% of pensionable payroll. The increase is attributable to:



- a. The increase in the actuarial deficiency as explained in Section 6.1 of this report, and the consequent increase in the amortization payment.
 - b. The increase in the normal cost due to the ageing of the active membership.
4. The interest rate assumption is very crucial to the liability position and ongoing funding requirements. Consequently, continuous monitoring of investment performance and portfolio composition will be needed in order to ensure that investment rates of return and the actuarial valuation interest assumptions are aligned properly. Poor investment returns will also be directly detrimental to defined contribution participants. Exhibit 3D shows clearly the high sensitivity of projected fund levels to this assumption.
 5. Other important assumptions, such as salary increases, pension increases and retirement ages need to be continuously monitored to ensure that the assumptions utilized reflect the most probable experience going forward.
 6. Non-payment of contributions on time can affect the funding of the plan adversely and the Trustees and the PSPB should devise means to ensure that this is kept to a minimum.
 7. Pension amounts are expected to grow very rapidly over the next twenty years as the majority of the DB participants approach retirement ages (see Exhibit 3B). Cash flow can become an issue and the Investment Committee needs to take this into account in setting any long-term investment policy.
 8. There is considerable financial interaction between the DB and the DC parts of the Plan. Currently, there is a certain amount of subsidy flowing from the DB part to the DC part when a DC participant retires. This results from the use of actuarial conversion factors that were implemented some ten years ago and based on higher interest rates and heavier mortality rates than used currently for actuarial valuations. As more and more DC participants retire with larger account balances, this will become a bigger issue. The Plan's actuarial factors need to be reviewed. Furthermore, because the interest credits of the DC account balances are based on a three-year average of total fund returns, there is likely to be ongoing cross-subsidies between the DB and the DC parts. The current DB/DC plan structure and interactions need to be reviewed and examined thoroughly in order to conclude whether some of these features are still desirable.
 9. The timeline for tabling the actuarial valuations need to be accelerated in order to ensure that the contribution rates recommended by the latest actuarial valuations are implemented as quickly as possible.
 10. Because of the severity of the market downturn over the recent months and subsequent to the date of the valuation, the Trustees may want to consider having an actuarial valuation reassessment much sooner than the next due date as of January 1, 2011.



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

A handwritten signature in black ink that reads "S. Sundaresan". The signature is written in a cursive style and is underlined with a single horizontal line.

Subramanian Sundaresan, FIA, CCA, MAAA, ASA, EA
Actuary
Public Service Pensions Board

March 17, 2009



Actuarial Position as of January 1, 2008 - Full Plan

	<u>January 1 2005</u>	<u>January 1 2005</u>	<u>January 1 2005</u>	<u>January 1 2008</u>	<u>January 1 2008</u>	<u>January 1 2008</u>
	<u>DB</u>	<u>DC</u>	<u>Total</u>	<u>DB</u>	<u>DC</u>	<u>Total</u>
A. Summary of Valuation Data						
1. Number of participants currently receiving benefits	665	-	665	1,018	-	1,018
2. Number of participants with deferred vested benefits	372	706	1,078	411	1,158	1,569
3. Number of active participants	1,545	2,043	3,588	1,332	3,313	4,645
4. Total annual pensionable emoluments (CI\$)	60,924,756	74,121,600	135,046,356	60,751,426	130,890,352	191,641,778
B. Value of Pension Fund Allocated Assets (CI\$)	111,979,931	22,926,208	134,906,139	174,349,775	68,355,899	242,705,674
C. Past Service Liability (No Projection of Pay)						
1. Inactive participants (CI\$)	91,175,711	2,679,036	93,854,747	146,740,242	8,430,304	155,170,546
2. Active participants (CI\$)	139,757,912	20,247,172	160,005,084	164,071,041	59,925,595	223,996,636
3. Total (CI\$)	230,933,623	22,926,208	253,859,831	310,811,283	68,355,899	379,167,182
D. Past Service Liability (Projection of Pay)						
1. Inactive participants (CI\$)	91,175,711	2,679,036	93,854,747	146,740,242	8,430,304	155,170,546
2. Active participants (CI\$)	186,479,737	20,247,172	206,726,909	219,920,246	59,925,595	279,845,841
3. Total (CI\$)	277,655,448	22,926,208	300,581,656	366,660,488	68,355,899	435,016,387
E. Surplus/(Deficiency) (CI\$) (Item B less D3)	(165,675,517)	0	(165,675,517)	(192,310,713)	-	(192,310,713)
F. Funding Level						
1. PSL - No Pay Projection (Item B / Item C3)	48%	N/A	N/A	56%	N/A	N/A
2. PSL - With Pay Projection (Item B / Item D3)	40%	N/A	N/A	48%	N/A	N/A
Assumptions						
Assumed Retirement Age	57			57		
Discount Rate	7.00%			7.00%		
Salary Increases	4.00%			4.00%		
Pension Increases	2.50%			2.50%		



**Actuarial Position as of January 1, 2008 -
Defined Benefit Part Allocated to Participating
Employers**

	<u>Cayman Islands Airports Authority</u>	<u>Civil Aviation Authority</u>	<u>University College of Cayman Islands</u>	<u>CAYS Foundation</u>
A. Summary of Valuation Data				
1. Number of participants currently receiving benefits	-	-	-	-
2. Number of participants with deferred vested benefits	2	18	-	1
3. Number of current active participants	41	4	-	1
4. Total annual pensionable emoluments (CI\$)	2,099,473	437,977	-	62,160
B. Value of Pension Fund Allocated Assets (CI\$)	2,742,172	1,163,396	(478,366)	77,719
D. Past Service Liability (With Projection of Pay)				
1. Inactive participants (CI\$)	15,214	582,806	-	1,647
2. Currently active participants (CI\$)	5,384,260	1,426,313	-	65,589
3. Retained obligations of active participants transferred to another employer (CI\$)	1,315	13,589	-	-
4. Total (CI\$)	5,400,789	2,022,708	-	67,236
E. Surplus/(Deficiency) (CI\$) (Item B less D3)	(2,658,617)	(859,312)	(478,366)	10,483
F. Funding Level (Item B / Item D4)	51%	58%	N/A	116%



**Actuarial Position as of January 1, 2008 -
Defined Benefit Part Allocated to Participating
Employers**

	<u>Cayman Islands Develop- ment Bank</u>	<u>Electricity Regulatory Authority</u>	<u>Health Services Authority</u>	<u>National Housing Develop- ment Trust</u>
A. Summary of Valuation Data				
1. Number of participants currently receiving benefits	-	-	-	-
2. Number of participants with deferred vested benefits	-	-	18	-
3. Number of current active participants	-	-	143	1
4. Total annual pensionable emoluments (CI\$)	-	-	5,769,093	81,545
B. Value of Pension Fund Allocated Assets (CI\$)	(41,441)	-	5,555,944	56,924
D. Past Service Liability (With Projection of Pay)				
1. Inactive participants (CI\$)	-	-	114,027	-
2. Currently active participants (CI\$)	-	-	5,581,773	29,088
3. Retained obligations of active participants transferred to another employer (CI\$)	-	-	191,308	-
4. Total (CI\$)	-	-	5,887,108	29,088
E. Surplus/(Deficiency) (CI\$) (Item B less D3)	(41,441)	-	(331,164)	27,836
F. Funding Level (Item B / Item D4)	N/A		94%	196%



**Actuarial Position as of January 1, 2008 -
Defined Benefit Part Allocated to Participating
Employers**

	<u>Inform. And Comm. Tech, Authority</u>	<u>Cayman Islands Monetary Authority</u>	<u>Public Service Pensions Board</u>	<u>National Roads Authority</u>
A. Summary of Valuation Data				
1. Number of participants currently receiving benefits	-	-	-	-
2. Number of participants with deferred vested benefits	-	14	3	4
3. Number of current active participants	-	24	3	33
4. Total annual pensionable emoluments (CI\$)	-	1,707,009	310,968	874,804
B. Value of Pension Fund Allocated Assets (CI\$)	-	3,736,611	568,845	523,243
D. Past Service Liability (With Projection of Pay)				
1. Inactive participants (CI\$)	-	402,407	19,817	13,432
2. Currently active participants (CI\$)	-	1,871,810	290,083	403,424
3. Retained obligations of active participants transferred to another employer (CI\$)	-	68,248	26,820	-
4. Total (CI\$)	-	2,342,464	336,720	416,856
E. Surplus/(Deficiency) (CI\$) (Item B less D3)	-	1,394,147	232,125	106,387
F. Funding Level (Item B / Item D4)		160%	169%	126%



**Actuarial Position as of January 1, 2008 -
Defined Benefit Part Allocated to Participating
Employers**

	<u>Cayman Islands Turtle Farm</u>	<u>Water Authority</u>	<u>Maritime Authority of Cayman Islands</u>	<u>Cayman Islands Government</u>
A. Summary of Valuation Data				
1. Number of participants currently receiving benefits	-	-	-	1,018
2. Number of participants with deferred vested benefits	5	11	2	333
3. Number of current active participants	16	11	13	1,042
4. Total annual pensionable emoluments (CI\$)	634,657	588,681	988,547	47,196,512
B. Value of Pension Fund Allocated Assets (CI\$)	1,240,551	1,769,274	410,644	157,024,259
D. Past Service Liability (With Projection of Pay)				
1. Inactive participants (CI\$)	234,970	455,099	6,975	144,893,848
2. Currently active participants (CI\$)	1,391,824	1,676,996	294,476	177,137,521
3. Retained obligations of active participants transferred to another employer (CI\$)	-	-	-	24,065,810
4. Total (CI\$)	1,626,794	2,132,095	301,451	346,097,179
E. Surplus/(Deficiency) (CI\$) (Item B less D3)	(386,243)	(362,821)	109,193	(189,072,920)
F. Funding Level (Item B / Item D4)	76%	83%	136%	45%



Actuarial Valuation of the Public Service Pension Plan as of January 1, 2008

EXHIBIT 2A

Future Contribution Requirement - Full Plan

	<u>January 1 2005</u>	<u>January 1 2005</u>	<u>January 1 2005</u>	<u>January 1 2008</u>	<u>January 1 2008</u>	<u>January 1 2008</u>
	<u>DB</u>	<u>DC</u>	<u>Total</u>	<u>DB</u>	<u>DC</u>	<u>Total</u>
A. Summary of Valuation Data						
1. Number of active participants	1,545	2,043	3,588	1,332	3,313	4,645
2. Total annual pensionable emoluments (CI\$)	60,924,756	74,121,600	135,046,356	60,751,426	130,890,352	191,641,778
B. Value of Pension Fund Allocated Assets (CI\$)	111,979,931	22,926,208	134,906,139	174,349,775	68,355,899	242,705,674
C. Past Service Liability (With Projection of Pay for DB)						
1. Inactive participants (CI\$)	91,175,711	2,679,036	93,854,747	146,740,242	8,430,304	155,170,546
2. Active participants (CI\$)	186,479,737	20,247,172	206,726,909	219,920,246	59,925,595	279,845,841
3. Total (CI\$)	277,655,448	22,926,208	300,581,656	366,660,488	68,355,899	435,016,387
D. Surplus/(Deficiency) (CI\$) (Item B less D3)	(165,675,517)	0	(165,675,517)	(192,310,713)	-	(192,310,713)

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

E. Normal Cost for Year (CI\$)	9,567,000	9,635,800	19,202,800	9,738,000	17,016,000	26,754,000
F. Item F as % of Emoluments	15.70%	13.00%	14.22%	16.03%	13.00%	13.96%
G. Amortization of Deficiency (over 20 years) (CI\$)	15,127,000	N/A	15,127,000	17,539,000	N/A	17,539,000
H. Item H as % of Emoluments	24.83%	N/A	11.20%	28.87%	N/A	9.15%
I. Total Annual Cost of Benefits (CI\$) (Item F plus Item H)	24,694,000	9,635,800	34,329,800	27,277,000	17,016,000	44,293,000
J. Item J as % of Emoluments	40.53%	13.00%	25.42%	44.90%	13.00%	23.11%

Assumptions
 Age 57 Retirement
 7.0% Discount Rate
 4.0% Salary Increase
 2.5% Pension Increase



Future Contribution Requirements - Defined Benefit
Part Allocated to Participating Employers

	<u>Cayman Islands Airports Authority</u>	<u>Civil Aviation Authority</u>	<u>University College of Cayman Islands</u>	<u>CAYS Foundation</u>
A. Summary of Valuation Data				
1. Number of active participants	41	4	-	1
2. Total annual pensionable emoluments (CI\$)	2,099,473	437,977	-	62,160
B. Value of Pension Fund Allocated Assets (CI\$)	2,742,172	1,163,396	(478,366)	77,719
C. Past Service Liability (With Projection of Pay for DB)				
1. Inactive participants (CI\$)	15,214	582,806	-	1,647
2. Currently active participants (CI\$)	5,384,260	1,426,313	-	65,589
3. Retained obligations of active participants transferred to another employer (CI\$)	1,315	13,589	-	-
4. Total (CI\$)	5,400,789	2,022,708	-	67,236
D. Surplus/(Deficiency) (CI\$) (Item B less D3)	(2,658,617)	(859,312)	(478,366)	10,483

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

E. Normal Cost for Year (CI\$)	364,983	80,581	-	15,296
F. Item F as % of Emoluments	17.38%	18.40%	N/A	24.61%
G. Amortization of Deficiency (over 20 years) (CI\$)	242,468	78,370	43,627	(956)
H. Item H as % of Emoluments	11.55%	17.89%	N/A	-1.54%
I. Total Annual Cost of Benefits (CI\$) (Item F plus Item H)	607,451	158,951	43,627	14,340
J. Item J as % of Emoluments	28.93%	36.29%	N/A	23.07%



Future Contribution Requirements - Defined Benefit
Part Allocated to Participating Employers

	<u>Cayman</u> <u>Islands</u> <u>Develop-</u> <u>ment Bank</u>	<u>Electricity</u> <u>Regulatory</u> <u>Authority</u>	<u>Health</u> <u>Services</u> <u>Authority</u>	<u>National</u> <u>Housing</u> <u>Develop-</u> <u>ment Trust</u>
A. Summary of Valuation Data				
1. Number of active participants	-	-	143	1
2. Total annual pensionable emoluments (CI\$)	-	-	5,769,093	81,545
B. Value of Pension Fund Allocated Assets (CI\$)	(41,441)	-	5,555,944	56,924
C. Past Service Liability (With Projection of Pay for DB)				
1. Inactive participants (CI\$)	-	-	114,027	-
2. Currently active participants (CI\$)	-	-	5,581,773	29,088
3. Retained obligations of active participants transferred to another employer (CI\$)	-	-	191,308	-
4. Total (CI\$)	-	-	5,887,108	29,088
D. Surplus/(Deficiency) (CI\$) (Item B less D3)	(41,441)	-	(331,164)	27,836

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

E. Normal Cost for Year (CI\$)	-	-	1,023,804	15,631
F. Item F as % of Emoluments	N/A	N/A	17.75%	19.17%
G. Amortization of Deficiency (over 20 years) (CI\$)	3,779	-	30,202	(2,539)
H. Item H as % of Emoluments	N/A	N/A	0.52%	-3.11%
I. Total Annual Cost of Benefits (CI\$) (Item F plus Item H)	3,779	-	1,054,006	13,092
J. Item J as % of Emoluments	N/A	N/A	18.27%	16.05%



Future Contribution Requirements - Defined Benefit
Part Allocated to Participating Employers

	<u>Inform. And</u> <u>Comm.</u> <u>Tech,</u> <u>Authority</u>	<u>Cayman</u> <u>Islands</u> <u>Monetary</u> <u>Authority</u>	<u>Public</u> <u>Service</u> <u>Pensions</u> <u>Board</u>	<u>National</u> <u>Roads</u> <u>Authority</u>
A. Summary of Valuation Data				
1. Number of active participants	-	24	3	33
2. Total annual pensionable emoluments (CI\$)	-	1,707,009	310,968	874,804
B. Value of Pension Fund Allocated Assets (CI\$)	-	3,736,611	568,845	523,243
C. Past Service Liability (With Projection of Pay for DB)				
1. Inactive participants (CI\$)	-	402,407	19,817	13,432
2. Currently active participants (CI\$)	-	1,871,810	290,083	403,424
3. Retained obligations of active participants transferred to another employer (CI\$)	-	68,248	26,820	-
4. Total (CI\$)	-	2,342,464	336,720	416,856
D. Surplus/(Deficiency) (CI\$) (Item B less D3)	-	1,394,147	232,125	106,387

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

E. Normal Cost for Year (CI\$)	-	224,502	48,307	123,258
F. Item F as % of Emoluments	N/A	13.15%	15.53%	14.09%
G. Amortization of Deficiency (over 20 years) (CI\$)	-	(127,147)	(21,170)	(9,703)
H. Item H as % of Emoluments	N/A	-7.45%	-6.81%	-1.11%
I. Total Annual Cost of Benefits (CI\$) (Item F plus Item H)	-	97,355	27,137	113,555
J. Item J as % of Emoluments	N/A	5.70%	8.73%	12.98%



Future Contribution Requirements - Defined Benefit
Part Allocated to Participating Employers

	<u>Cayman Islands</u> <u>Turtle Farm</u>	<u>Water</u> <u>Authority</u>	<u>Maritime</u> <u>Authority of</u> <u>Cayman</u> <u>Islands</u>	<u>CIG</u>
A. Summary of Valuation Data				
1. Number of active participants	16	11	13	1,042
2. Total annual pensionable emoluments (CI\$)	634,657	588,681	988,547	47,196,512
B. Value of Pension Fund Allocated Assets (CI\$)	1,240,551	1,769,274	410,644	157,024,259
C. Past Service Liability (With Projection of Pay for DB)				
1. Inactive participants (CI\$)	234,970	455,099	6,975	144,893,848
2. Currently active participants (CI\$)	1,391,824	1,676,996	294,476	177,137,521
3. Retained obligations of active participants transferred to another employer (CI\$)	-	-	-	24,065,810
4. Total (CI\$)	1,626,794	2,132,095	301,451	346,097,179
D. Surplus/(Deficiency) (CI\$) (Item B less D3)	(386,243)	(362,821)	109,193	(189,072,920)

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

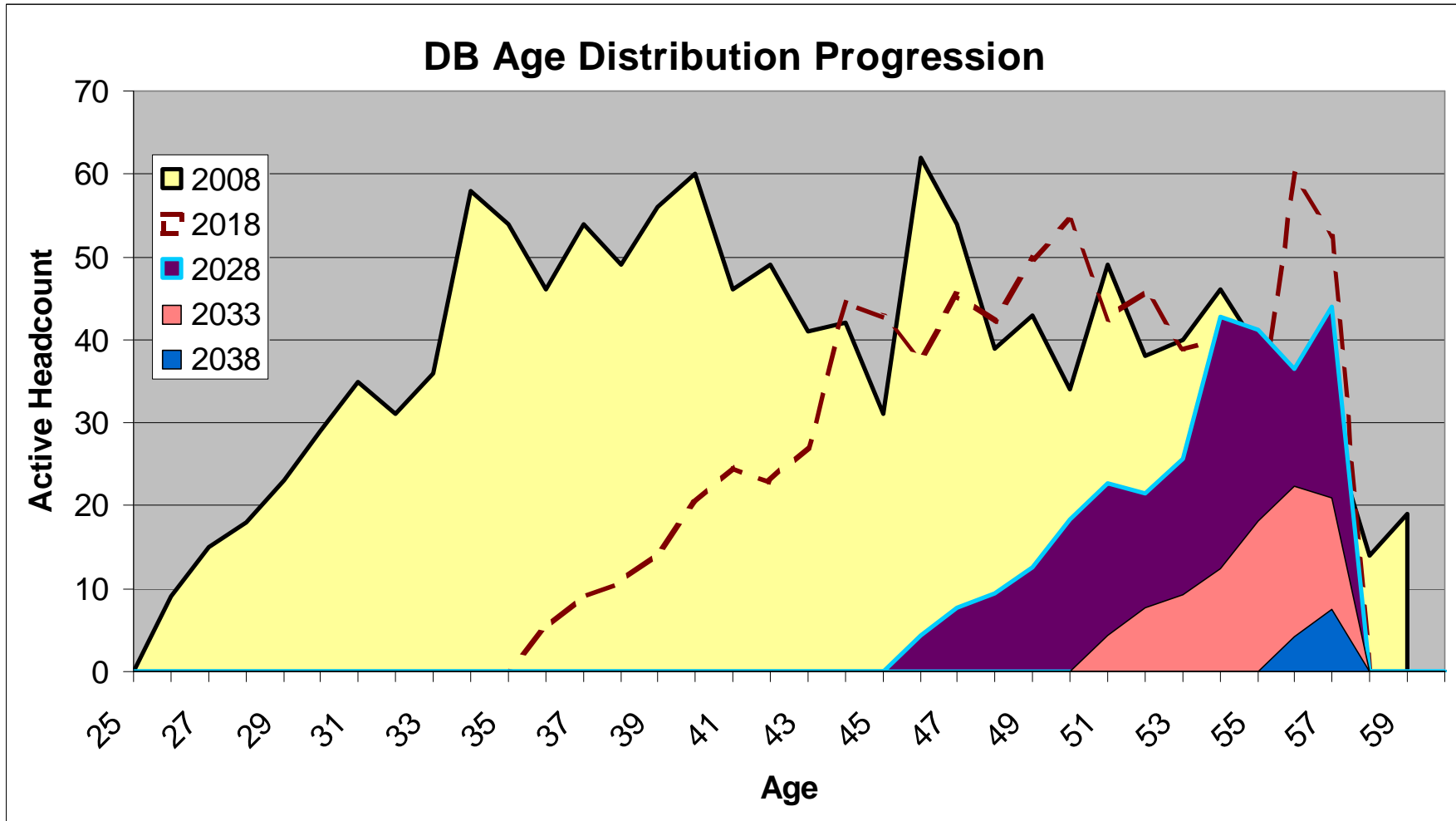
E. Normal Cost for Year (CI\$)	116,676	104,642	152,374	7,467,946
F. Item F as % of Emoluments	18.38%	17.78%	15.41%	15.82%
G. Amortization of Deficiency (over 20 years) (CI\$)	35,226	33,090	(9,959)	17,243,619
H. Item H as % of Emoluments	5.55%	5.62%	-1.01%	36.54%
I. Total Annual Cost of Benefits (CI\$) (Item F plus Item H)	151,902	137,732	142,415	24,711,565
J. Item J as % of Emoluments	23.93%	23.40%	14.41%	52.36%



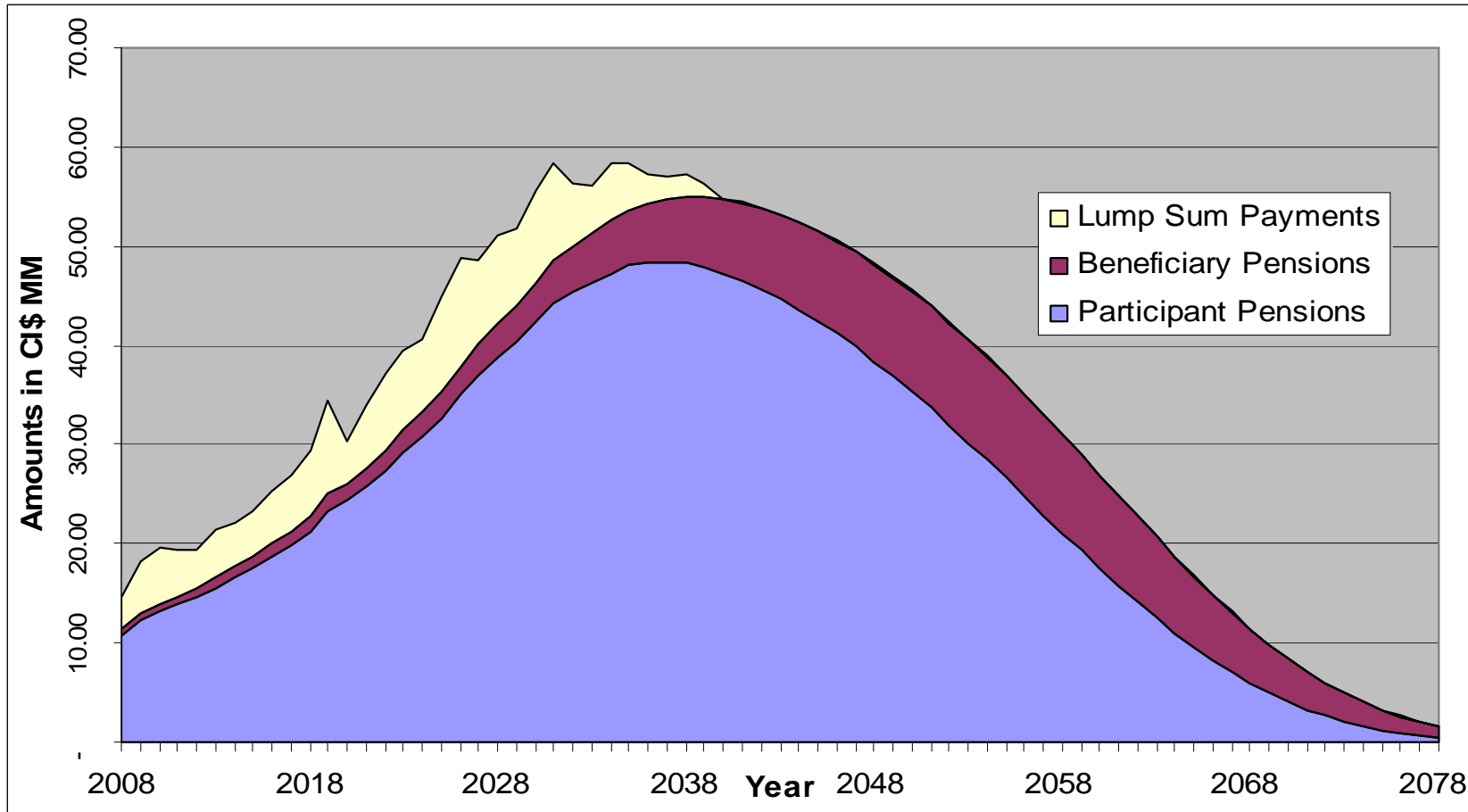
PROJECTIONS

EXHIBIT 3A	DB Age Distribution Progression	This graph shows the age distribution of active Defined Benefit participants as of January 1, 2008, and projects the distribution forward for the next 40 years. As the DB part of the plan is closed to new entrants, the number of active participants (as represented by the area under the graphs) is expected to diminish. By the year 2038, only a very small number of participants are expected to remain active if the current retirement patterns continue to prevail.
EXHIBIT 3B	Projection of Benefit Payments from the Defined Benefit Part	The projected benefit payments for the next 70 years are shown graphically and split according to retirement pensions, beneficiary pensions, and lump sum payments. A very significant increase can be expected in the amount of benefits to be paid over the course of the next 20 years. This will have implications for the investment policy as sufficient cash will need to be made available.
EXHIBIT 3C	Projection of Benefit Payments and Expected Contributions from the Defined Benefit Part	Here, a comparison is made between the expected benefit payments of Exhibit 3B and the expected contributions (normal cost plus amortization payments). If actual experience follows the actuarial assumptions and contributions are made in accordance with the requirements, benefit payments will not exceed incoming contributions until the year 2018.
EXHIBIT 3D	Projection of Defined Benefit Fund Assets	The Defined Benefit Fund Assets are projected over three different investment return scenarios: 6.50%, 7.00% and 7.50%. This graph illustrates the sensitivity of the Fund to investment returns.

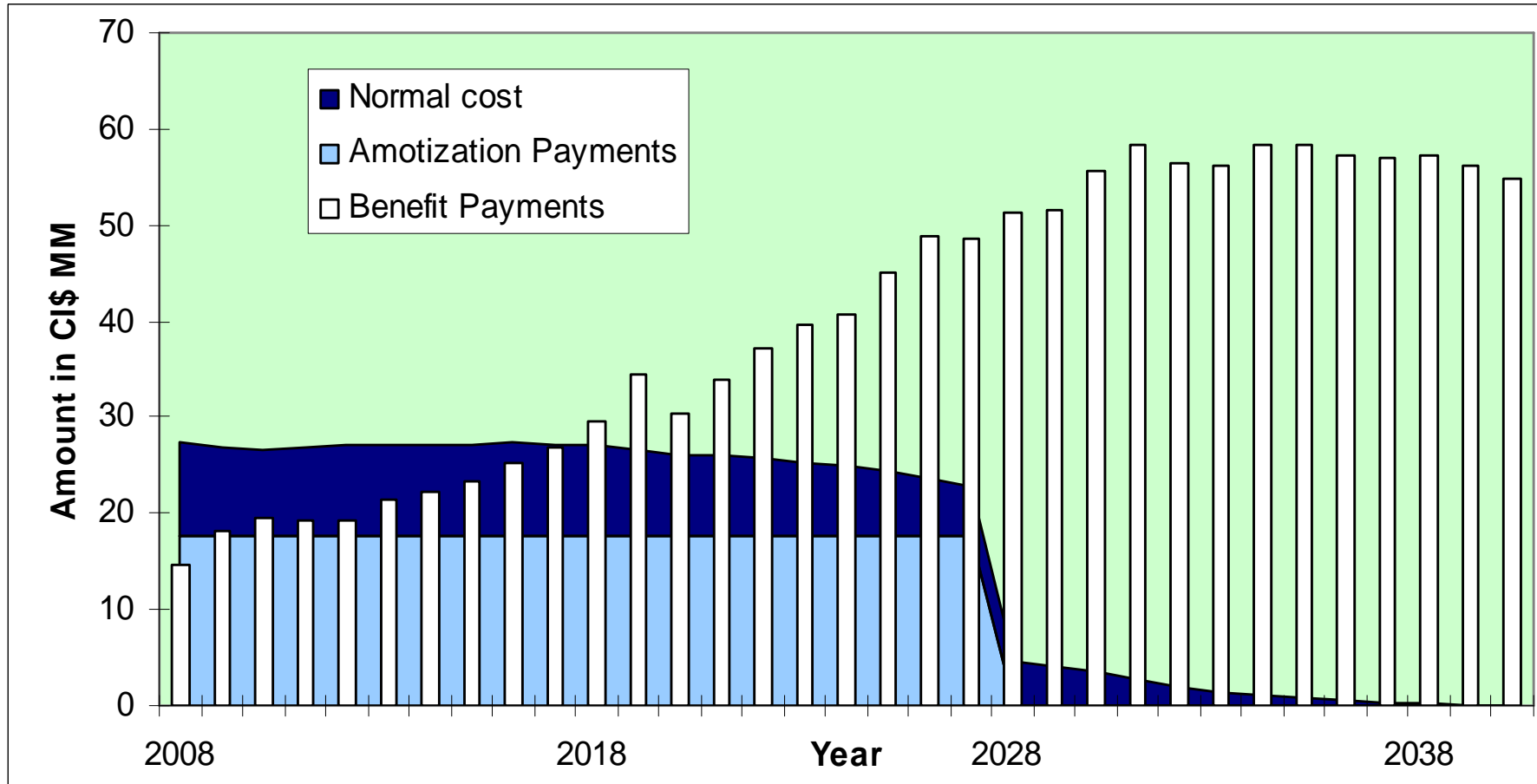




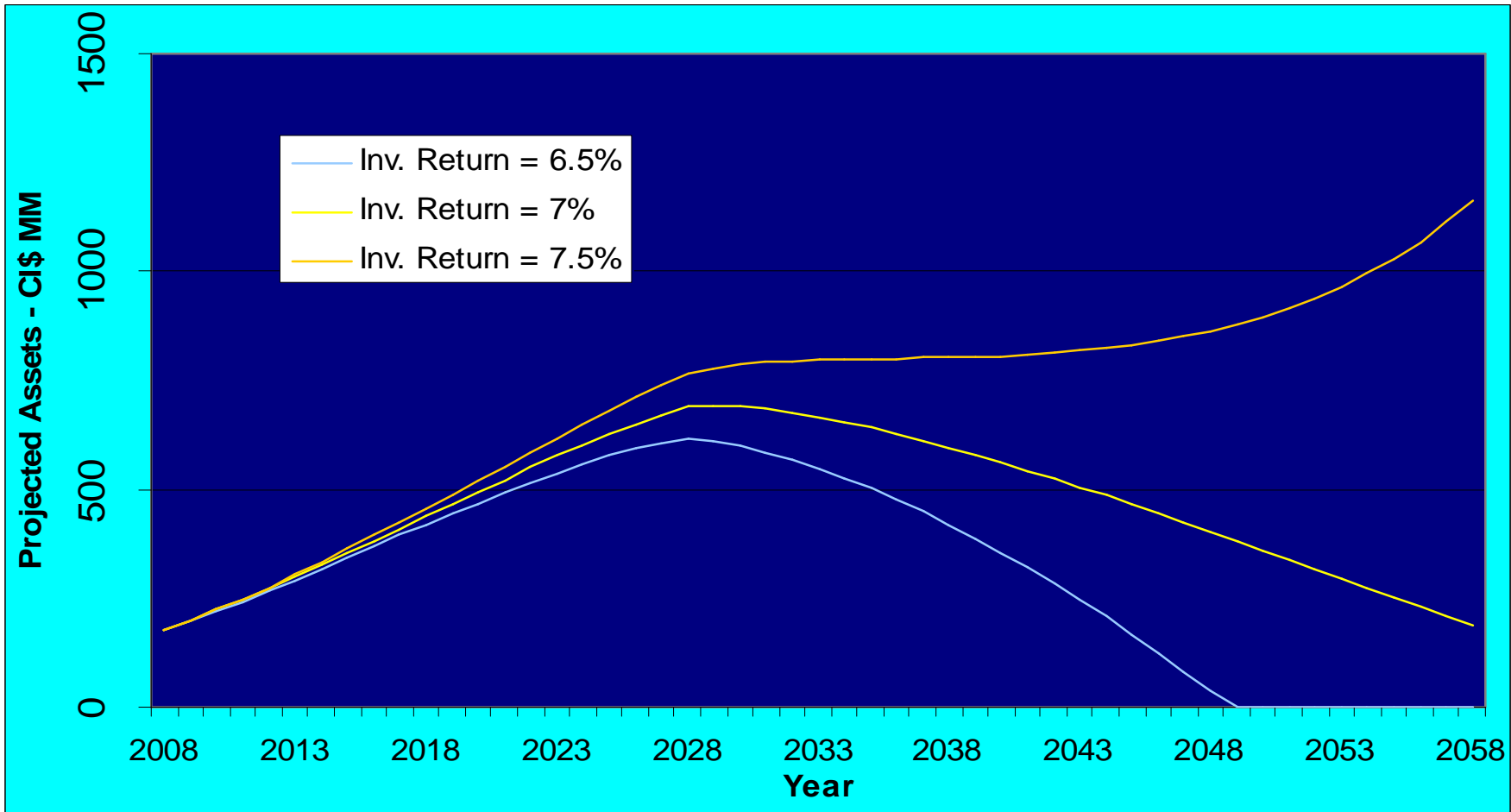
Projection of Benefit Payments from the Defined Benefit Part of the Plan



Projection of Benefit Payments and Contributions from the Defined Benefit Part of the Plan



Projection of Defined Benefit Fund Assets



PARTICIPANT DATA

	<u>Active Participants</u>				<u>Transferred Participants</u>			
	<u>Number</u>	<u>Total Annual Payroll (CI\$ '000)</u>	<u>Average Age (years)</u>	<u>Average Total Past Service (years)</u>	<u>Number</u>	<u>Total Annual Payroll (CI\$ '000)</u>	<u>Average Age (years)</u>	<u>Average Service (months) for Retained Benefits</u>
<u>Defined Benefit Part</u>								
Cayman Islands Airports Authority	41	2,099	42.95	13.83	1	45	37.00	3
Civil Aviation Authority	4	438	45.00	16.83	1	45	37.00	31
University College of Cayman Islands	-	-	-	-	-	-	-	-
CAYS Foundation	1	62	55.00	4.42	-	-	-	-
Cayman Islands Development Bank	-	-	-	-	-	-	-	-
Electricity Regulatory Authority	-	-	-	-	-	-	-	-
Health Services Authority	143	5,769	44.83	5.44	17	872	39.88	24
National Housing Development Trust	1	82	46.00	1.92	-	-	-	-
Inform. And Comm. Tech, Authority	-	-	0.00	-	-	-	-	-
Cayman Islands Monetary Authority	24	1,707	37.96	8.29	3	220	39.00	33
Public Service Pensions Board	3	311	41.33	6.14	1	71	50.00	19
National Roads Authority	33	875	40.24	3.36	-	-	-	-
Cayman Islands Turtle Farm	16	635	43.56	11.12	-	-	-	-
Water Authority	11	589	46.55	14.55	-	-	-	-
Maritime Authority of Cayman Islands	13	989	40.77	1.74	-	-	-	-
CIG	1,042	47,197	42.90	19.54	115	5,093	41.30	43
<u>Total</u>	<u>1,332</u>	<u>60,753</u>	<u>42.98</u>	<u>16.87</u>				
<i>Total Males</i>	607	27,271	42.27	17.31				
<i>Total Females</i>	725	33,480	43.58	16.50				
<u>Defined Contribution Part</u>								
<u>Total</u>	<u>3313</u>	<u>130,890</u>	<u>38.79</u>	<u>5.14</u>				
<i>Total Males</i>	1515	60,780	39.24	5.67				
<i>Total Females</i>	1798	70,110	38.41	4.70				



PARTICIPANT DATA – DB Inactives

Page 2

	<u>Number</u>	<u>Total Annual Accrued Benefit (CI\$ '000)</u>	<u>Average Age (years)</u>
<u>Terminated Vested Participants</u>			
Cayman Islands Airports Authority	2	4	
Civil Aviation Authority	18	116	
University College of Cayman Islands	2	3	
CAYS Foundation	1	-	
Cayman Islands Development Bank	-	-	
Electricity Regulatory Authority	-	-	
Health Services Authority	18	25	
National Housing Development Trust	-	-	
Inform. And Comm. Tech, Authority	-	-	
Cayman Islands Monetary Authority	14	111	
Public Service Pensions Board	3	7	
National Roads Authority	7	7	
Cayman Islands Turtle Farm	5	54	
Water Authority	11	96	
Maritime Authority of Cayman Islands	2	2	
CIG	328	1,625	
<u>Total</u>	<u>411</u>	<u>2,050</u>	<u>39.54</u>
<u>Retired Participants</u>	<u>870</u>	<u>9,996</u>	<u>65.45</u>
<u>Beneficiaries</u>	<u>148</u>	<u>662</u>	<u>54.97</u>



Consolidated Accounts for the Period January 1, 2005 to January 1, 2008

All amounts are in CI\$

	<u>Consolidated For All Plans</u>	<u>Public Service Pension Plan Allocation</u>	<u>Parliamentarians Pension Plan Allocation</u>	<u>Judiciary Pension Plan Allocation</u>
Net Assets Available for Benefits at Period Beginning	<u>137,224,429</u>	<u>134,906,139</u>	<u>1,427,602</u>	<u>890,687</u>
Adjustments				
Investment Income	57,693,849	54,916,531	2,428,914	374,910
Contributions				
Employees	33,041,557	32,576,686	307,634	157,237
Employers	33,020,099	32,555,228	307,634	157,237
Past Service and Additional Government Grant	39,121,747	38,395,676	362,812	363,259
Operation Grant	1,760,120	694,883	941,515	123,721
Other Income	859,513	842,675	11,734	5,104
	35,002	7,793	452	252
 (Benefits Paid)	 (48,726,096)	 (44,852,477)	 (3,750,544)	 (123,075)
 (Expenses of Administration)	 (7,498,781)	 (7,337,460)	 (113,072)	 (48,249)
 Net Increase in Assets	 109,307,010	 107,799,535	 497,078	 1,010,397
 Net Assets Available for Benefits at Period End	 <u>246,531,439</u>	 <u>242,705,674</u>	 <u>1,924,680</u>	 <u>1,901,085</u>



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 administrative 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:

- | | |
|---------------|---|
| 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 57 and 10 years of service. Police are assumed to retire upon eligibility for full benefits (completion of 21 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. Pensionable Service: Continuous service from date of hire.
 3. Pensionable Earnings: Pensionable Earnings include monthly basic salary, acting allowances, and duty allowances.

Under the Defined Benefit Part, the retirement pension computation is generally based on the monthly Pensionable Earnings at the time of retirement, unless there are transfers from one office to another, in which case the computation may be based on one-third of the aggregate pensionable earnings during the final three years.
 4. Employee Contributions: Employee contributions are currently pitched at a rate of 6% of pensionable earnings.
 5. Eligibility for Retirement Pension: Generally, on or after attaining age 50 and completing 10 years of service. There are special cases under which these conditions may be relaxed.
- 6A. Retirement Benefits – Defined Benefit Part:
- a. Pension at Retirement - A monthly pension equal to $1/720$ times the number of completed months of pensionable service times the final month's Pensionable Earnings. For officers first appointed to a pensionable office prior to July 10, 1980, the monthly pension is computed as $1/600$ 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 Pensionable Earnings received during the officer's service.
 - b. Commutation - Up to $1/4$ 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. At age 57, these factors call for a lump sum conversion rate equal to 14.59 times the annual pension surrendered.



Principal Benefit Provisions (Continued)

- c. Pension Increases - Pensions in payment may be increased, once a year. The Pensions Law (1999) calls for these pension increases to match annual cost-of-living increases up to 5% and on a sliding scale thereafter.
 - d. Early Retirement - Early retirement reduction factors apply to retirement pensions prior to completion of age 55 and 10 years of service. For deferred vested participants, early retirement reduction factors apply for pension commencement prior to age 60. Police officers are allowed to retire with full benefits after completing 21 years of service.
- 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.
 - 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 (1999) 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 of the pensioner’s benefit, Retirement or While Eligible to Retire:
- Defined Benefit Part only:* A spouse’s pension equal to 50% 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.



Principal Benefit Provisions (Continued)

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.
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).
- 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.
- Defined Contribution Part only:* Benefits payable to spouse and children equivalent in value to the participants account balances.
- Both Sections:* An additional pension is paid to the beneficiaries of participants killed as a result of injuries received while in the actual discharge of duty.
8. 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 or alternatively to receive the participant contribution account balance. 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.



Principal Benefit Provisions (Continued)

11. Other Benefits (Not Valued): Supplementary pensions on abolition of office and re-organization.

