

**Actuarial Valuation of the  
Judicial 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 Judiciary Pension Law, an actuarial valuation of the Judicial 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.

This Plan originally arose from the The Judges’ Emoluments and Allowance Law, 1997. The Judges’ Emoluments and Allowance Order, 2005 (“the 2005 Order”) came into effect on October 28, 2005, following a comprehensive review of the provisions and procedural arrangements. The 2005 Order incorporated features of the Plan that were not explicitly stated or defined in the prior legislation. It also specified certain administrative procedures, and has been developed in a format that is consistent with other public service pension plans in the Cayman Islands.

A key feature of the 2005 Order is that there is a Defined Benefit (“DB”) part and a Defined Contribution (“DC”) part. Only the three then existing participating judges (Justices Smellie, Levers and Henderson) were eligible for benefits defined under the Defined Benefit part. Justice Levers has now left; there remain only two active members under the Defined Benefit Part. Benefits for future participating judges will be provided through the Defined Contribution part. As of the current valuation date, there is one participant in the Defined Contribution part.


Throughout this report “the Plan” means the pension provisions as stated in the 2005 Order.

The purpose of this valuation is to quantify the liabilities of the Plan and determine the amounts required for funding, in accordance with the 2005 Order. 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.

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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April 12, 2012



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

	<u>January 1, 2008</u>	<u>January 1, 2011</u>
Value of Allocated Pension Fund Assets	1,901,085	2,735,361
Past Service Liability	1,880,028	2,287,923
<b>Actuarial Surplus</b>	<b>21,057</b>	<b>447,438</b>
Coverage Ratio (Assets/PSL)	101%	120%

**2. Future Contribution Requirement**

<u>DB Part</u>		
Annual Amount	235,054	46,037
Annual amount as a percentage of salary	<u>40.34%</u>	<u>10.76%</u>
<u>DC Part</u>		
2011 Annual Amount	-	58,311
Annual amount as a percentage of salary	-	<u>30.00%</u>

An overfunded situation has risen as a result of the actuarial gains resulting from one active participant terminating and contribution income in excess of expectations. Under the valuation bases used, the Defined Benefit Part of the plan can be supported by a future contribution rate of just over 10% of salaries (inclusive of participant contributions) per year until the two active participants retire. The contribution rate under the defined Contribution Part is 10% of salaries from participant and 20% of salaries from the Government.



**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 2 active DB participants and 1 active DC participants.

Exhibit 2 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 2005 Order. 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**

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 Parliamentarian Pension Plan. The figure below 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.

<b><u>Asset Allocations at Dec 31, 2010</u></b>		
<i>(CI\$ millions)</i>		
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 Judicial Pension Plan was CI\$2.990 million as of January 1, 2011. The value of the assets attributable to the sole DC participant was derived as the total of the participant's account balance. This total was CI\$111 thousand, leaving a balance of CI\$2.879 million for the DB part. An additional CI\$143,695.97 was deducted; this representing an amount due to be paid to Justice Levers on her departure, which was subsequently paid in February, 2011. A balance of CI\$2.735million was therefore available to fund the DB part of the Plan.



#### 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

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 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. No change to this assumption has been made for this plan.

**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.

**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.

##### 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** – Based on discussions with the two participants, it was assumed that Justice Smellie will retire upon attaining age 65 and that Justice Henderson will retire on June 30, 2012.

**Postretirement Mortality** - The mortality rates used in the prior valuation were updated to reflect improvements using standard US mortality projection tables. The table used is described in Exhibit 3.



**Turnover and Preretirement Mortality** - Due to the small number of members in this Plan and their ages, no assumption has been made for turnover or for mortality prior to retirement.

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

**5.1 The Defined Benefit Part**

**For the DB participants,** the on-going contribution requirement as of January 1, 2011 has been determined using an aggregate actuarial cost method in conjunction with assumptions outlined in the preceding section. Under this method, the present value of all projected benefits (for past and future service) is first reduced by the available assets. The resulting amount is spread over the working lifetime of each participant, as a fixed percentage of that participant's salary, in order to determine the annual cost. If actual future experience follows the actuarial assumptions used, the annual cost, expressed as a percentage of pay, would remain unchanged from year to year. The annual costs have been determined for the plan as a whole, and not individually by participant.

For determining the past service liabilities under the plan, the projected unit credit actuarial cost method has been used. The past service liability measurement includes projection of pay to retirement. This method is commonly used for measuring the funded status of the plan and for recognizing past service liabilities.

A surplus/(deficiency) arises when the available assets of the Fund are more/(less) than this projected past service liability under the projected unit credit actuarial cost method.

**5.2 The Defined Contribution Part**

**For the DC participants,** future contributions are taken as 30% of pay (representing 10% from participants and 20% from Government), all of it being allocated to participants' account balances.

For these participants, the past service liability is just the accrued account balance, which also represents the amount of assets allocated to them.



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

Exhibit 1 sets out the results of the actuarial valuation on the basis outlined in Sections 4 and 5 above, as well as the results from the previous valuation for comparison purposes.

Past Service Liability (With Projection of Pay) - This is shown in Item C of Exhibit 1. The total past service liability as of January 1, 2011 for the two participants is CI\$2,287,923. This compares with CI\$1,880,028 as of the last valuation. The increase in liability is principally due to the additional service accrual since the last valuation.

As of January 1, 2011, the Plan assets exceed the Past Service Liability by CI\$447,438, as shown in Item D of Exhibit 1. The surplus has resulted primarily from (i) the actuarial gain resulting from the departure of Justice Levers in 2010, and (ii) contributions received that were higher than anticipated.

In the Defined Contribution Part, both assets and past service liability are equal to the value of the participant's account balance.

**2. Assessment of Future Contribution Requirements**

Total Annual Cost - the annual contribution requirement, as a percentage of pensionable salaries and inclusive of participant contributions, is 10.76%, as shown in Item H of Exhibit 1 for the DB part and 30% for the DC part. The annual cost for the 2011 plan year, based on salaries as of January 1, 2011, is CI\$104,349 as shown in Item I of Exhibit 1.

In the DB part, the significant actuarial surplus has resulted in a very significant reduction in required contributions.





**Actuarial Valuation Results**

<i>Amounts in C1\$</i>	<u>January 1, 2008</u>	<u>January 1, 2011 Results</u>		
	<u>DB</u>	<u>DB</u>	<u>DC</u>	<u>Total</u>
A. Summary of Valuation Data				
1. Number of participants currently receiving benefits	0	0	0	0
2. Number of participants with deferred vested benefits	0	0	0	0
3. Number of active participants	3	2	1	3
4. Total annual Pensionable Salaries	582,681	427,806	194,372	622,178
B. Value of Allocated Assets	1,901,085	2,735,361	111,009	2,846,370
C. Past Service Liability (With Projection of Pay)	1,880,028	2,287,923	111,009	2,398,932
D. Surplus/(Deficiency) (Item B less Item C)	21,057	447,438	-	447,438
E. Past and Future Service Liability (With Projection of Pay)	2,984,234	2,919,390	N/A	N/A
F. Amount Required to be Funded in the Future (Item E less Item B)	1,083,149	184,029	N/A	N/A
G. Present Value of Future Pensionable Salaries	2,685,040	1,710,103	N/A	N/A
H. Annual Cost as a Percentage of Pensionable Salary	<u>40.34%</u>	<u>10.76%</u>	<u>30.00%</u>	<u>16.77%</u>
I. <u>Annual Cost for Year 2011</u>	<u>235,054</u>	<u>46,037</u>	<u>58,311</u>	<u>104,349</u>



**Summary of Valuation Data**

	<u>January 1, 2008</u>	<u>January 1, 2011</u>
<b><u>Active Participants - Defined Benefit</u></b>		
Number of Active Participants	3	2
Average Age	60.00	62.17
Average Pensionable Service	7.83	12.42
Total Annual Pensionable Earnings	\$ 582,681	\$ 427,806

**Active Participants - Defined Contribution**

Number of Active Participants	None	1
Average Age	N/A	60.11
Total Annual Pensionable Earnings	N/A	\$ 194,372
Total Account Balance at Valuation Date	N/A	\$ 111,009

**Participants with Deferred Vested Benefits**

Number of participants	None	None
------------------------	------	------

<b><u>Participants Currently Receiving Benefits</u></b>	1/	1/
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1/ Pension payments to one past retiree are being financed separately on a pay-as-you-go basis



## **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 investment and administrative expenses.   |
| 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: | Pre-retirement: none. |
|---------------|-----------------------|

Post-retirement: 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:           | None  |
| 3. Disability:         | No disability incident rates have been used.                                |
| 4. Retirement:         | Justice Smellie: Age 65<br>Justice Henderson: June 30, 2012                 |
| 5. Family Assumptions: | As provided in the data. Both active DB participants are currently married. |



## Principal Benefit Provisions

- |   |   |
|---|---|
| 1. Eligibility:                                 | Under the Defined Benefit Part, eligibility is restricted to Justice Smellie and Justice Henderson. Judges of the Grand Court are otherwise eligible to participate in the Defined Contribution Part.   |
| 2. Pensionable Service:                         | Continuous service as a Judge of the Grand Court.   |
| 3. Pensionable Earnings:                        | Annual base salary as Judge of the Grand Court.   |
| 4. Final Pensionable Earnings:                  | Average of pensionable earnings over the final 36 months prior to retirement, resignation, death or disability.   |
| 5. Participant Contributions:                   | Participant contributions are currently pitched at a rate of 10% of pensionable earnings.   |
| 6. Government Contributions:                    | DB Part: determined by actuarial valuations. DC Part: 20% of pensionable earnings.  |
| 7. Normal Retirement Age:                       | Age 65.   |
| 8. Eligibility for Retirement Pension:          | After eight years of judicial service and attaining Normal Retirement Age or after completing 20 years' of judicial service.  |
| 9A. Retirement Benefits – Defined Benefit Part: |   |
| a. Pension at Retirement -                      | A monthly pension equal to $\frac{1}{300}$ times the number of completed months of pensionable service times the final pensionable earnings. The pension cannot exceed $\frac{4}{5}$ ths of final pensionable earnings. For months of service prior to September 1997, the pension factor will be $\frac{1}{600}$ per month rather than $\frac{1}{300}$ per month. However, if the member repays all gratuities received during judicial service, then the pension factor for service prior to September 1997 will be the original $\frac{1}{300}$ per month. |
| b. Commutation -                                | Up to $\frac{1}{4}$ 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. This provision also applies to spouse's pension.  |
| c. Pension Increases -                          | Pensions in payment may be adjusted once a year to match annual cost-of-living increases up to 5% and on a sliding scale thereafter.  |



## Principal Benefit Provisions (Continued)

- d. Early Retirement - Allowed from age 55 subject to completing eight or more years of judicial service. For retirements prior to age 60, the benefits will be reduced in accordance with the Plan actuarial tables

9B. 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.

10. 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.

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.

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

11. 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)**

12. 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.

13. Resignation:

Prior to Completing Eight Years of Pensionable Service:

A lump sum payment (or a transfer to an approved plan) equal to sum of Participant and matching Government contributions with interest.

After Completing Eight Years of Pensionable Service:

- (a) receive a lump sum payment (or a transfer to an approved plan) of Participant and matching Government contributions with interest, or
- (b) have an entitlement to a deferred vested benefit payable upon reaching retirement eligibility, or
- (c) transfer to an approved plan, an amount equal to the greater of (a) above or the actuarial present value of (b) above.

