

## **PUERTO RICO TEACHERS RETIREMENT SYSTEM**

### **June 30, 2012 Actuarial Valuation Report**

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1550 Liberty Ridge Drive  
Suite 200  
Wayne, PA 19087-5572

Tel +1 610 687.5644  
Fax +1 610.687.4236

[www.milliman.com](http://www.milliman.com)

July 31, 2013

Mr. Héctor M. Mayol-Kaufmann  
Executive Director  
Puerto Rico Teachers Retirement System  
Capital Center Building  
#235 Arterial Hostos Ave.  
North Tower, 8<sup>th</sup> Floor  
Hato Rey, PR 00919

Dear Mr. Mayol-Kaufmann:

This report presents the results of the actuarial valuation of the Puerto Rico Teachers Retirement System (PRTRS) as of June 30, 2012. Section I contains highlights of the valuation including a general discussion and comments on the various schedules included in the report. The subsequent Sections contain schedules summarizing the underlying calculations, asset information, participant data, plan benefits and actuarial assumptions and methods.

### Purpose

The main purposes of this report are:

- to provide the Annual Required Contribution and Annual Pension Cost for the Fiscal Year ending June 30, 2013 based on relevant Statements of the Government Accounting Standards Board (GASB);
- to review the experience under the plan since the previous valuation;
- to present information pertaining to the operation of the plan for inclusion in financial statements; and
- to assess the relative funded position of the plan.

The use of this report for purposes other than those stated above may not be appropriate and should be reviewed with Milliman.

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The report was prepared solely to provide assistance to the Commonwealth of Puerto Rico Teachers Retirement System for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning PRTRS's operations, and uses PRTRS's data, which Milliman has not audited. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this report. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or other qualified professional when reviewing the Milliman report.

### Data Reliance

In performing this analysis, we relied on the census data, asset information, and other information (both written and oral) provided by the System. We have not audited or verified the census data, asset information, or other information. To the extent that any of these are inaccurate or incomplete, the results of this valuation may likewise be inaccurate or incomplete.

We did not audit the data used in our analysis, but did review it for reasonableness and consistency and have not found material defects in the data. It is possible that material defects in the data would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

### Future Measurements

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following:

- Plan experience differing from the actuarial assumptions;
- Future changes in the actuarial assumptions;
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as potential additional contribution requirements due to changes in the plan's funded status); and,
- Changes in the plan provisions or accounting standards.

Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such measurements.

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### Certification

We hereby certify that, to the best of our knowledge, this report is complete and accurate and all costs and liabilities were determined in conformance with generally accepted actuarial principles and practices which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting recommendations of the American Academy of Actuaries and are based on actuarial assumptions and methods adopted by the System. All of the actuarial assumptions were developed by Milliman in consultation with PRTRS. We believe that the actuarial assumptions and methods used in this actuarial valuation are reasonable for valuing the benefits provided under the plan.

Actuarial computations presented in this report are for purposes of fulfilling financial accounting requirements under the GASB Statements 25, 27, and 45. The calculations in the enclosed report have been made on a basis consistent with our understanding of the plan provisions described in Section VI of this report, and of the applicable GASB Statements. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

### Qualifications

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

We are members of the Society of Actuaries and meet the qualification standards of the American Academy of Actuaries to render this actuarial opinion.

Respectfully submitted,



By: Glenn D. Bowen, F.S.A.  
Member American Academy of Actuaries



Katherine A. Warren, F.S.A.  
Member American Academy of Actuaries

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

#### A. Summary of Principal Results of June 30, 2012 Actuarial Valuation (*\$ amounts in thousands*)

	Basic System Pension <u>Benefits only</u>	System Administered <u>Pension Benefits only</u>	GASB 25 & 27 Accounting (Basic System and System Administered <u>Pension Benefits</u> )	GASB 45 Accounting (Other Postemployment <u>Benefits</u> )
Present Value of Benefits <sup>1</sup>	\$14,750,872	\$665,365	\$15,416,237	\$954,431
Actuarial Accrued Liability	11,725,590	625,246	12,350,836	797,332
Actuarial Value of Assets	<u>2,099,563</u>	<u>0</u>	<u>2,099,563</u>	<u>0</u>
Unfunded Actuarial Accrued Liability	9,626,027	625,246	10,251,273	797,332
Employer Normal Cost as a percent of payroll	180,983 14.00%	4,606 0.35%	185,589 14.35%	14,385 1.11%
Annual Required Contribution (ARC) as a percent of payroll	698,378 54.01%	38,213 2.96%	736,591 56.97%	45,669 3.53%
Annual Pension / OPEB Cost as a percent of payroll	N/A N/A	N/A N/A	746,869 57.76%	45,295 3.50%
Employer Contributions ( <i>estimated</i> ) as a percent of payroll	135,901 10.51%	50,045 3.87%	185,946 14.38%	34,872 2.70%
Portion of ARC not covered ( <i>estimated</i> ) as a percent of payroll	562,477 43.50%	(11,832) (0.91)%	550,645 42.59%	10,797 0.83%

<sup>1</sup> A discussion of the benefits included in the respective Present Value of Benefits begins on page 4 of this section.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION I – SUMMARY**

	June 30, 2011 <u>Valuation</u>	June 30, 2012 <u>Valuation</u>
<b><i>GASB 25 &amp; 27 Accounting (\$ amounts in thousands)</i></b>		
Present Value of Benefits <sup>1</sup>	\$14,175,081	\$15,416,237
Actuarial Accrued Liability	11,448,609	12,350,836
Actuarial Value of Assets	<u>2,385,863</u>	<u>2,099,563</u>
Unfunded Actuarial Accrued Liability	9,062,746	10,251,273
Employer Normal Cost as a percent of payroll	162,187 12.28%	185,589 14.35%
Annual Required Contribution for upcoming fiscal year as a percent of payroll	659,334 49.93%	736,591 56.97%

<b><i>GASB 45 Accounting (\$ amounts in thousands)</i></b>		
Present Value of Benefits <sup>1</sup>	\$825,955	\$954,431
Actuarial Accrued Liability	706,069	797,332
Actuarial Value of Assets	<u>0</u>	<u>0</u>
Unfunded Actuarial Accrued Liability	706,069	797,332
Employer Normal Cost as a percent of payroll	11,674 0.88%	14,385 1.11%
Annual Required Contribution for upcoming fiscal year as a percent of payroll	41,069 3.11%	45,669 3.53%

<sup>1</sup> A discussion of the benefits included in the respective Present Value of Benefits begins on page 4 of this section.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION I – SUMMARY**

	June 30, 2011 <u>Valuation</u>	June 30, 2012 <u>Valuation</u>
<b><i>Participant Data</i></b>		
<u>Active Members</u>		
Number	43,402	42,707
Average Salary	\$30,423	\$30,275
Total Annual Salary	\$1,320,399,637	\$1,292,974,899
<u>Retirees</u>		
Number	30,431	31,370
Average Monthly Basic System Benefit	\$1,338	\$1,371
Average Monthly System Administered Benefit	\$69	\$66
<u>Disabled Members</u>		
Number	2,095	2,171
Average Monthly Basic System Benefit	\$448	\$475
Average Monthly System Administered Benefit	\$68	\$63
<u>Beneficiaries</u>		
Number	2,835	2,964
Average Monthly Basic System Benefit	\$379	\$390
Average Monthly System Administered Benefit	\$21	\$20
<u>Terminated Vested Members</u>		
Number	768	738
Average Monthly Basic System Benefit	\$749	\$736

Basic System Benefit and System Administered Benefit amounts shown above are for pension benefits, including minimum benefits and COLAs. Special Law "bonus" benefits are not reflected.

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

## SECTION I – SUMMARY

### **B. General Discussion**

#### Basic System Benefits

As summarized in Section VIII, the Puerto Rico Teachers Retirement System (PRTRS) provides benefits to members, or their beneficiaries, upon:

- Retirement
- Disability
- Vested withdrawal
- Death
- Nonvested withdrawal (return of contributions)
- Christmas bonus (\$150)

Annuity benefits are subject to a \$300 monthly minimum. The statutory funding requirement for these benefits for the 2012-2013 fiscal year totals 19.5% of payroll, comprising 9.0% member and 10.5% employer contributions. Statutory funding requirements in future years will increase under Law 114 (see page 7).

These benefits will be referred to as the “Basic System Benefits” throughout this report.

#### System Administered Benefits

Also summarized in Section VIII are benefits granted under a series of special laws that are administered by PRTRS, including:

- Additional minimum pension benefits
- Additional minimum death benefit
- Ad-hoc cost-of-living adjustments (COLAs)
- Medical insurance plan contribution
- Summer bonus
- Medication bonus
- Christmas bonus (\$450)

These benefits are funded on a pay-as-you-go basis from the General Fund of the Commonwealth of Puerto Rico and will be referred to as “System Administered Benefits” throughout this report. These benefits are not an obligation of the PRTRS assets.

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

## SECTION I – SUMMARY

### System Experience since Prior Valuation

The approximate actual rate of return since the prior valuation was 1.73% for 2011-2012. This significant asset loss served to decrease the System's unfunded actuarial accrued liability.

Our analysis of System experience from June 30, 2011 to June 30, 2012 resulted in a liability gain of \$74 million for Basic System Benefits (e.g. – the June 30, 2011 liability of \$10.84 billion was expected to increase to \$11.20 billion as of June 30, 2012, and instead increased to \$11.12 billion prior to the changes in assumptions made as of June 30, 2012).

Major sources of gains and losses are as follows:

1. \$5 million loss on new entrants
2. \$4 million loss on roughly 38 “pop-up” retirees who were not in the June 30, 2011 census data
3. \$90 million loss on roughly 1,400 active members who retired since the prior valuation
4. \$175 million gain due to salary increases less than expected among active members
5. \$2 million loss from all other sources.

Further discussion is warranted on Item 3.

For Item 3, the act of retiring from active status generates a liability loss for an individual member. Possible explanations for additional liability losses attributable to individual members include purchases of service (which are offset to some extent on the asset side by the member's purchase price), retirement incentives such as Law 70, and data clean-up that occurred during the benefit calculation process when the member retired.

### Changes in Assumptions since Prior Valuation

This valuation reflects a decrease in the interest rate assumption for GASB 25 & 27 purposes from 6.4% per year to 5.95% per year. The 5.95% assumption reflects the asset allocation for the non-loan portion of the portfolio that was adopted by the Board during November 2011 as shown below and Milliman's capital market assumptions as of June 30, 2012. In addition, the assumption reflects that loans to members comprise

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

approximately 15% of the portfolio and, as provided by the System, have an approximate return of 8.8%.

Asset Class	Target Allocation
Domestic Equity	25%
International Equity	10%
Fixed Income	55%
Cash	10%

This valuation also reflects a decrease in the interest rate assumption for GASB 45 purposes from 4.0% per year to 3.2% per year. The 3.2% assumption reflects Milliman's capital market assumptions as of June 30, 2012 and assumes that the Commonwealth's General Fund (the assets used to pay the GASB 45 benefits) is investment approximately in 50% cash and 50% short-term bonds.

In addition, the postretirement mortality assumption was revised based on an experience study covering the period from July 1, 2007 through June 30, 2012. The assumption was revised from plan specific mortality tables to rates based on standard industry mortality tables. For healthy lives, the postretirement mortality assumption was revised to 92% and 87% of the rates from the UP-1994 mortality table for males and females, respectively, projected on a generational basis using Scale AA. For disabled lives, the postretirement mortality assumption was revised to the UP-1994 mortality table for males and females.

The decrease in the interest rate assumption and the revised postretirement mortality assumption increased the Actuarial Accrued Liability as of June 30, 2012 for Basic System Benefits by \$0.61 billion, from \$11.12 billion to \$11.73 billion, or by 5.4%. The increase in the ARC for Basic System Benefits was \$37 million or 5.6%.

For GASB 25 and 27 accounting, the decrease in the interest rate assumption and the revised postretirement mortality assumption increased the Actuarial Accrued Liability as of June 30, 2012 by \$0.63 billion, from \$11.72 billion to \$12.35 billion, or by 5.4%. The increase in the ARC was \$38 million or 5.4%.

For GASB 45 accounting, the decrease in the interest rate assumption and the revised postretirement mortality assumption increased the Actuarial Accrued Liability as of June 30, 2012 by \$0.08 billion, from \$0.72 billion to \$0.80 billion, or by 11.4%. The increase in the ARC was \$3 million or 7.7%.

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

## SECTION I – SUMMARY

### Law 114

During the 2010-2011 fiscal year, Law 114 was enacted which increased employer contributions from the prior 8.5% of compensation to 9.5% of compensation effective July 1, 2011. For the next four fiscal years effective July 1, employer contributions will increase annually by 1%. For the next five fiscal years, employer contributions will increase annually by 1.25%, reaching an employer contribution rate of 19.75% effective July 1, 2020.

### GASB Accounting Information

Accounting results under Governmental Accounting Standards Board Statement No. 25, “*Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans*” (GASB 25), Statement No. 27, “*Accounting for Pensions by State and Local Governmental Employers*” (GASB 27), and Governmental Accounting Standards Board Statement No. 45, “*Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*” (GASB 45) are presented in two sections in this report as discussed below. In addition, as requested by PRTRS, we have separately determined the Annual Required Contribution based on GASB 25 and 27 rules for just the Basic System Benefits.

### Basic System Benefits Information

We have performed a June 30, 2012 actuarial valuation of the Basic System Benefits and have prepared accounting results for them based on GASB 25 and 27 rules.

The FY 2012-2013 ARC for the Basic System Benefits only based on GASB 25 and 27 rules would be \$698.4 million, which equals 54.01% of payroll. The ARC represents the portion of the cost of PRTRS’ Basic System Benefits that employers should pay in order for PRTRS to be actuarially funded in accordance with GASB’s required minimum parameters.; i.e., the ARC has been reduced to reflect the fact that active members contribute 9% of pay to the system. The employer portion of the statutory funding requirement, which is 10.5% of payroll for the 2012-2013 fiscal year, is less than the ARC by 43.50% of payroll, or \$562.5 million.

As shown in Subsection D of Section IV, PRTRS has Unfunded Actuarial Accrued Liabilities (UAAL) of \$9.6 billion on behalf of Basic System Benefits, which should be

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

amortized over a period not to exceed 30 years in accordance with GASB 25 and 27 rules. Based on the current statutory member and employer funding requirements, the UAAL is expected to grow indefinitely into the future instead of being amortized. Effectively, this means that the statutory member and employer contributions to PRTRS are not adequate to fund PRTRS' Basic System Benefits. ***Instead, PRTRS is being rapidly disfunded.***

#### GASB 25 and 27 Accounting Information

We have performed a June 30, 2012 actuarial valuation of the Basic System Benefits and the System Administered Benefits (excluding the Medical Insurance Plan Contribution) and have prepared accounting results under GASB 25 for the financial statements of the System and under GASB 27 for the Commonwealth of Puerto Rico's financial statements. No future ad-hoc COLAs are anticipated in these results.

The FY 2012-2013 ARC under GASB 25 and 27 is \$736.6 million, which equals 56.97% of payroll. This includes the Basic System Benefits and the System Administered Benefits (excluding the Medical Insurance Plan Contribution). The FY 2012-2013 APC under GASB 27 is \$746.9 million, which equals 57.76% of payroll.

As shown in Subsection B of Section V, the Unfunded Actuarial Accrued Liability on a GASB 25 and 27 basis is \$10.3 billion. Based on the current funding requirements, the UAAL is expected to grow indefinitely into the future. As discussed above, the statutory member and employer contributions to PRTRS are not adequate to fund PRTRS' Basic System Benefits. ***Instead, PRTRS is being rapidly disfunded.*** The System Administered Benefits are financed on a pay-as-you-go basis from the General Fund of the Commonwealth of Puerto Rico

#### GASB 45 Accounting Information

We have performed a June 30, 2012 actuarial valuation of the Medical Insurance Plan Contribution and have prepared accounting results for the Commonwealth of Puerto Rico's financial statements under GASB 45. (Note that the Medication Bonus has been included in the GASB 25 and 27 results as a Pension Benefit because members can receive the bonus without submitting documentation to substantiate medication expenses.)

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

The FY 2012-2013 ARC for the Medical Insurance Plan Contribution under GASB 45 is \$45.7 million, which equals 3.53% of payroll. The FY 2012-2013 Annual OPEB Cost under GASB 45 is \$45.3 million, which equals 3.50% of payroll.

There are no member or employer contributions on behalf of the Medical Insurance Plan Contribution. This benefit is financed on a pay-as-you-go basis from the General Fund of the Commonwealth of Puerto Rico. Since this is an Other Postemployment Benefit that is not funded in advance, the ARC for this benefit has been calculated based on an assumed investment return rate of 3.2%, instead of the 5.95% rate used for the Pension Benefits. As shown in Subsection B of Section VI, the Unfunded Actuarial Accrued Liability on a GASB 45 basis for this benefit is \$797 million.

#### Solvency Test for Basic System Benefits

Subsection A of Section III determines the solvency percentage for each membership group for the Basic System Benefits. The Actuarial Value of Assets was allocated to each membership group by first allocating based on the accumulated member contributions with interest. The remaining assets were then assigned first to retirees, disabled members, and beneficiaries, second to terminated members with rights to a deferred pension, and then to active members. As shown in Subsection A of Section III, the overall solvency percentage is 17.9%. For retirees, disabled members, and beneficiaries, the solvency percentage is 8.9%. Vested terminated members with rights to deferred pensions and active members have solvency percentages of 40.8% and 28.3%, respectively. The solvency percentage for former members due a refund of accumulated member contributions with interest is always 100.0% under this test.

Note there were insufficient assets to cover all of the benefit obligations attributable to retirees, disabled members, and beneficiaries. Therefore, the assets allocated to vested terminated members with the right to a deferred pension, active members and former members due a refund of their contributions are *solely* attributable to the accumulated value of their own contributions; no employer contributions are available to fund their benefit obligations based on this allocation procedure.

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

## SECTION I – SUMMARY

### Cash Flow Projection for Basic System Benefits

PRTRS is a relatively mature retirement system with a significant retiree population. Based on the current statutory funding requirements, the annual benefit payments and administrative expenses paid by the system are significantly larger than the member and employer contributions made to the system. Thus investment income and current assets must be used to cover this negative cash flow. As a result, system assets can be expected to decline since the negative cash flow exceeds expected investment income. PRTRS' liabilities for the Basic System Benefits will continue to increase significantly over time. Thus the funded status can be expected to decline over time based on the actuarial assumptions used to prepare this actuarial valuation.

The table shown in Subsection B of Section III provides a simplified illustration of the expected negative net cash flows over the next 10 years. Annual payroll growth of 3.5% is assumed, as future members are assumed to replace current members who terminate or retire. (Note, we did not attempt to include in the expected benefit payments any benefit payments attributable to new members in preparing this table. Members who join PRTRS in the future will generate some cash outflow during the next 10 years due to refunds of their contributions, death and disability benefits, and immediate annuities due to service purchases, etc. We expect that these amounts will be relatively modest and they have not been included in the results shown. Doing so would increase the expected negative net cash flow.)

Based on this estimate of future contributions and benefit payments, the PRTRS assets will be exhausted by the 2020-2021 fiscal year, assuming an annual 5.95% investment return. It is doubtful that assets will be available to meet benefit payments even to that date in light of the significant assets allocated to private equity, plan member loans, accounts receivables, and capital assets.

**While Law 114 increased employer contributions, we recommend that the statutory funding requirements be further increased in light of:**

- **the expected negative net cash flows;**
- **the forecast exhaustion of plan assets by 2020-2021; and,**
- **the Annual Required Contribution based on GASB 25 and 27.**

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

## SECTION I – SUMMARY

### **C. Discussion of Supporting Exhibits**

#### System Assets

Section II summarizes the plan assets taken into account in the preparation of the GASB 27 Employer Accounting results for PRTRS.

Subsection A summarizes the Market Value of Assets as of June 30, 2012, including the additional amounts due to the contribution receivables, if any.

Subsection B summarizes the reconciliation of the Market Value of Assets from June 30, 2011 to June 30, 2012.

Subsection C summarizes the development of the Actuarial Value of Assets as of June 30, 2012. The Actuarial Value of Assets is equal to the Market Value of Assets.

Subsection D develops an estimated rate of return on plan assets for the previous plan year. The estimated rate of return from June 30, 2011 to June 30, 2012 was 1.73% on the Market Value of Assets.

Subsection E summarizes the historical estimated rate of return on plan assets on a market value basis.

The asset information used for the valuation was taken from financial statements provided by PRTRS as of June 30, 2012.

#### Management Information

Section III presents additional information that has been derived from the valuation process and is illustrative of the expected future decline in funded status that is projected based upon our analysis of the valuation results.

Subsection A shows the allocation of assets to the liability for Basic System Benefits by membership group and determines the solvency percentage for each group. Please see Subsection B of Section I for a description of this determination.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

Subsection B shows a projected cash flow for the current fiscal year and the next ten fiscal years for Basic System Benefits. Please see Subsection B of Section I for a description of this projection.

#### Basic System Benefits Information

Section IV summarizes the Actuarial Accrued Liability and the development of the Annual Required Contribution for just the Basic System Benefits under GASB 25 and 27 for the fiscal year ending June 30, 2013 (please see Subsection B of Section I for a description of the benefits included in this valuation).

Subsection A summarizes the development of the Present Value of Benefits as of June 30, 2012.

Subsection B summarizes the development of the Actuarial Accrued Liability as of June 30, 2012.

Subsection C summarizes the development of the Employer Normal Cost. The Employer Normal Cost is the total normal cost under the Entry Age Normal Actuarial Cost Method increased by expected administrative expenses paid from the fund and reduced by expected member contributions.

Subsection D summarizes the development of the amortization payment of the Unfunded Actuarial Accrued Liability. The amortization period used to calculate the ARC is a closed 30 years from June 30, 2007 (25 years remain as of June 30, 2012) with annual payments increasing each year by 3.5% to remain as a level percent of payroll.

Subsection E summarizes the development of the Annual Required Contribution (ARC). The ARC is the sum of the employer normal cost and the amortization payments, adjusted to mid-year to reflect that payments are made throughout the year.

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

## SECTION I – SUMMARY

### GASB 25 and 27 Accounting Information

Section V summarizes the Actuarial Accrued Liability and the development of the Annual Required Contribution and Annual Pension Cost under GASB 25 and 27 for the fiscal year ending June 30, 2013 (please see Subsection B of Section I for a description of the benefits included in these valuation results). Results are shown in total for GASB 25 and 27, with the Actuarial Accrued Liability and Employer Normal Cost presented for the underlying Basic System Benefits and for the underlying System Administered Benefits that are included in this valuation.

Subsection A summarizes the development of the Actuarial Accrued Liability as of June 30, 2012 and Employer Normal Cost as of December 31, 2012.

Subsection B summarizes the development of the amortization payment of the Unfunded Actuarial Accrued Liability. The amortization period used to calculate the ARC is a closed 30 years from June 30, 2007 (25 years remain as of June 30, 2012) with annual payments increasing each year by 3.5% to remain as a level percent of payroll.

Subsection C summarizes the development of the Annual Required Contribution (ARC). The ARC is the sum of the employer normal cost and the amortization payments, adjusted to mid-year to reflect that payments are made throughout the year.

Subsection D summarizes the development of the Net Pension Obligation (NPO) as of June 30, 2012. The NPO is defined as the cumulative difference between the Annual Pension Cost (APC) and the employer's contribution to the plan, including any pension liability (asset) at transition.

Subsection E summarizes the development of the APC for the fiscal year ending June 30, 2013. The APC is the amount recognized in the employer's financial statements as the cost of the pension plan and is determined in accordance with GASB Statement No. 27. The APC is equal to the ARC plus interest on the NPO, if any, as of June 30, 2012 less an amortization of this NPO.

Subsection F shows a seven-year history of the ARC, APC, and the percentage contributed. This schedule is required by GASB Statements No. 25 and 27. The FY 2012-2013 contribution percentage assumes that the employer contributions for Basic System Benefits will be at the statutory level of 10.5% of payroll and include anticipated

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## **PUERTO RICO TEACHERS RETIREMENT SYSTEM**

### **SECTION I – SUMMARY**

early retirement incentive contributions and that employer contributions for the applicable System Administered Benefits will be the anticipated pay-as-you-go payments.

Subsection G shows a six-year history of the funding progress of the plan. This schedule is required by GASB Statements No. 25 and 27.

Schedule H summarizes information used to determine the Annual Required Contribution for the fiscal year ending June 30, 2013.

#### **GASB 45 Accounting Information**

Section VI summarizes the Actuarial Accrued Liability and the development of the Annual Required Contribution for the fiscal year ending June 30, 2013 for the Medical Insurance Plan Contribution.

Subsection A summarizes the development of the Actuarial Accrued Liability as of June 30, 2012 and Employer Normal Cost as of December 31, 2012.

Subsection B summarizes the development of the amortization payment of the Unfunded Actuarial Accrued liability. The amortization period used to calculate the ARC is a closed 30 years from June 30, 2007 (25 years remain as of June 30, 2012) with annual payments increasing each year by 3.5% to remain as a level percent of payroll.

Subsection C summarizes the development of the Annual Required Contribution (ARC). The ARC is the sum of the employer normal cost and the amortization payments, adjusted to mid-year to reflect that payments are made throughout the year.

Subsection D summarizes the development of the Net OPEB Obligation (NOO) as of June 30, 2012. The NPO is defined as the cumulative difference between the Annual OPEB Cost (AOC) and the employer's contribution to the plan since the adoption of GASB 45.

Subsection E summarizes the development of the AOC for the fiscal year ending June 30, 2013. The AOC is the amount recognized in the employer's financial statements as the cost of other postemployment benefits and is determined in accordance with GASB Statement No. 45. The AOC is equal to the ARC plus interest on the NOO, if any, as of June 30, 2012 less an amortization of this NOO.

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## **PUERTO RICO TEACHERS RETIREMENT SYSTEM**

### **SECTION I – SUMMARY**

Subsection F shows a six-year history of the ARC, AOC, and the percentage contributed. This schedule is required by GASB Statements No. 45. The FY 2012-2013 contribution percentage assumes that employer contributions for the Medical Insurance Plan Contribution will be the anticipated pay-as-you-go payments.

Subsection G shows a six-year history of the funding progress of the plan. This schedule is required by GASB Statements No. 45.

Schedule H summarizes information used to determine the Annual Required Contribution for the fiscal year ending June 30, 2013.

#### **Census Data**

Section VII summarizes the census data provided by the System and utilized in the preparation of the actuarial valuation. Subsection A provides a reconciliation of the current year participant counts from the prior valuation. Subsection B presents a profile of active participants, summarized by gender and age and service groups. Subsections C, D, E, and F show the number and average benefit of the terminated vested participants, retirees, disabled members, and beneficiaries, respectively. Special data adjustments are discussed in Section IX.

#### **Summary of Principal Plan Provisions**

Section VIII summarizes the principal plan provisions as of the valuation date and denotes any changes from the previous valuation.

#### **Actuarial Assumptions and Methods**

Sections IX and X summarize the actuarial assumptions and methods that were utilized in the preparation of this actuarial valuation and denote any changes from the previous valuation.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION II - SYSTEM ASSETS

#### A. Market Value of Assets as of June 30, 2012

1. Assets	
Cash	\$ 357,874,000
Corporate and Government Bonds	800,237,000
Stocks	612,458,000
Private Equity Investments	19,221,000
Total Loans to Plan Members	403,812,000
Accounts Receivable	142,269,000
Capital Assets	20,885,000
Other Assets	<u>832,000</u>
Total	\$ 2,357,588,000
2. Total Liabilities	\$ 258,025,000
3. Market Value of Assets as of June 30, 2012: (1) - (2)	\$ 2,099,563,000

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION II - SYSTEM ASSETS

#### **B. Reconciliation of Market Value of Assets from June 30, 2011 to June 30, 2012**

1. Market Value of Assets as of June 30, 2011	\$	2,385,863,000
2. Additions		
a. Contributions		
Member Contributions	\$	121,773,000
Employer Contributions		123,614,000
Transfers In		1,476,000
Special		<u>53,405,000</u>
Total Contributions	\$	300,268,000
b. Investment Income		
Interest Income	\$	56,306,000
Dividends Income		4,342,000
Net Appreciation of Investments		(20,134,000)
Other Income		1,257,000
Investment Related Expenses		<u>(3,361,000)</u>
Net Investment Income	\$	38,410,000
Total Additions	\$	338,678,000
3. Decreases		
Refund of Member Contributions	\$	5,220,000
Annuities and Death Benefits		570,007,000
Special Benefits		26,440,000
Administrative Expenses		<u>23,311,000</u>
Total	\$	624,978,000
4. Net Increase (Decrease) in Market Value of Assets	\$	(286,300,000)
5. Market Value of Assets as of June 30, 2012	\$	2,099,563,000

#### **C. Development of Actuarial Value of Assets as of June 30, 2012**

The Actuarial Value of Assets as of June 30, 2012 is equal to the Market Value of Assets as of June 30, 2012 of \$2,099,563,000.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION II - SYSTEM ASSETS**

**D. Estimated Annual Rate of Return for year ending June 30, 2012**

	<u>Market Value</u>
1. Value of Assets as of June 30, 2011	\$ 2,385,863,000
2. Total Contributions	300,268,000
3. Benefit Payments and Expenses	624,978,000
4. Value of Assets as of June 30, 2012	2,099,563,000
5. Non-Investment Increment: (2) - (3)	(324,710,000)
6. Investment Increment: (4) - (1) - (5)	38,410,000
7. Time Weighted Value: (1) +.5 * (5)	2,223,508,000
8. Estimated Annual Rate of Return: (6) / (7)	1.73%

**E. Estimated Historical Rates of Return**

<u>Plan Year Ending</u>	<u>Market Value</u>
June 30, 2012	1.73%
June 30, 2011	23.37%
June 30, 2010	15.89%
June 30, 2009	-16.38%
June 30, 2008	-6.45%
5-year Compounded Annual Return	2.62%

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION III - MANAGEMENT INFORMATION

#### A. Allocation of Assets for Basic System Benefits to Membership Group

Membership Group	Actuarial Accrued Liability	Allocated Assets *	Solvency Percentage
1. Retirees, Disabled Members, and Beneficiaries	\$6,410,643,790	\$ 573,072,266	8.9%
2. Vested Terminated Members	57,435,457	23,434,658	40.8%
3. Active Members	5,233,647,736	1,479,193,507	28.3%
4. Former Members due a refund of contributions	<u>23,862,569</u>	<u>23,862,569</u>	<u>100.0%</u>
5. Total	\$11,725,589,552	\$ 2,099,563,000	17.9%

\* Allocated assets are determined by first assigning the accumulated member contributions with interest to each membership category. Remaining assets are then allocated first to retirees, disabled members, and beneficiaries, second to vested terminated members, and the rest to active members.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION III - MANAGEMENT INFORMATION**

**B. Projected Cash Flows for Basic System Benefits (Simplified Illustration)**

<u>Plan Year Ending</u>	<u>Estimated Payroll</u>	<u>Estimated Member and Employer Contributions</u>	<u>Estimated Benefit Payments and Administrative Expenses</u>	<u>Net Cash Flow</u>	<u>Estimated Net Plan Assets at Year-End</u>
06/30/2013	1,292,975,000	252,269,000	586,773,000	(334,504,000)	1,880,175,000
06/30/2014	1,338,229,000	274,475,000	605,865,000	(331,390,000)	1,650,939,000
06/30/2015	1,385,067,000	297,928,000	627,225,000	(329,297,000)	1,410,218,000
06/30/2016	1,433,544,000	322,683,000	650,998,000	(328,315,000)	1,156,185,000
06/30/2017	1,483,718,000	352,514,000	676,799,000	(324,285,000)	891,185,000
06/30/2018	1,535,649,000	384,037,000	704,665,000	(320,628,000)	614,181,000
06/30/2019	1,589,396,000	417,341,000	734,881,000	(317,540,000)	323,875,000
06/30/2020	1,645,025,000	452,503,000	769,300,000	(316,797,000)	17,060,000
06/30/2021	1,702,601,000	489,607,000	807,488,000	(317,881,000)	(309,126,000)
06/30/2022	1,762,192,000	506,706,000	847,381,000	(340,675,000)	(678,183,000)
06/30/2023	1,823,869,000	524,412,000	887,580,000	(363,168,000)	(1,092,351,000)

Notes:

- Estimated Plan Assets at Year-End assumes that the investment return assumption of 5.95% is met.
- Estimated Payroll is assumed to grow 3.5% annually.
- Member Contributions were estimated to be 9% of Estimated Payroll each year.
- Employer Contributions were estimated to be 10.5% of Estimated Payroll for FYE 2013, increasing to 19.75% of Estimated Payroll for FYE 2021 and later in accordance with Law 114. Employer contributions include expected payroll-based contributions received by the System on behalf of certain Law 70 retirees during the temporary period when the employers are directly paying the retirees' benefits. Employer contributions do not include the temporary pension benefits being paid by employers directly to certain Law 70 retirees.
- The Estimated Benefit Payments do not include amounts expected to be made to future participants, such as:
  - refund of contributions to terminated nonvested participants,
  - disability benefits,
  - death benefits,
  - retirement benefits due to service purchase,
 and thus are slightly understated.
- Administrative Expenses are assumed to grow 2.5% annually.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION IV - BASIC SYSTEM BENEFITS INFORMATION

#### A. Development of Present Value of Benefits as of June 30, 2012

1. Projected Benefits Payable to Retirees and Beneficiaries	
Retirees	\$ 6,145,064,920
Disabled Members	141,924,733
Beneficiaries	<u>123,654,137</u>
Total	\$ 6,410,643,790
2. Projected Benefits for Vested Terminated Members	57,435,457
3. Projected Benefits for Active Members	
Retirement	\$ 8,075,036,943
Disability	81,379,478
Pre Retirement Death	78,816,157
Return of Members' Contributions	13,492,052
Vested Withdrawal	<u>10,206,034</u>
Total	\$ 8,258,930,664
4. Return of Contributions due to former Members	\$ 23,862,569
5. Total Present Value of Benefits: (1) + (2) + (3) + (4)	\$ 14,750,872,480

The above liabilities are for Basic System Benefits. See Section I for more information.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION IV - BASIC SYSTEM BENEFITS INFORMATION

#### **B. Development of Actuarial Accrued Liability as of June 30, 2012**

1. Total Present Value of Benefits	\$ 14,750,872,480
2. Present Value of Future Total Normal Cost	
Retirement	\$ 2,876,210,066
Disability	40,563,126
Pre Retirement Death	41,058,697
Return of Members' Contributions	60,088,640
Vested Withdrawal	<u>7,362,399</u>
Total	\$ 3,025,282,928
3. Present Value of Future Active Member Contributions	\$ 1,318,792,270
4. Present Value of Future Employer Normal Cost: (2) - (3)	\$ 1,706,490,658
5. Actuarial Accrued Liability: (1) - (2)	\$ 11,725,589,552

The above liabilities are for Basic System Benefits. See Section I for more information.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION IV - BASIC SYSTEM BENEFITS INFORMATION

#### C. Development of Employer Normal Cost Payable as of December 31, 2012

1. Total Normal Cost as of December 31, 2012	
Retirement	\$ 254,293,073
Disability	3,568,646
Pre Retirement Death	3,829,867
Return of Members' Contributions	5,359,697
Vested Withdrawal	<u>641,783</u>
Total	\$ 267,693,066
2. Expected Member Contributions	\$ 114,150,844
3. Load for Administrative Expenses:	\$ 27,441,000
4. Total Employer Normal Cost as of December 31, 2012: (1) - (2) + (3)	\$ 180,983,222

The above liabilities are for Basic System Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION IV - BASIC SYSTEM BENEFITS INFORMATION**

**D. Development of Unfunded Actuarial Accrued Liability and Amortization Payment Payable as of December 31, 2012**

1. Actuarial Accrued Liability as of June 30, 2012	\$	11,725,589,552
2. Actuarial Value of Assets as of June 30, 2012	\$	2,099,563,000
3. Unfunded Actuarial Accrued Liability as of June 30, 2012: (1) - (2)	\$	9,626,026,552
4. Amortization Period in years		25
5. Amortization Factor at beginning of year *		19.1503
6. Amortization Amount Payable as of December 31, 2012: [ (3) / (5) ] * ( 1.0595 ^ 0.5 )	\$	517,394,674

\* Amortization calculated as a level percent of pay increasing 3.5% per year.

**E. Development of Annual Required Contribution**

1. Total Employer Normal Cost as of December 31, 2012	\$	180,983,222
2. Amortization Payment as of December 31, 2012	\$	517,394,674
3. Annual Required Contribution*: (1) + (2)	\$	698,377,896

\* Assumes payments made throughout the year.

The above liabilities are for Basic System Benefits. See Section I for more information.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION

#### A. Benefit Obligations

	<u>Basic System Benefits</u>	<u>System Administered Benefits</u>	<u>Total</u>
1. Projected Benefits as of June 30, 2012 Payable to:			
Retirees	\$ 6,145,064,920	\$ 453,829,739	\$ 6,598,894,659
Disabled Members	141,924,733	30,691,787	172,616,520
Beneficiaries	123,654,137	10,841,143	134,495,280
Vested Terminated Members	57,435,457	4,265,337	61,700,794
Return of Contributions due to former Members	23,862,569	0	23,862,569
Active Members	<u>8,258,930,664</u>	<u>165,736,812</u>	<u>8,424,667,476</u>
Total	\$ 14,750,872,480	\$ 665,364,818	\$ 15,416,237,298
2. Present Value of Future Normal Cost	\$ 3,025,282,928	\$ 40,118,844	\$ 3,065,401,772
3. Actuarial Accrued Liability as of June 30, 2012:			
(1) - (2)	\$ 11,725,589,552	\$ 625,245,974	\$ 12,350,835,526
4. Total Employer Normal Cost			
as of December 31, 2012	\$ 180,983,222	\$ 4,606,131	\$ 185,589,353

The above liabilities are for Basic System Benefits and selected System Administered Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION**

**B. Development of Unfunded Actuarial Accrued Liability and Amortization  
Payment Payable as of December 31, 2012**

1. Actuarial Accrued Liability as of June 30, 2012	\$ 12,350,835,526
2. Actuarial Value of Assets as of June 30, 2012	\$ 2,099,563,000
3. Unfunded Actuarial Accrued Liability as of June 30, 2012: (1) - (2)	\$ 10,251,272,526
4. Amortization Period in years	25
5. Amortization Factor at beginning of year *	19.1503
6. Amortization Amount Payable as of December 31, 2012: [ (3) / (5) ] * ( 1.0595 ^ 0.5 )	\$ 551,001,369

\* Amortization calculated as a level percent of pay increasing 3.5% per year.

**C. Development of Annual Required Contribution**

1. Total Employer Normal Cost as of December 31, 2012	\$ 185,589,353
2. Amortization Payment as of December 31, 2012	\$ 551,001,369
3. Annual Required Contribution*: (1) + (2)	\$ 736,590,722

\* Assumes payments made throughout the year.

The above liabilities are for Basic System Benefits and selected System Administered Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION**

**D. Development of Net Pension Obligation as of June 30, 2012**

1. Net Pension Obligation as of June 30, 2011	\$	1,962,911,608
2. Annual Pension Cost for Fiscal Year 2011 - 2012	\$	673,890,703
3. Fiscal Year 2011 - 2012 Employer Contribution	\$	174,571,000
4. Net Pension Obligation as of June 30, 2012: (1) + (2) - (3)	\$	2,462,231,311

**E. Development of Fiscal Year 2012 - 2013 Annual Pension Cost**

1. Annual Required Contribution	\$	736,590,722
2. Interest on Net Pension Obligation as of June 30, 2012	\$	146,502,763
3. Adjustment to the Annual Required Contribution	\$	136,224,188
4. Fiscal Year 2012 - 2013 Annual Pension Cost: (1) + (2) - (3)	\$	746,869,297

The above liabilities are for Basic System Benefits and selected System Administered Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION**

**F. Schedule of Employer Contributions**

<u>Year Ended June 30</u>	<u>Actual Employer Contribution</u>	<u>Annual Required Contribution</u>	<u>Percent Contributed</u>	<u>Annual Pension Cost</u>	<u>Percent Contributed</u>
2013	\$185,946,000	\$736,590,722	25.24%*	\$746,869,297	24.90%*
2012**	174,571,000	659,334,354	26.48	673,890,703	25.90
2011	161,628,000	528,169,741	30.60	550,399,492	29.37
2010	166,384,000	477,213,279	34.87	496,338,311	33.52
2009	172,841,000	393,871,256	43.88	410,504,146	42.10
2008	159,101,000	341,495,050	46.59	355,742,842	44.72
2007	147,597,000	341,159,718	43.26	351,814,817	41.95

\* Percentage contributed for the year ended June 30, 2013 assumes the actual employer contribution is 10.5% of expected payroll for the Basic System Benefits plus the expected pay-as-you-go amounts for the selected System Administered Benefits and the expected Law 70 early retirement incentive contributions.

\*\* For the fiscal year ending June 30, 2012, the Actual Employer Contribution for Basic System Benefits was \$123,614,000 and for System Administered Benefits was \$50,957,000. The Annual Required Contribution for Basic System Benefits was \$621,983,303 and for System Administered Benefits was \$37,351,051.

The above liabilities are for Basic System Benefits and selected System Administered Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION**

**G. Schedule of Funding Progress**

	(a)	(b)	(c)=(b)-(a)	(d)=(a)/(b)	(e)	(f)=(c)/(e)
Actuarial Valuation <u>Date</u>	Actuarial Value of <u>Assets</u>	Accrued <u>Liability</u>	Unfunded <u>Liability</u>	Funded <u>Ratio</u>	Annual <u>Salary</u>	Unfunded Liability as a % of Annual <u>Salary</u>
06/30/2012	\$2,099,563,000	\$12,350,835,526	\$10,251,272,526	17.0%	\$1,292,974,899	792.8%
06/30/2011	2,385,863,000	11,448,609,111	9,062,746,111	20.8%	1,320,399,637	686.4%
06/30/2010	2,221,977,000	9,279,775,973	7,057,798,973	23.9%	1,370,343,618	515.0%
06/30/2009	2,157,593,000	8,721,514,811	6,563,921,811	24.7%	1,418,304,104	462.8%
06/30/2008		Not Determined			Not Determined	
06/30/2007	3,162,720,000	7,755,817,493	4,593,097,493	40.8%	1,369,770,012	335.3%

The above liabilities are for Basic System Benefits and selected System Administered Benefits. See Section I for more information.

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

## SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION

### H. Additional Information

The following information was used to determine the Annual Required Contribution for the fiscal year ending June 30, 2013. The ARC is for the Basic System Benefits and selected System Administered Benefits. See Section I for more information.

Valuation Date:	June 30, 2012
Actuarial Cost Method:	Entry Age Normal
Amortization method:	30 years closed, level percent of payroll
Remaining Amortization Period:	25 years
Asset valuation method:	Market Value of Assets
Assumptions:	
Investment rate of return	5.95%
Projected Salary Increases	3.5% general wage inflation plus a service based merit increase
Inflation	2.5%
Cost of Living Adjustments	None assumed

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VI - GASB 45 ACCOUNTING INFORMATION**

**A. Benefit Obligations**

1. Projected Benefits as of June 30, 2012 Payable to:		
Retirees	\$	444,323,207
Disabled Members		29,221,464
Beneficiaries		3,519,267
Vested Terminated Members		9,968,176
Active Members		<u>467,399,187</u>
Total	\$	954,431,301
2. Present Value of Future Normal Cost	\$	157,099,064
3. Actuarial Accrued Liability as of June 30, 2012:		
(1) - (2)	\$	797,332,237
4. Total Employer Normal Cost as of December 31, 2012	\$	14,384,917

The above liabilities are for the Medical Insurance Plan Contribution portion of the System Administered Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VI - GASB 45 ACCOUNTING INFORMATION**

**B. Development of Unfunded Actuarial Accrued Liability and Amortization  
Payment Payable as of December 31, 2012**

1. Actuarial Accrued Liability as of June 30, 2012	\$	797,332,237
2. Actuarial Value of Assets as of June 30, 2012	\$	0
3. Unfunded Actuarial Accrued Liability as of June 30, 2012: (1) - (2)	\$	797,332,237
4. Amortization Period in years		25
5. Amortization Factor at beginning of year *		25.8918
6. Amortization Amount Payable as of December 31, 2012: [ (3) / (5) ] * ( 1.032 ^ 0.5 )	\$	31,283,615

\* Amortization calculated as a level percent of pay increasing 3.5% per year.

**C. Development of Annual Required Contribution**

1. Total Employer Normal Cost as of December 31, 2012	\$	14,384,917
2. Amortization Payment as of December 31, 2012	\$	31,283,615
3. Annual Required Contribution*: (1) + (2)	\$	45,668,532

\* Assumes payments made throughout the year.

The above liabilities are for the Medical Insurance Plan Contribution portion of the System Administered Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VI - GASB 45 ACCOUNTING INFORMATION**

**D. Development of Net OPEB Obligation as of June 30, 2012**

1. Net OPEB Obligation as of June 30, 2011	\$	43,447,763
2. Annual OPEB Cost for Fiscal Year 2011 - 2012	\$	40,961,894
3. Fiscal Year 2011 - 2012 Employer Contribution	\$	36,870,000
4. Net OPEB Obligation as of June 30, 2012: (1) + (2) - (3)	\$	47,539,657

**E. Development of Fiscal Year 2012 - 2013 Annual OPEB Cost**

1. Annual Required Contribution	\$	45,668,532
2. Interest on Net OPEB Obligation as of June 30, 2012	\$	1,521,269
3. Adjustment to the Annual Required Contribution	\$	1,894,844
4. Fiscal Year 2012 - 2013 Annual OPEB Cost: (1) + (2) - (3)	\$	45,294,957

The above liabilities are for the Medical Insurance Plan Contribution portion of the System Administered Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VI - GASB 45 ACCOUNTING INFORMATION**

**F. Schedule of Employer Contributions**

<u>Year Ended June 30</u>	<u>Actual Employer Contribution</u>	<u>Annual Required Contribution</u>	<u>Percent Contributed</u>	<u>Annual OPEB Cost</u>	<u>Percent Contributed</u>
2013	\$34,872,000	\$45,668,532	76.36%*	\$45,294,957	76.99%*
2012	36,870,000	41,068,597	89.78	40,961,894	90.01
2011	31,558,000	39,925,237	79.04	39,890,823	79.11
2010	28,427,000	42,487,047	66.91	42,495,262	66.89
2009	27,823,000	38,015,446	73.19	38,033,499	73.15
2008	26,000,000	36,836,179	70.58	36,836,179	70.58

\* Percentage contributed for the year ended June 30, 2013 assumes the actual employer contribution is the expected pay-as-you-go amounts for the Medical Insurance Plan Contribution.

The above liabilities are for the Medical Insurance Plan Contribution portion of the System Administered Benefits. See Section I for more information.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VI - GASB 45 ACCOUNTING INFORMATION**

**G. Schedule of Funding Progress**

	(a)	(b)	(c)=(b)-(a)	(d)=(a)/(b)	(e)	(f)=(c)/(e)
Actuarial Valuation <u>Date</u>	Actuarial Value of <u>Assets</u>	Accrued <u>Liability</u>	Unfunded <u>Liability</u>	Funded <u>Ratio</u>	Annual <u>Salary</u>	Unfunded Liability as a % of Annual <u>Salary</u>
06/30/2012	\$0	\$797,332,237	\$797,332,237	0.0%	\$1,292,974,899	61.7%
06/30/2011	\$0	706,068,965	706,068,965	0.0%	1,320,399,637	53.5%
06/30/2010	\$0	694,229,882	694,229,882	0.0%	1,370,343,618	50.7%
06/30/2009	\$0	750,381,890	750,381,890	0.0%	1,418,304,104	52.9%
06/30/2008		Not Determined			Not Determined	
06/30/2007	\$0	652,156,713	652,156,713	0.0%	1,369,770,012	47.6%

The above liabilities are for the Medical Insurance Plan Contribution portion of the System Administered Benefits. See Section I for more information.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VI - GASB 45 ACCOUNTING INFORMATION

#### H. Additional Information

The following information was used to determine the Annual Required Contribution for the fiscal year ending June 30, 2013. The ARC is for the Medical Insurance Plan Contribution portion of the System Administered Benefits. See Section I for more information.

Valuation Date:	June 30, 2012
Actuarial Cost Method:	Entry Age Normal
Amortization method:	30 years closed, level percent of payroll
Remaining Amortization Period:	25 years
Asset valuation method:	Market Value of Assets
Assumptions:	
Investment rate of return	3.20%
Projected Salary Increases	3.5% general wage inflation plus a service based merit increase
Inflation	2.5%
Cost of Living Adjustments	None assumed

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**A. Reconciliation with Prior Valuation**

	<u>Active</u>	<u>Terminated Vested</u>	<u>Retirees, Disabled Members, and Beneficiaries</u>	<u>Total</u>
Members as of June 30, 2011	43,402	768	35,361	79,531
Changes				
Terminated Vested	(166)	166	0	0
Retired & Disabled	(1,444)	(52)	1,496	0
Death	(57)	(6)	(621)	(684)
Disappeared	(864)	0	(17)	(881)
Return/Transfer of Contributions	(129)	(32)	0	(161)
Return to Active	621	(106)	(6)	509
New	1,344	0	292	1,636
Members as of June 30, 2012	42,707 <sup>1</sup>	738	36,505	79,950

<sup>1</sup> Includes 264 members on leave of absence without pay who are assumed not to earn additional benefits.

The liability for the Return of Contributions due to former Members was provided by the System and equals the accumulated contributions with interest as of June 30, 2012 for former participants who terminated employment by June 30, 2012 with less than ten years of service and have not received a return of contributions as of June 30, 2012.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**B. Summary of Active Members as of June 30, 2012**

**Number of Male Participants by Age and Service Groups**

Age	Years of Credited Service										Total	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
0-24	24	7	-	-	-	-	-	-	-	-	-	31
25-29	109	366	43	-	-	-	-	-	-	-	-	518
30-34	63	262	451	115	-	-	-	-	-	-	-	891
35-39	30	162	300	631	37	-	-	-	-	-	-	1,160
40-44	17	86	196	403	396	71	1	-	-	-	-	1,170
45-49	15	80	138	225	341	671	75	1	-	-	-	1,546
50-54	11	50	118	186	217	546	563	65	-	-	-	1,756
55-59	7	33	82	117	155	235	273	110	19	-	-	1,031
60-64	2	8	32	60	66	88	95	30	12	3	-	396
65-69	4	4	7	15	9	32	17	5	6	7	-	106
70&Up	-	1	4	3	5	5	10	2	1	6	-	37
<b>Total</b>	282	1,059	1,371	1,755	1,226	1,648	1,034	213	38	16	-	8,642

**Average Compensation of Male Participants by Age and Service Groups**

Age	Years of Credited Service										Average	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
0-24	21,105	21,660	-	-	-	-	-	-	-	-	-	21,230
25-29	21,346	21,544	22,277	-	-	-	-	-	-	-	-	21,563
30-34	20,660	21,323	24,823	29,454	-	-	-	-	-	-	-	24,097
35-39	22,470	21,492	25,832	30,986	34,781	-	-	-	-	-	-	28,228
40-44	25,300	22,054	26,329	31,972	34,011	35,848	32,100	-	-	-	-	31,126
45-49	19,802	23,267	26,319	31,206	33,359	34,602	36,037	44,040	-	-	-	32,440
50-54	25,972	24,660	26,549	30,978	32,837	34,459	35,557	36,374	-	-	-	33,449
55-59	22,239	23,739	26,091	30,410	33,033	34,149	34,690	36,088	35,625	-	-	32,879
60-64	23,028	23,596	27,491	30,884	34,003	33,962	34,017	35,085	38,751	38,932	-	32,996
65-69	37,659	22,119	26,347	30,187	34,127	33,821	34,223	35,287	39,944	37,817	-	33,287
70&Up	-	21,840	19,512	33,960	30,329	34,824	35,236	32,670	32,148	38,306	-	32,627
<b>Average</b>	21,894	21,887	25,609	31,096	33,507	34,495	35,193	36,020	37,203	38,210	-	30,439

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**B. Summary of Active Members as of June 30, 2012**

**Number of Female Participants by Age and Service Groups**

Age	Years of Credited Service										Total	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
<b>0-24</b>	107	88	-	-	-	-	-	-	-	-	-	195
<b>25-29</b>	465	1,509	242	-	-	-	-	-	-	-	-	2,216
<b>30-34</b>	207	1,192	1,732	425	-	-	-	-	-	-	-	3,556
<b>35-39</b>	131	666	1,123	2,286	150	-	-	-	-	-	-	4,356
<b>40-44</b>	93	468	780	1,643	1,481	323	1	-	-	-	-	4,789
<b>45-49</b>	49	333	636	1,243	1,304	2,849	372	7	-	-	-	6,793
<b>50-54</b>	27	168	422	783	838	1,943	2,075	364	-	-	-	6,620
<b>55-59</b>	9	80	205	465	540	947	892	504	66	-	-	3,708
<b>60-64</b>	6	34	76	147	208	375	293	106	60	17	-	1,322
<b>65-69</b>	1	5	22	49	67	90	92	27	7	35	-	395
<b>70&amp;Up</b>	-	1	6	13	10	18	29	13	5	20	-	115
<b>Total</b>	1,095	4,544	5,244	7,054	4,598	6,545	3,754	1,021	138	72	-	34,065

**Average Compensation of Female Participants by Age and Service Groups**

Age	Years of Credited Service										Average	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
<b>0-24</b>	21,069	21,332	-	-	-	-	-	-	-	-	-	21,188
<b>25-29</b>	21,047	21,519	22,438	-	-	-	-	-	-	-	-	21,520
<b>30-34</b>	21,226	21,547	24,800	29,866	-	-	-	-	-	-	-	24,107
<b>35-39</b>	21,423	21,714	24,942	31,438	33,387	-	-	-	-	-	-	28,042
<b>40-44</b>	21,260	21,830	25,548	31,512	33,895	34,953	32,460	-	-	-	-	30,365
<b>45-49</b>	21,642	21,934	26,344	31,312	33,141	34,662	35,968	34,436	-	-	-	32,332
<b>50-54</b>	21,846	22,283	25,946	31,096	33,374	34,529	35,244	35,890	-	-	-	33,366
<b>55-59</b>	21,055	22,252	26,362	30,349	32,933	34,180	35,028	35,387	39,437	-	-	33,258
<b>60-64</b>	20,450	22,818	26,749	30,162	32,890	33,962	34,698	36,476	36,713	37,661	-	33,145
<b>65-69</b>	21,000	27,622	26,382	29,913	32,573	33,342	34,959	36,439	39,821	37,616	-	33,377
<b>70&amp;Up</b>	-	21,000	30,811	31,329	33,594	33,714	33,933	35,382	29,813	41,339	-	34,572
<b>Average</b>	21,189	21,671	25,215	31,191	33,391	34,506	35,204	35,700	37,923	38,661	-	30,234

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**B. Summary of Active Members as of June 30, 2012**

**Number of All Active Participants by Age and Service Groups**

Age	Years of Credited Service										Total	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
<b>0-24</b>	131	95	-	-	-	-	-	-	-	-	-	226
<b>25-29</b>	574	1,875	285	-	-	-	-	-	-	-	-	2,734
<b>30-34</b>	270	1,454	2,183	540	-	-	-	-	-	-	-	4,447
<b>35-39</b>	161	828	1,423	2,917	187	-	-	-	-	-	-	5,516
<b>40-44</b>	110	554	976	2,046	1,877	394	2	-	-	-	-	5,959
<b>45-49</b>	64	413	774	1,468	1,645	3,520	447	8	-	-	-	8,339
<b>50-54</b>	38	218	540	969	1,055	2,489	2,638	429	-	-	-	8,376
<b>55-59</b>	16	113	287	582	695	1,182	1,165	614	85	-	-	4,739
<b>60-64</b>	8	42	108	207	274	463	388	136	72	20	-	1,718
<b>65-69</b>	5	9	29	64	76	122	109	32	13	42	-	501
<b>70&amp;Up</b>	-	2	10	16	15	23	39	15	6	26	-	152
<b>Total</b>	1,377	5,603	6,615	8,809	5,824	8,193	4,788	1,234	176	88	-	42,707

**Average Compensation of All Active Participants by Age and Service Groups**

Age	Years of Credited Service										Average	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
<b>0-24</b>	21,076	21,356	-	-	-	-	-	-	-	-	-	21,194
<b>25-29</b>	21,104	21,524	22,413	-	-	-	-	-	-	-	-	21,528
<b>30-34</b>	21,094	21,506	24,805	29,778	-	-	-	-	-	-	-	24,105
<b>35-39</b>	21,618	21,671	25,129	31,340	33,662	-	-	-	-	-	-	28,081
<b>40-44</b>	21,884	21,865	25,705	31,603	33,920	35,114	32,280	-	-	-	-	30,514
<b>45-49</b>	21,211	22,192	26,339	31,296	33,186	34,651	35,980	35,636	-	-	-	32,352
<b>50-54</b>	23,040	22,828	26,077	31,073	33,264	34,514	35,311	35,963	-	-	-	33,384
<b>55-59</b>	21,573	22,687	26,285	30,361	32,956	34,174	34,949	35,513	38,585	-	-	33,176
<b>60-64</b>	21,094	22,966	26,969	30,371	33,158	33,962	34,531	36,169	37,052	37,852	-	33,111
<b>65-69</b>	34,327	25,176	26,374	29,977	32,757	33,468	34,844	36,259	39,878	37,649	-	33,358
<b>70&amp;Up</b>	-	21,420	26,291	31,822	32,506	33,955	34,267	35,020	30,202	40,639	-	34,099
<b>Average</b>	21,334	21,712	25,297	31,172	33,416	34,504	35,202	35,756	37,768	38,579	-	30,276

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**C. Summary of Terminated Vested Members as of June 30, 2012**

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>
Under 35	1	5,333	1	3,600	2	4,466
35-39	7	5,705	30	5,747	37	5,739
40-44	21	6,481	87	7,063	108	6,950
45-49	36	8,396	126	7,973	162	8,067
50-54	57	9,517	115	9,249	172	9,338
55-59	43	10,646	109	10,184	152	10,314
60-64	24	9,735	51	10,862	75	10,501
65 & Over	<u>11</u>	<u>7,371</u>	<u>19</u>	<u>10,485</u>	<u>30</u>	<u>9,343</u>
All Ages	200	8,993	538	8,777	738	8,835

The Average Annual Pension amounts above are as of June 30, 2012. The \$400 minimum monthly benefit is not reflected.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**D. Summary of Retirees as of June 30, 2012**

Age	<u>Count</u>	<u>Males</u> Average Annual Pension		<u>Females</u> Average Annual Pension			<u>Total</u> Average Annual Pension		
		<u>Basic</u> System Benefit	<u>Total</u> Benefit	<u>Count</u>	<u>Basic</u> System Benefit	<u>Total</u> Benefit	<u>Count</u>	<u>Basic</u> System Benefit	<u>Total</u> Benefit
Under 45	1	26,288	26,288	12	16,642	16,642	13	17,384	17,384
45-49	5	21,097	21,097	10	15,568	15,703	15	17,411	17,501
50-54	65	23,951	23,971	332	24,002	24,021	397	23,994	24,013
55-59	907	24,782	24,788	3,997	24,015	24,026	4,904	24,156	24,167
60-64	1,463	20,638	20,867	5,617	19,965	20,250	7,080	20,104	20,377
65-69	1,381	17,650	18,289	4,635	16,531	17,189	6,016	16,788	17,442
70-74	1,057	14,672	15,765	3,396	13,291	14,426	4,453	13,619	14,744
75-79	876	11,678	13,294	2,625	10,861	12,383	3,501	11,066	12,611
80-84	699	9,902	11,845	1,920	9,369	11,074	2,619	9,511	11,280
85-89	306	9,201	10,934	1,310	8,514	10,124	1,616	8,644	10,277
90-94	105	8,539	9,975	480	8,094	9,552	585	8,174	9,627
95-99	20	7,402	8,367	120	7,732	9,093	140	7,685	8,990
100 & Over	<u>3</u>	<u>6,047</u>	<u>7,142</u>	<u>28</u>	<u>8,269</u>	<u>9,456</u>	<u>31</u>	<u>8,054</u>	<u>9,232</u>
All Ages	6,888	16,735	17,585	24,482	16,376	17,145	31,370	16,455	17,242

The Average Annual Pension amounts above are as of June 30, 2012. In addition, 769 retirees are currently paying annual additional contributions of \$2,358,291 (via a reduced monthly benefit which is not reflected above). The 39 Law 70 retirees have monthly employer contributions as of June 30, 2012 totaling \$11,558 and the amounts above do not reflect the deferral of the Basic System Benefit for these retirees.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**E. Summary of Disabled Members as of June 30, 2012**

Age	<u>Males</u> Average Annual Pension			<u>Females</u> Average Annual Pension			<u>Total</u> Average Annual Pension		
	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>
Under 40	2	4,800	4,800	8	4,883	5,158	10	4,866	5,087
40-44	4	6,961	6,961	16	6,159	6,335	20	6,320	6,460
45-49	17	7,775	8,053	71	7,903	8,082	88	7,879	8,077
50-54	35	8,090	8,416	142	8,760	9,016	177	8,628	8,898
55-59	64	8,079	8,432	264	7,237	7,727	328	7,401	7,864
60-64	62	5,953	6,731	249	6,183	6,915	311	6,137	6,878
65-69	49	4,847	5,797	228	4,931	5,866	277	4,916	5,854
70-74	30	4,942	5,941	257	4,526	5,513	287	4,569	5,558
75-79	29	4,352	5,329	224	4,448	5,427	253	4,437	5,416
80-84	44	4,329	5,309	185	4,319	5,323	229	4,321	5,320
85-89	16	4,700	5,648	104	4,420	5,382	120	4,458	5,418
90-94	4	4,158	5,185	41	4,386	5,367	45	4,366	5,351
95-99	4	4,316	5,311	17	4,273	5,219	21	4,281	5,236
100 & Over	<u>2</u>	<u>8,582</u>	<u>9,094</u>	<u>3</u>	<u>4,447</u>	<u>5,523</u>	<u>5</u>	<u>6,101</u>	<u>6,951</u>
All Ages	362	5,988	6,704	1,809	5,639	6,412	2,171	5,697	6,460

The Average Annual Pension amounts above are as of June 30, 2012.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**F. Summary of Beneficiaries as of June 30, 2012**

<u>Age</u>	<u>Males</u> <u>Average Annual Pension</u>			<u>Females</u> <u>Average Annual Pension</u>			<u>Total</u> <u>Average Annual Pension</u>		
	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>
Under 30	26	5,138	5,364	43	4,547	4,720	69	4,770	4,963
30-34	3	3,860	4,063	4	8,006	8,197	7	6,229	6,425
35-39	5	3,402	3,565	5	3,867	3,954	10	3,634	3,759
40-44	10	5,202	5,371	18	3,182	3,324	28	3,904	4,055
45-49	16	3,965	4,217	26	4,439	4,667	42	4,258	4,496
50-54	28	3,761	3,951	31	4,816	5,045	59	4,315	4,526
55-59	49	4,977	5,209	69	5,898	6,177	118	5,515	5,775
60-64	84	5,802	6,048	120	6,192	6,439	204	6,031	6,278
65-69	124	5,482	5,717	207	5,446	5,693	331	5,459	5,702
70-74	175	5,031	5,264	275	5,289	5,535	450	5,189	5,429
75-79	184	4,513	4,727	346	4,559	4,821	530	4,543	4,788
80-84	212	4,242	4,484	304	4,280	4,525	516	4,264	4,508
85-89	171	3,964	4,186	215	3,868	4,063	386	3,910	4,118
90 & Over	<u>106</u>	<u>3,698</u>	<u>3,906</u>	<u>108</u>	<u>3,681</u>	<u>3,863</u>	<u>214</u>	<u>3,689</u>	<u>3,885</u>
All Ages	1,193	4,588	4,816	1,771	4,748	4,984	2,964	4,684	4,916

The Average Annual Pension amounts above are as of June 30, 2012.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2012

This summary of plan provisions is intended only to describe the essential features of the plan for valuation purposes. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself.

#### 1. Type of Plan

The System is a contributory, defined benefit plan.

#### 2. Effective Date

The Plan was established in 1951. Act 91 of March 29, 2004 superseded Act 218 of May 6, 1951. The plan was last amended under Act 38, approved April 24, 2007.

#### 3. Eligibility for Membership

Members of the Teacher's Retirement System of Puerto Rico include teachers hired by the Department of Education, retired teachers, licensed teachers working in private schools or other educational organizations who elect to become members, employees of the System hired before March 29, 2004 who elected to become members, and employees of the System hired on or after March 29, 2004 (Act 91, Section 15).

#### 4. Definitions

- a. Fiscal Year: A Fiscal Year is a 12-month period beginning on July 1 and ending on June 30.
- b. Fund: The Teacher's Annuities and Pensions Fund of Puerto Rico (Act 91, Section 2).
- c. General Fund: The General Expenses Budget of the Government of the Commonwealth of Puerto Rico.
- d. Creditable Service: A year of service for each fiscal year a teacher or an employee is a Member of the Retirement System and required contributions were made (Act 91, Section 27) plus purchased service, if any (Act 91, Sections 21 and 22).

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2012

- e. Compensation: The gross cash compensation, excluding bonuses and overtime, upon which contributions by a Member to the Fund are based (Act 91, Section 2).
  - f. Average Compensation: The average of the 36 highest months of compensation that the participant has received for Creditable Service (Act 91, Section 2).
  - g. Average Non-occupational Disability Compensation: The average of the 60 highest months of compensation that the participant has received. (Act 91, Sections 29 and 31).
  - h. Average Occupational Disability Compensation: The average of the 60 highest months of compensation that the participant has received. If less than 60 months of creditable service, the average of the monthly compensation that the participant has received. (Act 91, Section 29).
  - i. Fees or Contributions: The amount deducted from the compensation of a Member or directly paid to the System (Act 91, Section 2).
  - j. Accumulated Fees or Contributions: The sum of all amounts deducted from the compensation of a Member or directly paid to the System without interest (Act 91, Section 2).
5. Retirement Benefits
- a. Retirement because of age  
  
Eligibility: Age 60 with 10 years of Creditable Service (Act 91, Section 28).  
  
Benefit: Members who retire because of age shall be entitled to a lifetime monthly income equal to 1.8% of Average Compensation multiplied by years of Creditable Service (Act 91, Section 40). In no event will the benefit determined be less than the Minimum Benefit.  
  
Additional Contributions required: None.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS**  
**AS OF JUNE 30, 2012**

b. Retirement because of age and years of service

Eligibility: Age 47 with 25 years of Creditable Service (Act 91, Section 40).

Benefit: Members who retire because of age and years of service shall be entitled to a lifetime monthly income based on age and years of Creditable Service as shown below (Act 91, Section 40). In no event will the benefit determined below be less than the Minimum Benefit.

Attained Age	Years of Creditable Service	Lifetime Monthly Income
55	30	75% of Average Compensation
50	30	75% of Average Compensation
Under 50	30	65% of Average Compensation
50	25 but less than 30	1.8% of Average Compensation multiplied by years of Creditable Service
47 but less than 50	25 but less than 30	95% of 1.8% of Average Compensation multiplied by years of Creditable Service

Additional Contributions required: If a member retires at age 55 or older with at least 30 years of Creditable Service, no additional contributions are required. Members who have not attained age 55 and 30 years of Creditable Service at retirement must contribute to the Fund 9% of the Average Compensation on a monthly basis for a minimum period of 5 years after retiring because of age and years of service (Act 91, Section 40). Current administrative practice requires contributions until attainment of both age 55 and the date when 30 years of Creditable Service would have been completed if employment had continued.

6. Termination Benefits

a. Lump Sum Withdrawal

Eligibility: A Member is eligible upon termination of service.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2012

Benefit: The benefit equals a refund of Accumulated Fees, plus interest accumulated at 2.0% per annum for a period no longer than 6 months following separation of service (Act 91, Section 19).

#### b. Deferred Retirement

Eligibility: A Member is eligible upon termination of service prior to age 60 and after 10 years of Creditable Service, provided the member has not taken a lump sum withdrawal.

Benefit: The benefit, commencing at age 60, is equal to 1.8% of Average Compensation multiplied by years of Creditable Service at date of termination (Act 91, Section 40). In no event will the benefit determined be less than the Minimum Benefit.

#### 7. Death Benefits

##### a. Pre-retirement Death Benefit

Eligibility: Any current non-retired member is eligible.

Benefit: The benefit is as follows:

- (i) While in active service, the benefit equals a refund of Accumulated Fees, plus interest accumulated at 2.0% per annum until the date of death; plus an amount equal to one year of Compensation in effect at the time of death (Act 91, Section 34).
- (ii) While not in active service, the benefit equals a refund of Accumulated Fees, plus interest accumulated at 2.0% per annum up to separation of service (Act 91, Sections 2 and 33).

##### b. Post-retirement Death Benefit

Eligibility: Any retiree or disabled member receiving a monthly benefit.

Benefit: The benefit is as follows:

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2012

- (i) For those married at the time of death, the lifetime annual income to a widow or widower is equal to 50% of the Retirement Benefit at time of death, payable for life (Act 91, Section 35).
- (ii) For those with children at the time of death, the total lifetime annual income to all children is equal to 50% of the Retirement Benefit at time of death. The benefit is payable while the children are under age 6 or are currently enrolled in a regular public or private school or college program until the age of 22, and it is payable for life while they are disabled (Act 91, Section 35).
- (iii) The benefit, when there is no relation as stated above, is equal to the remaining balance of Accumulated Fees with interest (interest is determined as of the date of retirement if retired directly from active service or as of separation of service otherwise) after the deduction of lifetime annual income paid and is payable to a beneficiary or to the Member's estate. In no case shall the benefit be less than \$1,000. The General Fund pays the difference, up to \$500, between (1) the Accumulated Fees with interest less the lifetime annual income paid and (2) \$1,000. The System pays for the rest. (Act 91, Section 35 and Act 272)

#### 8. Disability Benefits

##### a. Non-occupational Disability

Eligibility: All members are eligible for Non-occupational Disability upon 5 years of Creditable Service and the occurrence of disability (Act 91, Section 31).

Benefit: 1.8% of Average Non-occupational Disability Compensation multiplied by years of Creditable Service (Act 91, Section 29). In no event will the benefit determined be less than the Minimum Benefit.

##### b. Occupational Disability

Eligibility: All members disabled while in the course and as a consequence of their work. (Act 91, Section 31).

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2012

Benefit: 1.8% of Average Occupational Disability Compensation multiplied by years of Creditable Service (Act 91, Section 29). In no event will the benefit determined be less than the Minimum Benefit.

#### 9. Minimum Benefits

- a. Past Ad hoc Increases: The legislature, from time to time, increases pensions for certain retirees as described in Act 124 approved on June 8, 1973 and Act 47 approved on June 1, 1984. The benefits are paid 50% by the General Fund and 50% by the System.
- b. Current Minimum Benefit: The minimum monthly lifetime income for members who retire or become disabled is \$400 per month effective July 1, 2007 (\$300 per month up to June 30, 2007). The General Fund will pay for the \$100 per month increase in the minimum benefit (Act 91, Section 25 and Act 38 of 2007, Section 3).

10. Cost-of-Living Adjustments (COLA) to Pension Benefits: The legislature, from time to time, increases pensions by 3% for retired and disabled members. Beneficiaries are not entitled to COLAs granted after the retiree's death. The first increase was granted by Act 62 of 1992. Subsequent 3% increases have been granted every third year since 1992, with the latest 3% increase established on April 24, 2007 and effective July 1, 2007 (retroactive to January 1, 2007) for retired and disabled members that were receiving a monthly benefit on or before January 1, 2004 (Act 38). In addition, effective July 1, 2008, any retired or disabled member that was receiving a monthly annuity on or before January 1, 2004 less than \$1,250 per month received an increase of up to 3% without exceeding the limit of \$1,250 per month (Act 38). All COLAs are paid by the General Fund (various Acts).

11. Medical Insurance Plan Contribution: A payment of up to \$100 per month to the eligible medical insurance plan selected by the retiree, disabled member, or beneficiary. The amount is prorated if there are multiple beneficiaries. This benefit is paid by the General Fund (Act 483).

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2012

#### 12. Special “Bonus” Benefits:

- a. Christmas Bonus: An annual bonus of \$600 for each retiree and disabled member paid in December. The System pays \$150 per retiree and disabled member and the balance is paid by the General Fund (Act 144).
- b. Summer Bonus: An annual bonus of \$100 for each retiree, beneficiary, and disabled member paid in July. The amount is prorated if there are multiple beneficiaries. This benefit is paid by the General Fund (Act 38 in 2001).
- c. Medication Bonus: An annual bonus of \$100 for each retiree, beneficiary, and disabled member to cover health costs paid in July. Evidence of coverage is not required. The amount is prorated if there are multiple beneficiaries. This benefit is paid by the General Fund (Act 162).

#### 13. Forms of Payment

The basic pension benefits described in the above sections are payable in the form of a cash refund annuity. Optional benefits are provided upon a member’s death to the surviving beneficiaries as described in 7.b.

#### 14. Contributions

Member Contributions: Contributions by Members are 9% of Compensation (Act 91, Section 16). Before January 27, 2000, member contributions were 7% of Compensation.

Employer Contributions: Contributions by the Commonwealth of Puerto Rico and private school employers, as applicable, are 9.5% of Compensation for the fiscal year beginning July 1, 2011. For the next four fiscal years effective July 1, employer contributions will increase annually by 1%. For the next five fiscal years, employer contributions will increase annually by 1.25%, reaching an employer contribution rate of 19.75% effective July 1, 2020. (Act 91, Section 47 as amended by Law 114 of 2010) Prior to July 1, 2011, employer contributions were 8.5% of Compensation.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2012

15. Service Purchase: Active members with eligible service from prior employment may elect to purchase service in PRTRS. The cost of the purchase is calculated by applying the PRTRS statutory member and employer contribution rates to the member's salary during the years of service at the former employer. The amount due to member contributions is accumulated at 2% per year until the time of service purchase. If the service purchase is a time purchase and not an intergovernmental service transfer, the amount due to employer contributions is accumulated at 2% per year until the time of service purchase. Any amount not covered by asset transfers from the member's prior pension fund is payable by the member (Act 91, Sections 20, 21, 22, and 23).
16. Law 70 Retirement Incentive: During the 2010-2011 fiscal year, Law 70 provided for an early retirement incentive. Additional window periods occurred through December 31, 2012. Active members who had at least 15 years of service, but less than 30 years of service, were able to retire immediately with an enhanced benefit ranging from 37.5% to 50% of salary. This enhanced benefit is paid by the General Fund until the member reaches the later of age 55 or the date the member would have completed 30 years of service had the member continued working. The System will pay the benefit after this time period. While the General Fund is paying the pension benefit to the member or any surviving beneficiary, the General Fund will also pay a contribution equal to 8.5% of final salary to the System. Members who retired under this incentive are not eligible to receive the Medical Insurance Plan Contribution.
17. Changes in Plan Provisions since Prior Valuation
- None.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2012**

Interest: 5.95% per annum, net of investment expenses, for GASB 25 and 27. (8.00% prior to June 30, 2011 and 6.40% as of June 30, 2011)  
3.20% per annum for GASB 45 (4.00% prior to June 30, 2012).

Compensation Increases: Compensation increases vary by years of creditable service as shown below. The rates below include the assumption for general wage inflation of 3.5%.

Years of Creditable Service	Annual Rate
0-5	5.70%
6	5.50
7	5.30
8	5.10
9	4.90
10	4.80
11	4.70
12	4.60
13	4.50
14	4.30
15	4.20
16	4.10
17-19	4.00
20	3.90
21	3.80
22	3.75
23	3.70
24-27	3.65
28	3.60
29 & Over	3.50

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2012**

Termination: Withdrawal rates vary by gender and years of creditable service. The withdrawal rates are shown below.

Years of Creditable Service	Male	Female
0	12.00%	15.00%
1	9.00	8.00
2	6.00	5.00
3	3.00	3.00
4	3.00	2.75
5	2.50	2.50
6	2.50	2.25
7	2.00	2.00
8	1.50	1.50
9	1.00	0.50
10+	0.10	0.05

Retirement: Rates of retirement vary by age and years of creditable service. The rates shown below apply when an active member is eligible for retirement (e.g. age 47 with at least 25 years of creditable service or age 60 with at least 10 years of creditable service).

Age	Less than 30 years of Creditable Service	30 or more years of Creditable Service
47-49	0.5%	20.0
50-54	2.0	25.0
55-59	5.0	30.0
60-61	10.0	25.0
62-64	12.0	25.0
65-79	15.0	25.0
80	100.0	100.0

Current terminated vested members were assumed to retire (i) at age 55, or attained age if later, if the member had at least 30 years of service or (ii) at age 60, or attained age if later, otherwise.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2012**

Service Purchases: Members over age 50 who are not eligible for retirement are assumed to elect to purchase enough service to retire immediately at the rates shown in the table below.

Age	Annual Rate
50-54	0.5%
55-59	1.0
60-64	2.0
65-79	8.0

In addition, 50% of active members retiring prior to attaining 30 years of creditable service are assumed to purchase enough years of service upon retirement to attain 30 years of creditable service.

Disability: Unisex rates which vary by age and years of creditable service are assumed. Illustrative rates are shown below.

Age	Less than 5 years of Creditable Service	5 or more years of Creditable Service
25	0.008%	0.013%
30	0.008	0.013
35	0.008	0.013
40	0.009	0.014
45	0.020	0.031
50	0.068	0.105
55	0.133	0.204
60 & Over	0.000	0.000

Members who become disabled after at least 30 years of service are assumed to receive the retirement for age and years of service benefit instead of the disability benefit.

Pre-retirement Mortality: RP-2000 Employee Mortality Rates for males and females, projected on a generational basis using Scale AA. As a generational table, it reflects mortality improvements both before and after the measurement date.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2012

Post-retirement Healthy Mortality: Rates which vary by gender are assumed for healthy retirees and beneficiaries based on a study of plan's experience from 2007 to 2012 equal to 92% of the rates from the UP-1994 Mortality Table for Males and 87% of the rates from the UP-1994 Mortality Table for Females. The rates are projected on a generational basis starting in 1994 using Scale AA. As a generational table, it reflects mortality improvements both before and after the measurement date.

Post-retirement Disabled Mortality: Rates which vary by gender are assumed for disabled retirees based on a study of plan's experience from 2007 to 2012 equal to the rates in the UP-1994 Mortality Table for males and females. No provision was made for future mortality improvement for disabled retirees.

Marriage: 65% of current active and terminated members are assumed to be married at retirement with males 3 years older than females.

Form of Payment: Future retired members are assumed to receive a joint and 50% survivor annuity if married and a modified cash refund (approximated by a single life annuity with 3 years certain) if not married.

Spousal information was not provided for current retired and disabled members. A 65% marriage assumption was applied to all current retirees and disabled members retroactively to the date of retirement or disability. The spouse's date of birth was imputed based on an assumed age difference of 3 years with males older than females. A 3-year certain period, retroactive to date of retirement or disability, is applied to approximate the cost of a modified cash refund for retirees without a surviving spouse.

No future dependent children were assumed to become beneficiaries.

Members who terminate employment with at least 10 years of service are assumed to elect to receive a deferred pension benefit in lieu of a refund of contributions.

Medical Insurance Plan Contribution: 85% of future and current retirees and disableds and 10% of future and current beneficiaries were assumed to receive a monthly medical insurance continuation benefit of \$100 per month.

Administrative Expenses: Average of past two year's expense is added to the normal cost. For 2012, this amount is \$27,441,000.

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Special Data Adjustments: The following adjustments were made to the census data received from the System.

The entry age for active members was assumed to be the age as of June 30, 2012 less the provided years of creditable service.

If not provided by the System, benefits for new and continuing retired and terminated vested participants were estimated based on the years of credited service and earnings history available from prior valuations.

Refer to the Form of Payment assumption above for a description of spousal data imputation for current retired and disabled members.

If not provided by the System, the portion of the annual benefit payable to current beneficiaries attributable to past COLA adjustments was assumed to be 5% (and thus paid by the General Fund of the Commonwealth of Puerto Rico instead of the System).

Benefits for current beneficiaries who are under age 22 as of the valuation date were assumed to cease at age 22. Benefits for current beneficiaries who are age 22 or older as of the valuation data were assumed to be payable for life. In addition, the current level of benefit was assumed to remain constant.

Benefits not valued: The minimum post-retirement death benefit of \$1,000 for retirees without surviving beneficiaries is not explicitly valued. The additional liability associated with this benefit is expected to be de minimus.

Changes in actuarial assumptions since the prior valuation: The interest rate assumption for GASB 25 & 27 was decreased from 6.4% to 5.95%. The interest rate assumption for GASB 45 was decreased from 4.0% to 3.2%. In addition, the postretirement mortality assumptions for healthy and disabled lives were revised based on a study of the plan's experience from 2007 to 2012.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION X – SUMMARY OF ACTUARIAL METHODS AS OF JUNE 30, 2012

The ultimate cost of a pension plan is the excess of actual benefits and administrative expenses paid over actual net investment return on plan assets during the plan's existence until the last payment has been made to the last participant. The plan's "actuarial cost method" determines the expected incidence of actuarial costs by allocating portions of the ultimate cost to each plan year. The cost method is thus a budgeting tool to help to ensure that the plan will be adequately and systematically funded and accounted for. There are several commonly-used cost methods which differ in how much of the ultimate cost is assigned to each prior and future year. Therefore, the pattern of annual contributions and accounting expense varies with the choice of cost method. Annual contributions and accounting expense are also affected by the "asset valuation method" (as well as the plan provisions, actuarial assumptions, and actual plan demographic and investment experience each year).

#### Actuarial Cost Method

The plan's actuarial cost method is the entry age normal method. Under this method, a projected benefit is determined at each active participant's assumed retirement age assuming future compensation increases. The plan's normal cost is the sum of each active participant's annual cost for the current year of service determined such that, if it were calculated as a level percentage of his compensation each year, it would accumulate at the valuation interest rate over his total prior and future years of service to his assumed retirement date into an amount sufficient to fund his projected benefit. The plan's accrued liability is the sum of (a) the accumulation of each active participant's normal costs attributable to all prior years of service plus (b) the present value of each inactive participant's future benefits.

For the medical insurance plan contribution and the special bonus benefits administered by PRTRS and paid by the General Fund of the Commonwealth of Puerto Rico, the actuarial cost method is also the entry age normal method but the normal cost is determined as a level dollar amount instead of a level percentage of compensation. Under this variation, the normal cost is the sum of each active participant's annual cost for the current year of service determined such that, if it were calculated as a level amount each year, it would accumulate at the valuation interest rate over his total prior and future years of service to his assumed retirement date into an amount sufficient to fund his projected benefit.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION X – SUMMARY OF ACTUARIAL METHODS AS OF JUNE 30, 2012**

Asset Valuation Method

The Actuarial Value of Assets is equal to the Market Value of Assets.

Changes in actuarial methods since the prior valuation: None.

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