

**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**June 30, 2009 Actuarial Valuation Report**

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December 22, 2009

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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, 2009. 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, 2009 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 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. After considering PRTRS' input, we agreed with PRTRS on an 8% investment return assumption. We believe that this investment return assumption, which was used in prior valuations, is reasonable for the purpose of these measurements because it falls within our estimate, which reflects the System's investment policy, of the 25<sup>th</sup> to 75<sup>th</sup> percentile range of the long term expected rate of investment return.

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

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,

MILLIMAN, INC.



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**

**SECTION I – SUMMARY**

**A. Summary of Principal Results of June 30, 2009 Actuarial Valuation (\$ amounts in thousands)**

|   | Basic System Pension<br><u>Benefits only</u> | System Administered<br><u>Pension Benefits only</u> | GASB 25 & 27 Accounting<br>(Basic System and<br>System Administered<br><u>Pension Benefits</u> ) | GASB 45 Accounting<br>(Other Postemployment<br><u>Benefits</u> ) |
|---|--|---|--|--|
| Present Value of Benefits <sup>1</sup>                            | \$9,853,663                                  | \$552,220   | \$10,405,883   | \$889,583  |
| Actuarial Accrued Liability                                       | 8,192,470                                    | 529,045   | 8,721,515  | 750,382  |
| Actuarial Value of Assets   | 2,157,593                                    | 0   | 2,157,593  | 0  |
| Unfunded Actuarial Accrued Liability                              | 6,034,877                                    | 529,045   | 6,563,922  | 750,382  |
| Employer Normal Cost<br>as a percent of payroll                   | 65,996<br>4.65%                              | 3,015<br>0.22%                                      | 69,011<br>4.87%  | 13,342<br>0.94%  |
| Annual Required Contribution (ARC)<br>as a percent of payroll     | 441,297<br>31.11%                            | 35,916<br>2.54%                                     | 477,213<br>33.65%  | 42,487<br>3.00%  |
| Annual Pension / OPEB Cost<br>as a percent of payroll             | N/A<br>N/A                                   | N/A<br>N/A  | 496,338<br>35.00%  | 42,495<br>3.00%  |
| Employer Contributions (estimated)<br>as a percent of payroll     | 120,556<br>8.50%                             | 49,124<br>3.46%                                     | 169,680<br>11.96%  | 33,439<br>2.36%  |
| Portion of ARC not covered (estimated)<br>as a percent of payroll | 320,741<br>22.61%                            | (13,208)<br>(0.92)%                                 | 307,533<br>21.69%  | 9,048<br>0.64%   |

<sup>1</sup> A discussion of the benefits included in the respective Present Value of Benefits begins on page 5 of this section.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION I – SUMMARY**

|   | June 30, 2007<br><u>Valuation</u> | June 30, 2009<br><u>Valuation</u> |
|---|-----------------------------------|-----------------------------------|
| <b><i>GASB 25 &amp; 27 Accounting (\$ amounts in thousands)</i></b>                 |                                   |                                   |
| Present Value of Benefits <sup>1</sup>  | \$9,373,519                       | \$10,405,883                      |
| Actuarial Accrued Liability   | 7,755,817                         | 8,721,515                         |
| Actuarial Value of Assets   | <u>3,162,720</u>                  | <u>2,157,593</u>                  |
| Unfunded Actuarial Accrued Liability  | 4,593,097                         | 6,563,922                         |
| Employer Normal Cost<br>as a percent of payroll                                     | 65,672<br>4.79%                   | 69,011<br>4.87%                   |
| Annual Required Contribution<br>for upcoming fiscal year<br>as a percent of payroll | 341,495<br>24.93%                 | 477,213<br>33.65%                 |
| <b><i>GASB 45 Accounting (\$ amounts in thousands)</i></b>                          |                                   |                                   |
| Present Value of Benefits <sup>1</sup>  | \$787,335                         | \$889,583                         |
| Actuarial Accrued Liability   | 652,157                           | 750,382                           |
| Actuarial Value of Assets   | <u>0</u>                          | <u>0</u>                          |
| Unfunded Actuarial Accrued Liability  | 652,157                           | 750,382                           |
| Employer Normal Cost<br>as a percent of payroll                                     | 13,083<br>0.96%                   | 13,342<br>0.94%                   |
| Annual Required Contribution<br>for upcoming fiscal year<br>as a percent of payroll | 36,836<br>2.69%                   | 42,487<br>3.00%                   |

<sup>1</sup> A discussion of the benefits included in the respective Present Value of Benefits begins on page 5 of this section.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

|                                       | June 30, 2007<br><u>Valuation</u> | June 30, 2009<br><u>Valuation</u> |
|---------------------------------------|-----------------------------------|-----------------------------------|
| <i>Participant Data</i>               |                                   |                                   |
| <u>Active Members</u>                 |                                   |                                   |
| Number                                | 48,505                            | 46,295                            |
| Average Salary                        | \$28,240                          | \$30,636                          |
| Total Annual Salary                   | \$1,369,770,012                   | \$1,418,304,104                   |
| <u>Retirees</u>                       |                                   |                                   |
| Number                                | 24,388                            | 27,936                            |
| Average Monthly Benefit without COLAs | \$1,116                           | \$1,242                           |
| Average Monthly Benefit with COLAs    | \$1,199                           | \$1,322                           |
| <u>Disabled Members</u>               |                                   |                                   |
| Number                                | 2,047                             | 2,035                             |
| Average Monthly Benefit without COLAs | \$402                             | \$420                             |
| Average Monthly Benefit with COLAs    | \$454                             | \$494                             |
| <u>Beneficiaries</u>                  |                                   |                                   |
| Number                                | 2,531                             | 2,578                             |
| Average Monthly Benefit without COLAs | \$335                             | \$351                             |
| Average Monthly Benefit with COLAs    | \$353                             | \$374                             |
| <u>Terminated Vested Members</u>      |                                   |                                   |
| Number                                | 791                               | 675                               |
| Average Monthly Benefit               | \$794                             | \$738                             |

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

#### **B. General Discussion**

##### System Experience since Prior Valuation

The actuarial accrued liability under GASB 25 & 27 is based on an assumed investment rate of return of 8.0%. The actual rates of return since the prior valuation were (6.45%) for 2007-2008 and (16.38%) for 2008-2009. These significant asset losses have greatly increased the System's unfunded actuarial accrued liability since the prior valuation, which results in a significant increase in the Annual Required Contribution under GASB 25 & 27.

We also note that the overall payroll has not increased as much as anticipated in the prior valuation, due to a decrease in the size of the active membership. Because the statutory member and employer contribution rates are both fixed percentages of salary, a smaller active membership will result in less prospective contributions.

There was a demographic loss on new retirees (members who retired in the two years since the prior valuation). Full information to study the details of this loss is not normally included in the census data provided for the valuation, so we provided the System with a request for more details on selected members. Based on our review of those selected members, it is possible that members are purchasing more service than anticipated in the valuation assumption and/or have higher earnings associated with the purchased service. We believe that the valuation results as presented in this report are appropriate and that any revision to the service purchase assumption would probably have an insignificant impact on the overall results. We have issued a data request to the System to compile detailed information on retirements that occur before the next valuation so that we can determine if the recent demographic experience was a one-time event or if it is anticipated to be ongoing, in which case the service purchase assumption may then be updated.

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# PUERTO RICO TEACHERS RETIREMENT SYSTEM

## SECTION I -- SUMMARY

### 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 totals 17.5% of payroll, comprising 9.0% member and 8.5% employer contributions.

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

#### 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, 2009 actuarial valuation of the Basic System Benefits and have prepared accounting results for them based on GASB 25 and 27 rules.

The FY 2009-2010 ARC for the Basic System Benefits only based on GASB 25 and 27 rules would be \$441.3 million, which equals 31.11% 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 sound; 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 8.5% of payroll, is less than the ARC by 22.61% of payroll, or \$320.7 million.

As shown in Subsection D of Section IV, PRTRS has Unfunded Actuarial Accrued Liabilities (UAAL) of \$6.0 billion on behalf of Basic System Benefits, which should be 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 gradually disfunded.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

#### GASB 25 and 27 Accounting Information

We have performed a June 30, 2009 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 2009-2010 ARC under GASB 25 and 27 is \$477.2 million, which equals 33.65% of payroll. This includes the Basic System Benefits and the System Administered Benefits (excluding the Medical Insurance Plan Contribution). The FY 2009-2010 APC under GASB 27 is \$496.3 million, which equals 35.00% of payroll.

As shown in Subsection B of Section V, the Unfunded Actuarial Accrued Liability on a GASB 25 and 27 basis is \$6.6 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 gradually 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, 2009 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.)

The FY 2009-2010 ARC for the Medical Insurance Plan Contribution under GASB 45 is \$42.5 million, which equals 3.00% of payroll. The FY 2009-2010 Annual OPEB Cost under GASB 45 is \$42.5 million, which equals 3.00% 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

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I -- SUMMARY

Benefit that is not funded in advance, the ARC for this benefit has been calculated based on an assumed investment return rate of 4.0%, instead of the 8.0% 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 \$750 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 26.3%. For retirees, disabled members, and beneficiaries, the solvency percentage is 14.1%. Vested terminated members with rights to deferred pensions and active members have solvency percentages of 56.1% and 40.0%, respectively. The solvency percentage for former members due a refund of accumulated members 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.

#### 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 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.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

The table shown in Subsection B of Section III illustrates 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 2019-2020 fiscal year, assuming an annual 8% 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.

We recommend that the statutory funding requirements be increased in light of:

- the expected negative net cash flows;
- the forecast exhaustion of plan assets by 2019-2020; 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, 2009, 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, 2008 to June 30, 2009.

Subsection C summarizes the development of the Actuarial Value of Assets as of June 30, 2009. 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, 2008 to June 30, 2009 was -16.38% on the Market Value of Assets. The same methodology was used to determine the estimated rate of return from June 30, 2007 to June 30, 2008 of -6.45% 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, 2009.

#### 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 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, 2010 (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, 2009.

Subsection B summarizes the development of the Actuarial Accrued Liability as of June 30, 2009.

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 (28 years remain as of June 30, 2009) 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, 2010 (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, 2009 and Employer Normal Cost as of December 31, 2009.

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 (28 years remain as of June 30, 2009) 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, 2009. 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, 2010. 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, 2009 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 2009-2010 contribution percentage assumes that employer contributions for Basic System Benefits will remain at the statutory level of 8.5% of payroll and that employer

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

contributions for the applicable System Administered Benefits will be the anticipated pay-as-you-go payments. Based on our understanding of prior valuations, the ARCs and APCs shown for the years ended June 30, 2006 and June 30, 2005 do not include the liability for any System Administered Benefits and the ARCs and APCs shown for the year ending June 30, 2004 include the liability for ad hoc COLAs granted in 1992 and 1995 but do not include the liability for any of the other applicable System Administered Benefits. Consequently, the ratios of Actual Employer Contributions to ARCs and APCs shown in this exhibit for the fiscal years ending June 30, 2004 to June 30, 2006 could be overestimated. For years prior to June 30, 2007, we have restated the actual employer contribution figures in the seven-year history to exclude the payments from the General Fund of the Commonwealth of Puerto Rico for the System Administered Benefits not included in GASB 25 and 27 (the Medical Insurance Plan Contribution and the Cultural Trip).

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. Please refer to the paragraph above for the benefits that appear not to be reflected in the Accrued Liability as of June 30, 2004, based on our understanding of prior valuations.

Schedule H summarizes information used to determine the Annual Required Contribution for the fiscal year ending June 30, 2010.

#### 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, 2010 for the Medical Insurance Plan Contribution.

Subsection A summarizes the development of the Actuarial Accrued Liability as of June 30, 2009 and Employer Normal Cost as of December 31, 2009.

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 (28 years remain as of June 30, 2009) with annual payments increasing each year by 3.5% to remain as a level percent of payroll.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

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, 2009. 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, 2010. 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, 2009 less an amortization of this NOO.

Subsection F shows a three-year history of the ARC, AOC, and the percentage contributed. This schedule is required by GASB Statements No. 45. The FY 2009-2010 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 three-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, 2010.

#### 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.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION I – SUMMARY

#### 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, 2009

|  |                  |
|--|------------------|
| 1. Assets  |                  |
| Cash   | \$ 22,860,000    |
| Corporate and Government Bonds                           | 425,911,000      |
| Stocks   | 1,259,169,000    |
| Private Equity Investments                               | 26,139,000       |
| Total Loans to Plan Members                              | 399,380,000      |
| Accounts Receivable                                      | 31,606,000       |
| Capital Assets   | 26,167,000       |
| Other Assets   | <u>876,000</u>   |
| Total  | \$ 2,192,108,000 |
| 2. Total Liabilities                                     | \$ 34,515,000    |
| 3. Market Value of Assets as of June 30, 2009: (1) - (2) | \$ 2,157,593,000 |

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION II - SYSTEM ASSETS**

**B. Reconciliation of Market Value of Assets from June 30, 2008 to June 30, 2009**

|  |                    |
|--|--------------------|
| 1. Market Value of Assets as of June 30, 2008        | \$ 2,785,346,000   |
| 2. Additions   |                    |
| a. Contributions                                     |                    |
| Member Contributions                                 | \$ 136,305,000     |
| Employer Contributions                               | 125,165,000        |
| Transfers In   | 1,479,000          |
| Special  | <u>75,548,000</u>  |
| Total Contributions                                  | \$ 338,497,000     |
| b. Investment Income                                 |                    |
| Interest Income                                      | \$ 66,927,000      |
| Dividends Income                                     | 13,194,000         |
| Net Appreciation of Investments                      | (518,862,000)      |
| Other Income   | 2,443,000          |
| Investment Related Expenses                          | <u>(4,660,000)</u> |
| Net Investment Income                                | \$ (440,958,000)   |
| Total Additions                                      | \$ (102,461,000)   |
| 3. Decreases   |                    |
| Refund of Member Contributions                       | \$ 5,313,000       |
| Annuities and Death Benefits                         | 442,543,000        |
| Special Benefits                                     | 51,951,000         |
| Administrative Expenses                              | <u>25,485,000</u>  |
| Total  | \$ 525,292,000     |
| 4. Net Increase (Decrease) in Market Value of Assets | \$ (627,753,000)   |
| 5. Market Value of Assets as of June 30, 2009        | \$ 2,157,593,000   |

**C. Development of Actuarial Value of Assets as of June 30, 2009**

The Actuarial Value of Assets as of June 30, 2009 is equal to the Market Value of Assets as of June 30, 2009 of \$2,157,593,000.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION II - SYSTEM ASSETS**

**D. Estimated Annual Rate of Return for year ending June 30, 2009**

|   | <u>Market Value</u> |
|---|---------------------|
| 1. Value of Assets as of June 30, 2008        | \$ 2,785,346,000    |
| 2. Total Contributions                        | 338,497,000         |
| 3. Benefit Payments and Expenses              | 525,292,000         |
| 4. Value of Assets as of June 30, 2009        | 2,157,593,000       |
| 5. Non-Investment Increment: (2) - (3)        | (186,795,000)       |
| 6. Investment Increment: (4) - (1) - (5)      | (440,958,000)       |
| 7. Time Weighted Value: (1) +.5 * (5)         | 2,691,948,500       |
| 8. Estimated Annual Rate of Return: (6) / (7) | -16.38%             |

**E. Estimated Historical Rates of Return**

| <u>Plan Year Ending</u>         | <u>Market Value</u> |
|---------------------------------|---------------------|
| June 30, 2009                   | -16.38%             |
| June 30, 2008                   | -6.45%              |
| June 30, 2007                   | 17.50%              |
| June 30, 2006                   | 13.44%              |
| June 30, 2005                   | 9.53%               |
| 5-year Compounded Annual Return | 2.69%               |

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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<br>Group                                 | Actuarial<br>Accrued<br><u>Liability</u> | Allocated<br><u>Assets</u> * | Solvency<br><u>Percentage</u> |
|---|--|------------------------------|-------------------------------|
| 1. Retirees, Disabled Members,<br>and Beneficiaries | \$4,387,909,110                          | \$ 618,158,853               | 14.1%                         |
| 2. Vested Terminated Members                        | 36,531,316                               | 20,489,326                   | 56.1%                         |
| 3. Active Members                                   | 3,749,312,588                            | 1,500,228,088                | 40.0%                         |
| 4. Former Members due a refund<br>of contributions  | <u>18,716,733</u>                        | <u>18,716,733</u>            | <u>100.0%</u>                 |
| 5. Total  | \$8,192,469,747                          | \$ 2,157,593,000             | 26.3%                         |

\* 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**

| <u>Plan Year<br/>Ending</u> | <u>Estimated<br/>Payroll</u> | <u>Estimated<br/>Member and<br/>Employer<br/>Contributions</u> | <u>Estimated<br/>Benefit<br/>Payments and<br/>Administrative<br/>Expenses</u> | <u>Net<br/>Cash Flow</u> |
|-----------------------------|------------------------------|--|---|--------------------------|
| 06/30/2010                  | 1,418,304,104                | 248,203,218  | 482,920,254   | (234,717,036)            |
| 06/30/2011                  | 1,467,944,748                | 256,890,331  | 500,198,342   | (243,308,011)            |
| 06/30/2012                  | 1,519,322,814                | 265,881,492  | 520,938,714   | (255,057,222)            |
| 06/30/2013                  | 1,572,499,112                | 275,187,345  | 544,264,245   | (269,076,900)            |
| 06/30/2014                  | 1,627,536,581                | 284,818,901  | 569,798,987   | (284,980,086)            |
| 06/30/2015                  | 1,684,500,361                | 294,787,563  | 596,948,267   | (302,160,704)            |
| 06/30/2016                  | 1,743,457,874                | 305,105,128  | 625,294,836   | (320,189,708)            |
| 06/30/2017                  | 1,804,478,900                | 315,783,808  | 654,844,186   | (339,060,378)            |
| 06/30/2018                  | 1,867,635,662                | 326,836,241  | 685,974,030   | (359,137,789)            |
| 06/30/2019                  | 1,933,002,910                | 338,275,509  | 719,444,694   | (381,169,185)            |
| 06/30/2020                  | 2,000,658,012                | 350,115,152  | 757,862,643   | (407,747,491)            |

**Notes:**

- Estimated Payroll is assumed to grow 3.5% annually.
- Member and Employer Contributions were estimated to be 17.5% of Estimated Payroll each year.
- 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, 2009**

|   |                   |
|---|-------------------|
| 1. Projected Benefits Payable to Retirees and Beneficiaries |                   |
| Retirees  | \$ 4,215,196,084  |
| Disabled Members  | 87,042,323        |
| Beneficiaries   | <u>85,670,703</u> |
| Total   | \$ 4,387,909,110  |
| 2. Projected Benefits for Vested Terminated Members         | 36,531,316        |
| 3. Projected Benefits for Active Members                    |                   |
| Retirement  | \$ 5,261,618,305  |
| Disability  | 54,136,074        |
| Pre Retirement Death  | 71,523,546        |
| Return of Members' Contributions                            | 16,277,422        |
| Vested Withdrawal   | <u>6,950,307</u>  |
| Total   | \$ 5,410,505,654  |
| 4. Return of Contributions due to former Members            | \$ 18,716,733     |
| 5. Total Present Value of Benefits: (1) + (2) + (3) + (4)   | \$ 9,853,662,813  |

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, 2009**

|  |                  |
|--|------------------|
| 1. Total Present Value of Benefits                         | \$ 9,853,662,813 |
| 2. Present Value of Future Total Normal Cost               |                  |
| Retirement   | \$ 1,529,650,610 |
| Disability   | 23,756,954       |
| Pre Retirement Death                                       | 35,028,624       |
| Return of Members' Contributions                           | 68,437,479       |
| Vested Withdrawal  | <u>4,319,399</u> |
| Total  | \$ 1,661,193,066 |
| 3. Present Value of Future Active Member Contributions     | \$ 1,282,258,395 |
| 4. Present Value of Future Employer Normal Cost: (2) - (3) | \$ 378,934,671   |
| 5. Actuarial Accrued Liability: (1) - (2)                  | \$ 8,192,469,747 |

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, 2009**

|   |                |
|---|----------------|
| 1. Total Normal Cost as of December 31, 2009                              |                |
| Retirement  | \$ 152,448,740 |
| Disability  | 2,363,076      |
| Pre Retirement Death  | 3,642,878      |
| Return of Members' Contributions  | 6,858,688      |
| Vested Withdrawal   | <u>423,927</u> |
| Total   | \$ 165,737,309 |
| 2. Expected Member Contributions  | \$ 125,252,739 |
| 3. Load for Administrative Expenses:                                      | \$ 25,511,000  |
| 4. Total Employer Normal Cost as of<br>December 31, 2009: (1) - (2) + (3) | \$ 65,995,570  |

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, 2009**

|   |                  |
|---|------------------|
| 1. Actuarial Accrued Liability as of June 30, 2009  | \$ 8,192,469,747 |
| 2. Actuarial Value of Assets as of June 30, 2009  | \$ 2,157,593,000 |
| 3. Unfunded Actuarial Accrued Liability as of June 30, 2009: (1) - (2)                    | \$ 6,034,876,747 |
| 4. Amortization Period in years   | 28               |
| 5. Amortization Factor at beginning of year *   | 16.7109          |
| 6. Amortization Amount Payable as of December 31, 2009:<br>[ (3) / (5) ] * ( 1.08 ^ 0.5 ) | \$ 375,301,623   |

\* 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, 2009 | \$ 65,995,570  |
| 2. Amortization Payment as of December 31, 2009       | \$ 375,301,623 |
| 3. Annual Required Contribution*: (1) + (2)           | \$ 441,297,193 |

\* 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

|  | Basic<br>System<br>Benefits | System<br>Administered<br>Benefits | <u>Total</u>      |
|--|-----------------------------|------------------------------------|-------------------|
| 1. Projected Benefits as of June 30, 2009 Payable to:    |                             |                                    |                   |
| Retirees   | \$ 4,215,196,084            | \$ 399,092,344                     | \$ 4,614,288,428  |
| Disabled Members   | 87,042,323                  | 24,448,251                         | 111,490,574       |
| Beneficiaries  | 85,670,703                  | 9,344,627                          | 95,015,330        |
| Vested Terminated Members                                | 36,531,316                  | 2,597,877                          | 39,129,193        |
| Return of Contributions due to former Members            | 18,716,733                  | 0                                  | 18,716,733        |
| Active Members   | 5,410,505,654               | 116,736,753                        | 5,527,242,407     |
| Total  | \$ 9,853,662,813            | \$ 552,219,852                     | \$ 10,405,882,665 |
| 2. Present Value of Future Normal Cost                   | \$ 1,661,193,066            | \$ 23,174,788                      | \$ 1,684,367,854  |
| 3. Actuarial Accrued Liability as of June 30, 2009:      |                             |                                    |                   |
| (1) - (2)  | \$ 8,192,469,747            | \$ 529,045,064                     | \$ 8,721,514,811  |
| 4. Total Employer Normal Cost<br>as of December 31, 2009 | \$ 65,995,570               | \$ 3,015,419                       | \$ 69,010,989     |

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 Accrued Liability and Amortization Payment Payable as of December 31, 2009**

|   |                  |
|---|------------------|
| 1. Actuarial Accrued Liability as of June 30, 2009  | \$ 8,721,514,811 |
| 2. Actuarial Value of Assets as of June 30, 2009  | \$ 2,157,593,000 |
| 3. Unfunded Actuarial Accrued Liability as of June 30, 2009:<br>(1) - (2)                 | \$ 6,563,921,811 |
| 4. Amortization Period in years   | 28               |
| 5. Amortization Factor at beginning of year *   | 16.7109          |
| 6. Amortization Amount Payable as of December 31, 2009:<br>[ (3) / (5) ] * ( 1.08 ^ 0.5 ) | \$ 408,202,290   |

\* 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, 2009 | \$ 69,010,989  |
| 2. Amortization Payment as of December 31, 2009       | \$ 408,202,290 |
| 3. Annual Required Contribution*: (1) + (2)           | \$ 477,213,279 |

\* 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 26 AND 27 ACCOUNTING INFORMATION**

**D. Development of Net Pension Obligation as of June 30, 2009**

|  |    |               |
|--|----|---------------|
| 1. Net Pension Obligation as of June 30, 2008                  | \$ | 1,006,522,659 |
| 2. Annual Pension Cost for Fiscal Year 2008 - 2009             | \$ | 410,504,146   |
| 3. Fiscal Year 2008 - 2009 Employer Contribution               | \$ | 172,841,000   |
| 4. Net Pension Obligation as of June 30, 2009: (1) + (2) - (3) | \$ | 1,244,185,805 |

**E. Development of Fiscal Year 2009 - 2010 Annual Pension Cost**

|   |    |             |
|---|----|-------------|
| 1. Annual Required Contribution                                 | \$ | 477,213,279 |
| 2. Interest on Net Pension Obligation as of June 30, 2009       | \$ | 99,534,864  |
| 3. Adjustment to the Annual Required Contribution               | \$ | 80,409,832  |
| 4. Fiscal Year 2009 - 2010 Annual Pension Cost: (1) + (2) - (3) | \$ | 496,338,311 |

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<br/>Ended<br/>June 30</u> | <u>Actual<br/>Employer<br/>Contribution</u> | <u>Annual<br/>Required<br/>Contribution</u> | <u>Percent<br/>Contributed</u> | <u>Annual<br/>Pension<br/>Cost</u> | <u>Percent<br/>Contributed</u> |
|-----------------------------------|---|---|--------------------------------|------------------------------------|--------------------------------|
| 2010                              | \$169,680,000                               | \$477,213,279                               | 35.56%*                        | \$496,338,311                      | 34.19%*                        |
| 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                          |
| 2006                              | 150,215,000                                 | 220,820,946                                 | 68.03                          | 221,449,560                        | 67.83                          |
| 2005                              | 151,690,000                                 | 220,820,946                                 | 68.69                          | 221,449,560                        | 68.50                          |
| 2004                              | 132,403,000                                 | 217,001,910                                 | 61.01                          | 219,168,233                        | 60.41                          |

\* Percentage contributed for the year ended June 30, 2010 assumes the actual employer contribution is 8.5% of expected payroll for the Basic System Benefits plus the expected pay-as-you-go amounts for the selected System Administered Benefits.

Please refer to page 13 for a discussion of the benefits not reflected in the above amounts for the years ending on or before June 30, 2006, which may impair the comparison of prior valuation amounts.

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

| Actuarial Valuation Date | (a)<br>Actuarial Value of Assets | (b)<br>Accrued Liability | (c)=(b)-(a)<br>Unfunded Liability | (d)=(a)/(b)<br>Funded Ratio | (e)<br>Annual Salary | (f)=(c)/(e)<br>Unfunded Liability as a % of Annual Salary |
|--------------------------|----------------------------------|--------------------------|-----------------------------------|-----------------------------|----------------------|---|
| 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%  |
| 06/30/2006               |                                  | Not Determined           |                                   |                             | Not Determined       |   |
| 06/30/2005               |                                  | Not Determined           |                                   |                             | Not Determined       |   |
| 06/30/2004               | 2,402,995,000                    | 4,701,907,235            | 2,298,912,235                     | 51.1%                       | 1,293,532,830        | 177.7%  |

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, 2009. The ARC is for the Basic System Benefits and selected System Administered Benefits. See Section I for more information.

|                                |   |
|--------------------------------|---|
| Valuation Date:                | June 30, 2009   |
| Actuarial Cost Method:         | Entry Age Normal  |
| Amortization method:           | 30 years closed, level percent of payroll                       |
| Remaining Amortization Period: | 28 years  |
| Asset valuation method:        | Market Value of Assets  |
| Assumptions:                   |   |
| Investment rate of return      | 8.0%  |
| 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, 2009 Payable to: |    |                    |
| Retirees  | \$ | 399,539,837        |
| Disabled Members                                      |    | 24,734,092         |
| Beneficiaries   |    | 24,976,642         |
| Vested Terminated Members                             |    | 8,149,983          |
| Active Members  |    | <u>432,182,623</u> |
| Total   | \$ | 889,583,177        |
| 2. Present Value of Future Normal Cost                | \$ | 139,201,287        |
| 3. Actuarial Accrued Liability as of June 30, 2009:   |    |                    |
| (1) - (2)   | \$ | 750,381,890        |
| 4. Total Employer Normal Cost                         |    |                    |
| as of December 31, 2009                               | \$ | 13,341,840         |

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 Accrued Liability and Amortization Payment Payable as of December 31, 2009**

|   |    |             |
|---|----|-------------|
| 1. Actuarial Accrued Liability as of June 30, 2009  | \$ | 750,381,890 |
| 2. Actuarial Value of Assets as of June 30, 2009  | \$ | 0           |
| 3. Unfunded Actuarial Accrued Liability as of June 30, 2009:<br>(1) - (2)                 | \$ | 750,381,890 |
| 4. Amortization Period in years   |    | 28          |
| 5. Amortization Factor at beginning of year *   |    | 26.2562     |
| 6. Amortization Amount Payable as of December 31, 2009:<br>[ (3) / (5) ] * ( 1.04 ^ 0.5 ) | \$ | 29,145,207  |

\* 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, 2009 | \$ | 13,341,840 |
| 2. Amortization Payment as of December 31, 2009       | \$ | 29,145,207 |
| 3. Annual Required Contribution*: (1) + (2)           | \$ | 42,487,047 |

\* 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, 2009**

|   |    |            |
|---|----|------------|
| 1. Net OPEB Obligation as of June 30, 2008                  | \$ | 10,836,179 |
| 2. Annual OPEB Cost for Fiscal Year 2008 - 2009             | \$ | 38,033,499 |
| 3. Fiscal Year 2008 - 2009 Employer Contribution            | \$ | 27,823,000 |
| 4. Net OPEB Obligation as of June 30, 2009: (1) + (2) - (3) | \$ | 21,046,678 |

**E. Development of Fiscal Year 2009 - 2010 Annual OPEB Cost**

|  |    |            |
|--|----|------------|
| 1. Annual Required Contribution                              | \$ | 42,487,047 |
| 2. Interest on Net OPEB Obligation as of June 30, 2009       | \$ | 841,867    |
| 3. Adjustment to the Annual Required Contribution            | \$ | 833,652    |
| 4. Fiscal Year 2009 - 2010 Annual OPEB Cost: (1) + (2) - (3) | \$ | 42,495,262 |

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> |
|---------------------------|-------------------------------------|-------------------------------------|----------------------------|-------------------------|----------------------------|
| 2010                      | \$33,439,000                        | \$42,487,047                        | 78.70%*                    | \$42,495,262            | 78.69%*                    |
| 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, 2010 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

| Actuarial Valuation Date | (a)<br>Actuarial Value of Assets | (b)<br>Accrued Liability | (c)=(b)-(a)<br>Unfunded Liability | (d)=(a)/(b)<br>Funded Ratio | (e)<br>Annual Salary | (f)=(c)/(e)<br>Unfunded Liability as a % of Annual Salary |
|--------------------------|----------------------------------|--------------------------|-----------------------------------|-----------------------------|----------------------|---|
| 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, 2009. 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, 2009   |
| Actuarial Cost Method:         | Entry Age Normal  |
| Amortization method:           | 30 years closed, level percent of payroll                       |
| Remaining Amortization Period: | 28 years  |
| Asset valuation method:        | Market Value of Assets  |
| Assumptions:                   |   |
| Investment rate of return      | 4.0%  |
| 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<br/>Vested</u> | <u>Retirees, Disabled<br/>Members, and<br/>Beneficiaries</u> | <u>Total</u> |
|-------------------------------------|---------------------|------------------------------|--|--------------|
| Members as of<br>June 30, 2007      | 48,505              | 791                          | 28,966   | 78,262       |
| Changes                             |                     |                              |  |              |
| Terminated Vested                   | (310)               | 310                          | 0  | 0            |
| Retired & Disabled                  | (4,509)             | (128)                        | 4,637  | 0            |
| Death                               | (178)               | (30)                         | (1,563)  | (1,771)      |
| Disappeared                         | (1,262)             | (1)                          | (62)   | (1,325)      |
| Return/Transfer of<br>Contributions | (434)               | (116)                        | 0  | (550)        |
| Return to Active                    | 164                 | (151)                        | (13)   | 0            |
| New                                 | 4,319               | 0                            | 584  | 4,903        |
| Members as of<br>June 30, 2009      | 46,295 <sup>1</sup> | 675 <sup>2</sup>             | 32,549   | 79,519       |

<sup>1</sup> Includes 302 members on leave of absence without pay who are assumed not to earn additional benefits.

<sup>2</sup> Includes 55 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, 2009 for former participants who terminated employment by June 30, 2009 with less than ten years of service and have not received a return of contributions as of June 30, 2009. Detailed participant information was not provided.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**B. Summary of Active Members as of June 30, 2009**

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

| Age          | Years of Service |              |              |              |              |              |              |            |           |           | Total        |       |
|--------------|------------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|-----------|-----------|--------------|-------|
|              | ≤1               | 1-4          | 5-9          | 10-14        | 15-19        | 20-24        | 25-29        | 30-34      | 35-39     | 40&Up     |              |       |
| 0-24         | 60               | 27           | -            | -            | -            | -            | -            | -          | -         | -         | -            | 87    |
| 25-29        | 209              | 375          | 75           | -            | -            | -            | -            | -          | -         | -         | -            | 659   |
| 30-34        | 86               | 310          | 658          | 42           | -            | -            | -            | -          | -         | -         | -            | 1,096 |
| 35-39        | 43               | 151          | 508          | 378          | 35           | -            | -            | -          | -         | -         | -            | 1,113 |
| 40-44        | 41               | 120          | 267          | 293          | 622          | 65           | -            | -          | -         | -         | -            | 1,408 |
| 45-49        | 25               | 81           | 203          | 213          | 558          | 575          | 104          | 1          | -         | -         | -            | 1,760 |
| 50-54        | 20               | 79           | 161          | 176          | 301          | 438          | 603          | 63         | -         | 1         | -            | 1,840 |
| 55-59        | 7                | 32           | 97           | 97           | 173          | 207          | 304          | 87         | 9         | 1         | -            | 1,014 |
| 60-64        | 1                | 17           | 40           | 32           | 67           | 60           | 67           | 21         | 21        | 10        | -            | 336   |
| 65-69        | 1                | 1            | 8            | 8            | 14           | 22           | 34           | 4          | 2         | 8         | -            | 102   |
| 70&Up        | 2                | 3            | 4            | 8            | 3            | 6            | 3            | 3          | 1         | 5         | -            | 36    |
| <b>Total</b> | <b>495</b>       | <b>1,196</b> | <b>2,019</b> | <b>1,247</b> | <b>1,773</b> | <b>1,371</b> | <b>1,115</b> | <b>179</b> | <b>33</b> | <b>25</b> | <b>9,453</b> |       |

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

| Age            | Years of Service |               |               |               |               |               |               |               |               |               | Average       |        |
|----------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
|                | ≤1               | 1-4           | 5-9           | 10-14         | 15-19         | 20-24         | 25-29         | 30-34         | 35-39         | 40&Up         |               |        |
| 0-24           | 21,138           | 20,457        | -             | -             | -             | -             | -             | -             | -             | -             | -             | 20,927 |
| 25-29          | 20,621           | 21,751        | 26,288        | -             | -             | -             | -             | -             | -             | -             | -             | 21,909 |
| 30-34          | 20,733           | 21,697        | 28,561        | 33,971        | -             | -             | -             | -             | -             | -             | -             | 28,213 |
| 35-39          | 21,405           | 21,981        | 29,292        | 32,632        | 35,704        | -             | -             | -             | -             | -             | -             | 29,331 |
| 40-44          | 20,651           | 21,748        | 28,798        | 32,537        | 33,945        | 35,435        | -             | -             | -             | -             | -             | 31,318 |
| 45-49          | 20,098           | 22,978        | 28,104        | 32,572        | 33,634        | 34,923        | 35,479        | 32,460        | -             | -             | -             | 32,714 |
| 50-54          | 23,003           | 22,225        | 28,322        | 32,354        | 33,655        | 34,373        | 35,389        | 38,268        | -             | 41,340        | -             | 33,358 |
| 55-59          | 34,742           | 24,238        | 27,967        | 32,041        | 33,457        | 33,445        | 34,739        | 36,297        | 37,491        | 32,460        | -             | 33,175 |
| 60-64          | 21,000           | 22,571        | 28,274        | 32,173        | 33,563        | 34,083        | 34,412        | 35,202        | 37,281        | 38,328        | -             | 32,946 |
| 65-69          | 23,160           | 24,360        | 30,692        | 31,954        | 35,485        | 31,751        | 34,662        | 32,715        | 33,060        | 37,808        | -             | 33,549 |
| 70&Up          | 22,986           | 27,772        | 20,199        | 32,152        | 35,092        | 36,360        | 31,708        | 33,616        | 38,640        | 37,152        | -             | 31,874 |
| <b>Average</b> | <b>21,059</b>    | <b>21,946</b> | <b>28,584</b> | <b>32,540</b> | <b>33,785</b> | <b>34,468</b> | <b>35,130</b> | <b>36,716</b> | <b>37,124</b> | <b>37,812</b> | <b>30,681</b> |        |

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

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

| Age          | Years of Service |              |              |              |              |              |              |              |            |           | Total         |       |
|--------------|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|-----------|---------------|-------|
|              | <1               | 1-4          | 5-9          | 10-14        | 15-19        | 20-24        | 25-29        | 30-34        | 35-39      | 40&Up     |               |       |
| 0-24         | 329              | 100          | -            | -            | -            | -            | -            | -            | -          | -         | -             | 429   |
| 25-29        | 804              | 1,570        | 297          | -            | -            | -            | -            | -            | -          | -         | -             | 2,671 |
| 30-34        | 357              | 1,140        | 2,451        | 166          | -            | -            | -            | -            | -          | -         | -             | 4,114 |
| 35-39        | 198              | 685          | 2,011        | 1,285        | 238          | 1            | -            | -            | -          | -         | -             | 4,418 |
| 40-44        | 142              | 497          | 1,309        | 1,228        | 2,394        | 366          | 2            | -            | -          | -         | -             | 5,938 |
| 45-49        | 89               | 347          | 1,027        | 844          | 2,183        | 2,270        | 563          | 3            | -          | -         | -             | 7,326 |
| 50-54        | 57               | 197          | 609          | 607          | 1,151        | 1,315        | 2,415        | 483          | -          | 3         | -             | 6,837 |
| 55-59        | 22               | 86           | 327          | 332          | 654          | 611          | 876          | 482          | 72         | -         | -             | 3,462 |
| 60-64        | 7                | 48           | 77           | 135          | 254          | 234          | 314          | 48           | 63         | 29        | -             | 1,205 |
| 65-69        | 5                | 4            | 25           | 33           | 51           | 74           | 88           | 15           | 9          | 28        | -             | 332   |
| 70&Up        | -                | 1            | 7            | 12           | 15           | 17           | 23           | 9            | 5          | 21        | -             | 110   |
| <b>Total</b> | <b>2,010</b>     | <b>4,673</b> | <b>8,140</b> | <b>4,642</b> | <b>6,940</b> | <b>4,888</b> | <b>4,281</b> | <b>1,038</b> | <b>149</b> | <b>81</b> | <b>36,842</b> |       |

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

| Age            | Years of Service |               |               |               |               |               |               |               |               |               | Average       |        |
|----------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
|                | <1               | 1-4           | 5-9           | 10-14         | 15-19         | 20-24         | 25-29         | 30-34         | 35-39         | 40&Up         |               |        |
| 0-24           | 20,632           | 20,900        | -             | -             | -             | -             | -             | -             | -             | -             | -             | 20,694 |
| 25-29          | 20,854           | 21,612        | 26,034        | -             | -             | -             | -             | -             | -             | -             | -             | 21,876 |
| 30-34          | 20,955           | 21,818        | 28,410        | 33,489        | -             | -             | -             | -             | -             | -             | -             | 28,141 |
| 35-39          | 20,926           | 22,172        | 29,121        | 33,018        | 33,995        | 31,440        | -             | -             | -             | -             | -             | 29,073 |
| 40-44          | 20,957           | 22,244        | 28,901        | 32,474        | 33,967        | 35,456        | 36,030        | -             | -             | -             | -             | 31,342 |
| 45-49          | 22,252           | 22,211        | 28,993        | 32,544        | 33,736        | 34,732        | 35,608        | 32,860        | -             | -             | -             | 32,700 |
| 50-54          | 21,289           | 22,292        | 29,080        | 32,248        | 33,773        | 34,689        | 34,955        | 35,360        | -             | 32,428        | -             | 33,490 |
| 55-59          | 22,364           | 23,505        | 29,055        | 31,816        | 33,344        | 34,003        | 34,803        | 35,640        | 37,030        | -             | -             | 33,309 |
| 60-64          | 21,120           | 22,689        | 28,727        | 31,893        | 33,438        | 34,239        | 34,309        | 36,276        | 37,153        | 37,210        | -             | 33,258 |
| 65-69          | 21,564           | 19,832        | 28,867        | 32,135        | 32,652        | 34,009        | 34,390        | 37,907        | 35,890        | 37,620        | -             | 33,501 |
| 70&Up          | -                | 26,616        | 28,543        | 31,853        | 33,498        | 33,554        | 35,158        | 37,620        | 36,852        | 38,764        | -             | 34,791 |
| <b>Average</b> | <b>20,944</b>    | <b>21,914</b> | <b>28,732</b> | <b>32,576</b> | <b>33,774</b> | <b>34,644</b> | <b>34,911</b> | <b>35,580</b> | <b>37,007</b> | <b>37,577</b> | <b>30,625</b> |        |

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

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

| Age          | Years of Service |              |               |              |              |              |              |              |            |            | Total         |
|--------------|------------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|------------|------------|---------------|
|              | <1               | 1-4          | 5-9           | 10-14        | 15-19        | 20-24        | 25-29        | 30-34        | 35-39      | 40&Up      |               |
| 0-24         | 389              | 127          | -             | -            | -            | -            | -            | -            | -          | -          | 516           |
| 25-29        | 1,013            | 1,945        | 372           | -            | -            | -            | -            | -            | -          | -          | 3,330         |
| 30-34        | 443              | 1,450        | 3,109         | 208          | -            | -            | -            | -            | -          | -          | 5,210         |
| 35-39        | 241              | 836          | 2,517         | 1,663        | 273          | 1            | -            | -            | -          | -          | 5,531         |
| 40-44        | 183              | 617          | 1,576         | 1,521        | 3,016        | 431          | 2            | -            | -          | -          | 7,346         |
| 45-49        | 114              | 428          | 1,230         | 1,057        | 2,741        | 2,845        | 667          | 4            | -          | -          | 9,086         |
| 50-54        | 77               | 276          | 770           | 783          | 1,452        | 1,751        | 3,018        | 546          | -          | 4          | 8,677         |
| 55-59        | 29               | 118          | 424           | 429          | 827          | 818          | 1,180        | 569          | 81         | 1          | 4,476         |
| 60-64        | 8                | 63           | 117           | 167          | 321          | 294          | 381          | 87           | 84         | 39         | 1,541         |
| 65-69        | 6                | 5            | 33            | 41           | 65           | 96           | 122          | 19           | 11         | 36         | 434           |
| 70&Up        | 2                | 4            | 11            | 20           | 18           | 23           | 26           | 12           | 6          | 26         | 148           |
| <b>Total</b> | <b>2,505</b>     | <b>5,869</b> | <b>10,159</b> | <b>5,889</b> | <b>8,713</b> | <b>6,259</b> | <b>5,396</b> | <b>1,217</b> | <b>182</b> | <b>106</b> | <b>46,295</b> |

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

| Age            | Years of Service |               |               |               |               |               |               |               |               |               | Average       |
|----------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                | <1               | 1-4           | 5-9           | 10-14         | 15-19         | 20-24         | 25-29         | 30-34         | 35-39         | 40&Up         |               |
| 0-24           | 20,710           | 20,806        | -             | -             | -             | -             | -             | -             | -             | -             | 20,734        |
| 25-29          | 20,806           | 21,639        | 26,085        | -             | -             | -             | -             | -             | -             | -             | 21,882        |
| 30-34          | 20,912           | 21,792        | 28,442        | 33,586        | -             | -             | -             | -             | -             | -             | 28,156        |
| 35-39          | 21,011           | 22,138        | 29,155        | 32,930        | 34,214        | 31,440        | -             | -             | -             | -             | 29,125        |
| 40-44          | 20,889           | 22,147        | 28,884        | 32,486        | 33,962        | 35,453        | 36,030        | -             | -             | -             | 31,337        |
| 45-49          | 21,780           | 22,356        | 28,846        | 32,549        | 33,715        | 34,771        | 35,566        | 32,760        | -             | -             | 32,703        |
| 50-54          | 21,734           | 22,273        | 28,921        | 32,272        | 33,749        | 34,610        | 35,042        | 35,095        | -             | 34,656        | 33,462        |
| 55-59          | 25,351           | 23,704        | 28,808        | 31,867        | 33,360        | 33,862        | 34,638        | 35,740        | 37,081        | 32,460        | 33,279        |
| 60-64          | 21,105           | 22,657        | 28,572        | 31,946        | 33,464        | 34,207        | 34,327        | 35,939        | 37,185        | 37,497        | 33,190        |
| 65-69          | 21,830           | 20,737        | 29,309        | 32,099        | 33,262        | 33,492        | 34,466        | 36,814        | 35,375        | 37,662        | 33,513        |
| 70&Up          | 22,986           | 27,483        | 25,509        | 31,973        | 33,763        | 34,291        | 34,780        | 36,619        | 37,150        | 38,454        | 34,042        |
| <b>Average</b> | <b>20,966</b>    | <b>21,921</b> | <b>28,703</b> | <b>32,568</b> | <b>33,776</b> | <b>34,606</b> | <b>34,956</b> | <b>35,747</b> | <b>37,028</b> | <b>37,633</b> | <b>30,636</b> |

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

SECTION VII – CENSUS DATA

**C. Summary of Terminated Vested Members as of June 30, 2009**

| <u>Age</u> | <u>Male</u>  |                               | <u>Female</u> |                               | <u>Total</u> |                               |
|------------|--------------|-------------------------------|---------------|-------------------------------|--------------|-------------------------------|
|            | <u>Count</u> | <u>Average Annual Pension</u> | <u>Count</u>  | <u>Average Annual Pension</u> | <u>Count</u> | <u>Average Annual Pension</u> |
| Under 35   | 1            | 3,600                         | 8             | 3,929                         | 9            | 3,893                         |
| 35-39      | 7            | 5,911                         | 27            | 6,094                         | 34           | 6,056                         |
| 40-44      | 34           | 6,877                         | 82            | 6,832                         | 116          | 6,845                         |
| 45-49      | 53           | 8,102                         | 123           | 8,309                         | 176          | 8,247                         |
| 50-54      | 52           | 9,396                         | 98            | 9,891                         | 150          | 9,720                         |
| 55-59      | 41           | 11,348                        | 98            | 10,585                        | 139          | 10,810                        |
| 60-64      | 4            | 9,539                         | 25            | 10,251                        | 29           | 10,153                        |
| 65 & Over  | <u>7</u>     | <u>7,920</u>                  | <u>15</u>     | <u>11,918</u>                 | <u>22</u>    | <u>10,646</u>                 |
| All Ages   | 199          | 8,823                         | 476           | 8,865                         | 675          | 8,853                         |

The Average Annual Pension amounts above are as of June 30, 2009. 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, 2009**

| <u>Age</u>      | <u>Males</u> |  | <u>Females</u> |  | <u>Total</u>  |  |
|-----------------|--------------|--|----------------|--|---------------|--|
|                 | <u>Count</u> | <u>Average Annual Pension<br/>w/o COLAs w/ COLAs</u> | <u>Count</u>   | <u>Average Annual Pension<br/>w/o COLAs w/ COLAs</u> | <u>Count</u>  | <u>Average Annual Pension<br/>w/o COLAs w/ COLAs</u> |
| Under 45        | 3            | 4,353  | 19             | 4,712  | 22            | 4,663  |
| 45-49           | 1            | 15,523   | 13             | 8,565  | 14            | 9,062  |
| 50-54           | 113          | 22,307   | 600            | 21,874   | 713           | 21,942   |
| 55-59           | 976          | 22,023   | 4,207          | 21,256   | 5,183         | 21,401   |
| 60-64           | 1,346        | 18,355   | 4,659          | 17,489   | 6,005         | 17,683   |
| 65-69           | 1,148        | 15,612   | 3,706          | 14,256   | 4,854         | 14,577   |
| 70-74           | 933          | 12,808   | 2,920          | 11,533   | 3,853         | 11,842   |
| 75-79           | 937          | 10,208   | 2,334          | 9,892  | 3,271         | 9,983  |
| 80-84           | 523          | 9,508  | 1,772          | 8,638  | 2,295         | 8,836  |
| 85-89           | 236          | 8,494  | 932            | 8,274  | 1,168         | 8,318  |
| 90-94           | 69           | 8,222  | 330            | 7,869  | 399           | 7,930  |
| 95-99           | 18           | 7,232  | 114            | 7,154  | 132           | 7,164  |
| 100 & Over      | 1            | 17,555   | 26             | 6,993  | 27            | 7,384  |
| <b>All Ages</b> | <b>6,304</b> | <b>15,209</b>  | <b>21,632</b>  | <b>14,813</b>  | <b>27,936</b> | <b>14,903</b>  |
|                 |              | <b>16,248</b>  |                | <b>15,747</b>  |               | <b>15,860</b>  |

The Average Annual Pension amounts above are as of June 30, 2009. In addition, 848 retirees are currently paying annual additional contributions of \$1,179,113 (via a reduced monthly benefit which is not reflected above).

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII - CENSUS DATA

E. Summary of Disabled Members as of June 30, 2009

| Age        | Males |  | Females |  | Total |  |
|------------|-------|--|---------|--|-------|--|
|            | Count | Average Annual Pension<br>w/o COLAs w/ COLAs | Count   | Average Annual Pension<br>w/o COLAs w/ COLAs | Count | Average Annual Pension<br>w/o COLAs w/ COLAs |
| Under 35   | 0     | 0  | 0       | 0  | 0     | 0  |
| 35-39      | 1     | 3,600  | 2       | 3,912  | 3     | 3,808  |
| 40-44      | 4     | 4,762  | 21      | 5,329  | 25    | 5,238  |
| 45-49      | 17    | 7,072  | 56      | 6,873  | 73    | 6,919  |
| 50-54      | 36    | 6,411  | 146     | 6,418  | 182   | 6,417  |
| 55-59      | 50    | 5,543  | 229     | 5,840  | 279   | 5,786  |
| 60-64      | 60    | 5,095  | 259     | 5,394  | 319   | 5,338  |
| 65-69      | 36    | 4,762  | 251     | 4,531  | 287   | 4,560  |
| 70-74      | 31    | 4,940  | 219     | 4,469  | 250   | 4,527  |
| 75-79      | 52    | 4,265  | 238     | 4,310  | 290   | 4,302  |
| 80-84      | 31    | 4,454  | 163     | 4,364  | 194   | 4,379  |
| 85-89      | 13    | 4,275  | 75      | 4,399  | 88    | 4,381  |
| 90-94      | 6     | 4,278  | 30      | 4,305  | 36    | 4,300  |
| 95-99      | 1     | 5,281  | 7       | 4,166  | 8     | 4,306  |
| 100 & Over | 0     | 0  | 1       | 5,059  | 1     | 5,059  |
| All Ages   | 338   | 5,111  | 1,697   | 5,022  | 2,035 | 5,037  |

The Average Annual Pension amounts above are as of June 30, 2009.

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VII – CENSUS DATA**

**F. Summary of Beneficiaries as of June 30, 2009**

| Age       | Males     |  | Females   |  | Total      |  |
|-----------|-----------|--|-----------|--|------------|--|
|           | Count     | Average Annual Pension<br>w/o COLAs w/ COLAs | Count     | Average Annual Pension<br>w/o COLAs w/ COLAs | Count      | Average Annual Pension<br>w/o COLAs w/ COLAs |
| Under 20  | 21        | 3,444  | 33        | 3,423  | 54         | 3,431  |
| 20-24     | 17        | 5,137  | 17        | 3,933  | 34         | 4,535  |
| 25-29     | 2         | 8,159  | 2         | 7,262  | 4          | 7,710  |
| 30-34     | 4         | 2,145  | 2         | 2,622  | 6          | 2,304  |
| 35-39     | 4         | 5,491  | 7         | 2,973  | 11         | 3,889  |
| 40-44     | 10        | 3,036  | 20        | 3,683  | 30         | 3,467  |
| 45-49     | 13        | 3,512  | 20        | 4,079  | 33         | 3,855  |
| 50-54     | 36        | 4,106  | 48        | 4,897  | 84         | 4,558  |
| 55-59     | 50        | 4,869  | 63        | 5,910  | 113        | 5,450  |
| 60-64     | 94        | 4,741  | 149       | 5,198  | 243        | 5,021  |
| 65-69     | 100       | 4,721  | 161       | 4,912  | 261        | 4,839  |
| 70-74     | 124       | 4,118  | 259       | 4,494  | 383        | 4,372  |
| 75-79     | 168       | 4,157  | 292       | 4,042  | 460        | 4,084  |
| 80-84     | 170       | 3,810  | 235       | 3,806  | 405        | 3,808  |
| 85-89     | 137       | 3,738  | 154       | 3,547  | 291        | 3,637  |
| 90 & Over | <u>80</u> | <u>3,647</u>                                 | <u>86</u> | <u>2,997</u>                                 | <u>166</u> | <u>3,310</u>                                 |
| All Ages  | 1,030     | 4,128  | 1,548     | 4,258  | 2,578      | 4,206  |
|           |           | 4,406  |           | 4,534  |            | 4,483  |

The Average Annual Pension amounts above are as of June 30, 2009.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2009

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, 2009

- 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, 2009

#### 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, 2009

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, 2009

- (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, 2009

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 will receive 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, 2009

#### 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 8.5% of Compensation (Act 91, Section 47).

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

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**PUERTO RICO TEACHERS RETIREMENT SYSTEM**

**SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS**  
**AS OF JUNE 30, 2009**

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. 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, 2009

Interest: 8.00% per annum, net of investment expenses, for GASB 25 and 27.  
4.00% per annum for GASB 45.

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, 2009**

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, 2009**

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         |

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.

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**SECTION IX -- SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2009**

Post-retirement Healthy Mortality: Rates which vary by gender are assumed for healthy retirees and beneficiaries. The rates are projected on a generational basis starting in 2005 using Scale AA. Illustrative rates are shown below.

| Age | Males | Females |
|-----|-------|---------|
| 50  | 0.23% | 0.19%   |
| 55  | 0.40  | 0.31    |
| 60  | 0.71  | 0.56    |
| 65  | 1.10  | 0.81    |
| 70  | 1.69  | 1.17    |
| 75  | 2.94  | 1.93    |
| 80  | 5.20  | 3.36    |
| 85  | 9.16  | 5.77    |
| 90  | 15.61 | 9.90    |
| 95  | 23.04 | 15.86   |
| 100 | 30.16 | 23.55   |

Post-retirement Disabled Mortality: Rates which vary by gender are assumed for disabled retirees. Illustrative rates are shown below.

| Age | Males | Females |
|-----|-------|---------|
| 40  | 1.74% | 0.77%   |
| 45  | 1.74  | 0.77    |
| 50  | 2.23  | 1.19    |
| 55  | 2.73  | 1.70    |
| 60  | 3.23  | 2.24    |
| 65  | 3.86  | 2.88    |
| 70  | 4.81  | 3.87    |
| 75  | 6.31  | 5.37    |
| 80  | 8.41  | 7.43    |
| 85  | 10.89 | 10.30   |
| 90  | 14.10 | 14.39   |
| 95  | 20.57 | 19.99   |
| 100 | 26.50 | 24.40   |

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

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2009

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 2009, this amount is \$25,511,000.

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, 2009 less the provided years of creditable service.

If not provided by the System, benefits for new retired and terminated vested participants were estimated based on the provided years of credited service as of June 30, 2007 plus one year and the monthly salary reported as of June 30, 2007.

For new retired participants receiving the \$400 minimum benefit, the portion of the benefit attributable to the increase in the minimum benefit from \$300 to \$400 per month was assumed to be \$50 per month (and thus paid by the General Fund of the Commonwealth of Puerto Rico instead of the System).

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2009

Benefits for continuing terminated vested members continue to be estimated based on the provided years of creditable service and the last monthly salary.

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 date 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: None.

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## PUERTO RICO TEACHERS RETIREMENT SYSTEM

### SECTION X – SUMMARY OF ACTUARIAL METHODS AS OF JUNE 30, 2009

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, 2009

#### Asset Valuation Method

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

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