

PUERTO RICO TEACHERS RETIREMENT SYSTEM

June 30, 2010 Actuarial Valuation Report

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.



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

Tel +1 610.687.5644
Fax +1 610.687.4236

www.milliman.com

March 8, 2011

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

Dear Mr. Mayol-Kaufmann:

This report presents the results of the actuarial valuation of the Puerto Rico Teachers Retirement System (PRTS) as of June 30, 2010. 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, 2010 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.

This report was prepared solely to provide assistance to PRTS. Milliman and PRTS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTS recommend that any third party recipient of this report be aided by its own actuary or other qualified professional when reviewing the Milliman report.

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

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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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 25th to 75th 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

PUERTO RICO TEACHERS RETIREMENT SYSTEM

TABLE OF CONTENTS

	<u>Page</u>
<u>SECTION I</u> - SUMMARY	1
Subsection A - Summary of Principal Results	1
Subsection B - General Discussion	4
Subsection C - Discussion of Supporting Exhibits	10
<u>SECTION II</u> - SYSTEM ASSETS	16
Subsection A - Market Value of Assets	16
Subsection B - Reconciliation of Market Value of Assets	17
Subsection C - Development of Actuarial Value of Assets	17
Subsection D - Estimated Annual Rate of Return	18
Subsection E - Estimated Historical Rates of Return	18
<u>SECTION III</u> - MANAGEMENT INFORMATION	19
Subsection A - Allocation of Assets for Basic System Benefits	19
Subsection B - Projected Cash Flows for Basic System Benefits	20
<u>SECTION IV</u> - BASIC SYSTEM BENEFITS INFORMATION	21
Subsection A - Development of Present Value of Benefits	21
Subsection B - Development of Actuarial Accrued Liability	22
Subsection C - Development of Employer Normal Cost	23
Subsection D - Development of Unfunded Actuarial Accrued Liability and Amortization Payment	24
Subsection E - Development of Annual Required Contribution	24
<u>SECTION V</u> - GASB 25 AND 27 ACCOUNTING INFORMATION	25
Subsection A - Benefit Obligations	25
Subsection B - Development of Unfunded Actuarial Accrued Liability and Amortization Payment	26
Subsection C - Development of Annual Required Contribution	26
Subsection D - Development of Net Pension Obligation	27
Subsection E - Development of Annual Pension Cost	27

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

TABLE OF CONTENTS

	<u>Page</u>
Subsection F - Schedule of Employer Contributions	28
Subsection G - Schedule of Funding Progress	29
Subsection H - Additional Information	30
<u>SECTION VI</u> - GASB 45 ACCOUNTING INFORMATION	31
Subsection A - Benefit Obligations	31
Subsection B - Development of Unfunded Actuarial Accrued Liability and Amortization Payment	32
Subsection C - Development of Annual Required Contribution	32
Subsection D - Development of Net OPEB Obligation	33
Subsection E - Development of Annual OPEB Cost	33
Subsection F - Schedule of Employer Contributions	34
Subsection G - Schedule of Funding Progress	35
Subsection H - Additional Information	36
<u>SECTION VII</u> - CENSUS DATA	37
Subsection A - Reconciliation with Prior Valuation	37
Subsection B - Summary of Active Members	38
Subsection C - Summary of Terminated Vested Members	41
Subsection D - Summary of Retirees	42
Subsection E - Summary of Disabled Members	43
Subsection F - Summary of Beneficiaries	44
<u>SECTION VIII</u> - SUMMARY OF PRINCIPAL PLAN PROVISIONS	45
<u>SECTION IX</u> - ACTUARIAL ASSUMPTIONS	53
<u>SECTION X</u> - ACTUARIAL METHODS	59

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

A. Summary of Principal Results of June 30, 2010 Actuarial Valuation (*\$ amounts in thousands*)

	Basic System Pension <u>Benefits only</u>	System Administered <u>Pension Benefits only</u>	GASB 25 & 27 Accounting (Basic System and System Administered <u>Pension Benefits</u>)	GASB 45 Accounting (Other Postemployment <u>Benefits</u>)
Present Value of Benefits ¹	\$10,431,236	\$546,825	\$10,978,061	\$817,898
Actuarial Accrued Liability	8,754,875	524,901	9,279,776	694,230
Actuarial Value of Assets	<u>2,221,977</u>	<u>0</u>	<u>2,221,977</u>	<u>0</u>
Unfunded Actuarial Accrued Liability	6,532,898	524,901	7,057,799	694,230
Employer Normal Cost as a percent of payroll	77,880 5.68%	2,887 0.21%	80,767 5.89%	12,028 0.88%
Annual Required Contribution (ARC) as a percent of payroll	492,009 35.90%	36,161 2.64%	528,170 38.54%	39,925 2.91%
Annual Pension / OPEB Cost as a percent of payroll	N/A N/A	N/A N/A	550,399 40.17%	39,891 2.91%
Employer Contributions (<i>estimated</i>) as a percent of payroll	116,479 8.50%	48,976 3.57%	165,455 12.07%	32,203 2.35%
Portion of ARC not covered (<i>estimated</i>) as a percent of payroll	375,530 27.40%	(12,815) (0.93)%	362,715 26.47%	7,722 0.56%

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

	June 30, 2009 <u>Valuation</u>	June 30, 2010 <u>Valuation</u>
<i>GASB 25 & 27 Accounting (\$ amounts in thousands)</i>		
Present Value of Benefits ¹	\$10,405,883	\$10,978,061
Actuarial Accrued Liability	8,721,515	9,279,776
Actuarial Value of Assets	<u>2,157,593</u>	<u>2,221,977</u>
Unfunded Actuarial Accrued Liability	6,563,922	7,057,799
Employer Normal Cost as a percent of payroll	69,011 4.87%	80,767 5.89%
Annual Required Contribution for upcoming fiscal year as a percent of payroll	477,213 33.65%	528,170 38.54%

<i>GASB 45 Accounting (\$ amounts in thousands)</i>		
Present Value of Benefits ¹	\$889,583	\$817,898
Actuarial Accrued Liability	750,382	694,230
Actuarial Value of Assets	<u>0</u>	<u>0</u>
Unfunded Actuarial Accrued Liability	750,382	694,230
Employer Normal Cost as a percent of payroll	13,342 0.94%	12,028 0.88%
Annual Required Contribution for upcoming fiscal year as a percent of payroll	42,487 3.00%	39,925 2.91%

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

	June 30, 2009 <u>Valuation</u>	June 30, 2010 <u>Valuation</u>
<i>Participant Data</i>		
<u>Active Members</u>		
Number	46,295	44,679
Average Salary	\$30,636	\$30,671
Total Annual Salary	\$1,418,304,104	\$1,370,343,618
<u>Retirees</u>		
Number	27,936	28,799
Average Monthly Basic System Benefit	\$1,242	\$1,283
Average Monthly System Administered Benefit	\$80	\$76
<u>Disabled Members</u>		
Number	2,035	2,061
Average Monthly Basic System Benefit	\$420	\$430
Average Monthly System Administered Benefit	\$74	\$71
<u>Beneficiaries</u>		
Number	2,578	2,744
Average Monthly Basic System Benefit	\$351	\$368
Average Monthly System Administered Benefit	\$23	\$20
<u>Terminated Vested Members</u>		
Number	675	769
Average Monthly Basic System Benefit	\$738	\$815

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

B. General Discussion

Basic System Benefits

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

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

Annuity benefits are subject to a \$300 monthly minimum. The statutory funding requirement for these benefits 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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, 2010 actuarial valuation of the Basic System Benefits and have prepared accounting results for them based on GASB 25 and 27 rules.

The FY 2010-2011 ARC for the Basic System Benefits only based on GASB 25 and 27 rules would be \$492.0 million, which equals 35.90% of payroll. The ARC represents the portion of the cost of PRTRS’ Basic System Benefits that employers should pay in order for PRTRS to be actuarially funded in accordance with GASB’s required minimum parameters.; i.e., the ARC has been reduced to reflect the fact that active members contribute 9% of pay to the system. The employer portion of the statutory funding requirement, which is 8.5% of payroll, is less than the ARC by 27.40% of payroll, or \$375.5 million.

As shown in Subsection D of Section IV, PRTRS has Unfunded Actuarial Accrued Liabilities (UAAL) of \$6.5 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

GASB 25 and 27 Accounting Information

We have performed a June 30, 2010 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 2010-2011 ARC under GASB 25 and 27 is \$528.2 million, which equals 38.54% of payroll. This includes the Basic System Benefits and the System Administered Benefits (excluding the Medical Insurance Plan Contribution). The FY 2010-2011 APC under GASB 27 is \$550.4 million, which equals 40.17% of payroll.

As shown in Subsection B of Section V, the Unfunded Actuarial Accrued Liability on a GASB 25 and 27 basis is \$7.1 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, 2010 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 2010-2011 ARC for the Medical Insurance Plan Contribution under GASB 45 is \$39.9 million, which equals 2.91% of payroll. The FY 2010-2011 Annual OPEB Cost under GASB 45 is \$39.9 million, which equals 2.91% 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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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 \$694 million.

Gain/Loss Analysis

Our analysis of System experience from June 30, 2009 to June 30, 2010 resulted in a liability loss of \$40 million for Basic System Benefits (e.g. – the June 30, 2009 liability of \$8.19 billion was expected to increase to \$8.52 billion as of June 30, 2010, and instead increased to \$8.56 billion prior to the assumption change).

Major sources of gains and losses are as follows:

1. \$5 million loss on new entrants
2. \$10 million loss on roughly 100 “pop-up” retirees who were not in the June 30, 2009 census data
3. \$10 million loss on changes among participants in pay status including benefit true-ups for approximately 240 retirees for whom benefits were estimated in the prior valuation and mortality experience
4. \$85 million loss on roughly 1,300 active members who retired since the prior valuation
5. \$130 million gain due to salary increases less than expected among active members
6. \$60 million loss from all other sources, including a correction in credited service reported for active members that resulted in most active members earning 1.2 years of creditable service since the prior valuation (instead of one year)

Further discussion is warranted on Item 4.

For Item 4, possible explanations for liability losses attributable to individual members include purchases of service (which are offset to some extent on the asset side by the member’s purchase price), retirement incentives, and data clean-up that occurred during the benefit calculation process when the member retired.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

Changes in Assumptions since Prior Valuation

Because of the liability loss on new retirees that occurred in the prior valuation, we requested that the System collect supplemental information as members retire and provide it to us for our use in this valuation. After reviewing this information, an additional service purchase assumption was implemented with this valuation and assumes that 50% of retiring active members who had not attained 30 years of creditable service will purchase enough years of service upon retirement to attain 30 years of creditable service. The 50% was selected based on input from the System that on an overall basis approximately 85% of retired members are receiving a merit pension (which requires 30 years of creditable service). The 50% assumption assumes this percentage is not expected to change in future years. This change increased the Annual Required Contribution under GASB 25 & 27 by about \$24 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 25.4%. For retirees, disabled members, and beneficiaries, the solvency percentage is 12.0%. Vested terminated members with rights to deferred pensions and active members have solvency percentages of 50.2% and 40.2%, 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

Cash Flow Projection for Basic System Benefits

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

The table shown in Subsection B of Section III 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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, 2010, 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, 2009 to June 30, 2010.

Subsection C summarizes the development of the Actuarial Value of Assets as of June 30, 2010. 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, 2009 to June 30, 2010 was 15.89% 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, 2010.

Management Information

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

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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, 2011 (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, 2010.

Subsection B summarizes the development of the Actuarial Accrued Liability as of June 30, 2010.

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 (27 years remain as of June 30, 2010) 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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, 2011 (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, 2010 and Employer Normal Cost as of December 31, 2010.

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 (27 years remain as of June 30, 2010) 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, 2010. 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, 2011. 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, 2010 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 2010-2011 contribution percentage assumes that employer contributions for Basic System Benefits will remain at the statutory level of 8.5% of payroll and that employer

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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. Consequently, the ratios of Actual Employer Contributions to ARCs and APCs shown in this exhibit for the fiscal years ending June 30, 2005 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, 2011.

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, 2011 for the Medical Insurance Plan Contribution.

Subsection A summarizes the development of the Actuarial Accrued Liability as of June 30, 2010 and Employer Normal Cost as of December 31, 2010.

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 (27 years remain as of June 30, 2010) 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

Subsection D summarizes the development of the Net OPEB Obligation (NOO) as of June 30, 2010. 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, 2011. 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, 2010 less an amortization of this NOO.

Subsection F shows a four-year history of the ARC, AOC, and the percentage contributed. This schedule is required by GASB Statements No. 45. The FY 2010-2011 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 four-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, 2011.

Census Data

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

Summary of Principal Plan Provisions

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION II - SYSTEM ASSETS

A. Market Value of Assets as of June 30, 2010

1. Assets	
Cash	\$ 75,981,000
Corporate and Government Bonds	397,109,000
Stocks	1,295,232,000
Private Equity Investments	26,683,000
Total Loans to Plan Members	409,879,000
Accounts Receivable	61,001,000
Capital Assets	22,970,000
Other Assets	<u>832,000</u>
Total	\$ 2,289,687,000
2. Total Liabilities	\$ 67,710,000
3. Market Value of Assets as of June 30, 2010: (1) - (2)	\$ 2,221,977,000

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION II - SYSTEM ASSETS

B. Reconciliation of Market Value of Assets from June 30, 2009 to June 30, 2010

1. Market Value of Assets as of June 30, 2009	\$	2,157,593,000
2. Additions		
a. Contributions		
Member Contributions	\$	129,888,000
Employer Contributions		118,127,000
Transfers In		1,265,000
Special		<u>46,572,000</u>
Total Contributions	\$	295,852,000
b. Investment Income		
Interest Income	\$	61,303,000
Dividends Income		10,111,000
Net Appreciation of Investments		203,265,000
Other Income		52,454,000
Investment Related Expenses		<u>(4,735,000)</u>
Net Investment Income	\$	322,398,000
Total Additions	\$	618,250,000
3. Decreases		
Refund of Member Contributions	\$	7,847,000
Annuities and Death Benefits		470,683,000
Special Benefits		47,870,000
Administrative Expenses		<u>27,466,000</u>
Total	\$	553,866,000
4. Net Increase (Decrease) in Market Value of Assets	\$	64,384,000
5. Market Value of Assets as of June 30, 2010	\$	2,221,977,000

C. Development of Actuarial Value of Assets as of June 30, 2010

The Actuarial Value of Assets as of June 30, 2010 is equal to the Market Value of Assets as of June 30, 2010 of \$2,221,977,000.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION II - SYSTEM ASSETS

D. Estimated Annual Rate of Return for year ending June 30, 2010

	<u>Market Value</u>
1. Value of Assets as of June 30, 2009	\$ 2,157,593,000
2. Total Contributions	295,852,000
3. Benefit Payments and Expenses	553,866,000
4. Value of Assets as of June 30, 2010	2,221,977,000
5. Non-Investment Increment: (2) - (3)	(258,014,000)
6. Investment Increment: (4) - (1) - (5)	322,398,000
7. Time Weighted Value: (1) +.5 * (5)	2,028,586,000
8. Estimated Annual Rate of Return: (6) / (7)	15.89%

E. Estimated Historical Rates of Return

<u>Plan Year Ending</u>	<u>Market Value</u>
June 30, 2010	15.89%
June 30, 2009	-16.38%
June 30, 2008	-6.45%
June 30, 2007	17.50%
June 30, 2006	13.44%
5-year Compounded Annual Return	3.86%

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION III - MANAGEMENT INFORMATION

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

Membership Group	Actuarial Accrued Liability	Allocated Assets *	Solvency Percentage
1. Retirees, Disabled Members, and Beneficiaries	\$4,657,753,872	\$ 557,105,098	12.0%
2. Vested Terminated Members	52,487,658	26,333,157	50.2%
3. Active Members	4,022,139,991	1,616,045,164	40.2%
4. Former Members due a refund of contributions	<u>22,493,581</u>	<u>22,493,581</u>	<u>100.0%</u>
5. Total	\$8,754,875,102	\$ 2,221,977,000	25.4%

* 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION III - MANAGEMENT INFORMATION

B. Projected Cash Flows for Basic System Benefits

<u>Plan Year Ending</u>	<u>Estimated Payroll</u>	<u>Estimated Member and Employer Contributions</u>	<u>Estimated Benefit Payments and Administrative Expenses</u>	<u>Net Cash Flow</u>	<u>Estimated Net Plan Assets at Year-End</u>
06/30/2011	1,370,343,618	239,810,134	513,333,258	(273,523,124)	2,115,481,591
06/30/2012	1,418,305,645	248,203,488	535,383,600	(287,180,112)	1,986,273,792
06/30/2013	1,467,946,343	256,890,610	559,612,753	(302,722,143)	1,830,577,616
06/30/2014	1,519,324,465	265,881,782	585,638,539	(319,756,757)	1,644,722,855
06/30/2015	1,572,500,821	275,187,644	613,536,424	(338,348,780)	1,424,678,317
06/30/2016	1,627,538,350	284,819,212	643,043,848	(358,224,636)	1,166,374,621
06/30/2017	1,684,502,192	294,787,883	674,053,648	(379,265,765)	865,540,045
06/30/2018	1,743,459,769	305,105,459	706,841,136	(401,735,677)	517,287,287
06/30/2019	1,804,480,861	315,784,150	742,048,212	(426,264,062)	115,683,662
06/30/2020	1,867,637,691	326,836,596	781,708,773	(454,872,177)	(347,778,678)
06/30/2021	1,933,005,010	338,275,877	825,620,621	(487,344,744)	(882,064,486)

Notes:

- Estimated Plan Assets at Year-End assumes that the investment return assumption of 8.0% is met.
- 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV - BASIC SYSTEM BENEFITS INFORMATION

A. Development of Present Value of Benefits as of June 30, 2010

1. Projected Benefits Payable to Retirees and Beneficiaries	
Retirees	\$ 4,472,365,596
Disabled Members	89,567,811
Beneficiaries	<u>95,820,465</u>
Total	\$ 4,657,753,872
2. Projected Benefits for Vested Terminated Members	52,487,658
3. Projected Benefits for Active Members	
Retirement	\$ 5,555,669,316
Disability	52,549,696
Pre Retirement Death	70,270,276
Return of Members' Contributions	13,465,058
Vested Withdrawal	<u>6,546,953</u>
Total	\$ 5,698,501,299
4. Return of Contributions due to former Members	\$ 22,493,581
5. Total Present Value of Benefits: (1) + (2) + (3) + (4)	\$ 10,431,236,410

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV - BASIC SYSTEM BENEFITS INFORMATION

B. Development of Actuarial Accrued Liability as of June 30, 2010

1. Total Present Value of Benefits	\$ 10,431,236,410
2. Present Value of Future Total Normal Cost	
Retirement	\$ 1,553,173,528
Disability	22,344,260
Pre Retirement Death	32,440,610
Return of Members' Contributions	64,389,993
Vested Withdrawal	<u>4,012,917</u>
Total	\$ 1,676,361,308
3. Present Value of Future Active Member Contributions	\$ 1,207,796,772
4. Present Value of Future Employer Normal Cost: (2) - (3)	\$ 468,564,536
5. Actuarial Accrued Liability: (1) - (2)	\$ 8,754,875,102

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV - BASIC SYSTEM BENEFITS INFORMATION

C. Development of Employer Normal Cost Payable as of December 31, 2010

1. Total Normal Cost as of December 31, 2010	
Retirement	\$ 159,553,821
Disability	2,282,712
Pre Retirement Death	3,467,666
Return of Members' Contributions	6,618,217
Vested Withdrawal	<u>403,840</u>
Total	\$ 172,326,256
2. Expected Member Contributions	\$ 120,922,300
3. Load for Administrative Expenses:	\$ 26,476,000
4. Total Employer Normal Cost as of December 31, 2010: (1) - (2) + (3)	\$ 77,879,956

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

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, 2010

1. Actuarial Accrued Liability as of June 30, 2010	\$ 8,754,875,102
2. Actuarial Value of Assets as of June 30, 2010	\$ 2,221,977,000
3. Unfunded Actuarial Accrued Liability as of June 30, 2010: (1) - (2)	\$ 6,532,898,102
4. Amortization Period in years	27
5. Amortization Factor at beginning of year *	16.3939
6. Amortization Amount Payable as of December 31, 2010: [(3) / (5)] * (1.08 ^ 0.5)	\$ 414,128,844

* 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, 2010	\$ 77,879,956
2. Amortization Payment as of December 31, 2010	\$ 414,128,844
3. Annual Required Contribution*: (1) + (2)	\$ 492,008,800

* Assumes payments made throughout the year.

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION

A. Benefit Obligations

	<u>Basic System Benefits</u>	<u>System Administered Benefits</u>	<u>Total</u>
1. Projected Benefits as of June 30, 2010 Payable to:			
Retirees	\$ 4,472,365,596	\$ 393,202,207	\$ 4,865,567,803
Disabled Members	89,567,811	23,877,691	113,445,502
Beneficiaries	95,820,465	9,276,502	105,096,967
Vested Terminated Members	52,487,658	3,232,656	55,720,314
Return of Contributions due to former Members	22,493,581	0	22,493,581
Active Members	<u>5,698,501,299</u>	<u>117,235,976</u>	<u>5,815,737,275</u>
Total	\$ 10,431,236,410	\$ 546,825,032	\$ 10,978,061,442
2. Present Value of Future Normal Cost	\$ 1,676,361,308	\$ 21,924,161	\$ 1,698,285,469
3. Actuarial Accrued Liability as of June 30, 2010:			
(1) - (2)	\$ 8,754,875,102	\$ 524,900,871	\$ 9,279,775,973
4. Total Employer Normal Cost			
as of December 31, 2010	\$ 77,879,956	\$ 2,886,797	\$ 80,766,753

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION

B. Development of Unfunded Actuarial Accrued Liability and Amortization Payment Payable as of December 31, 2010

1. Actuarial Accrued Liability as of June 30, 2010	\$	9,279,775,973
2. Actuarial Value of Assets as of June 30, 2010	\$	2,221,977,000
3. Unfunded Actuarial Accrued Liability as of June 30, 2010: (1) - (2)	\$	7,057,798,973
4. Amortization Period in years		27
5. Amortization Factor at beginning of year *		16.3939
6. Amortization Amount Payable as of December 31, 2010: [(3) / (5)] * (1.08 ^ 0.5)	\$	447,402,988

* 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, 2010	\$	80,766,753
2. Amortization Payment as of December 31, 2010	\$	447,402,988
3. Annual Required Contribution*: (1) + (2)	\$	528,169,741

* 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION

D. Development of Net Pension Obligation as of June 30, 2010

1. Net Pension Obligation as of June 30, 2009	\$	1,244,185,805
2. Annual Pension Cost for Fiscal Year 2009 - 2010	\$	496,338,311
3. Fiscal Year 2009 - 2010 Employer Contribution	\$	166,384,000
4. Net Pension Obligation as of June 30, 2010: (1) + (2) - (3)	\$	1,574,140,116

E. Development of Fiscal Year 2010 - 2011 Annual Pension Cost

1. Annual Required Contribution	\$	528,169,741
2. Interest on Net Pension Obligation as of June 30, 2010	\$	125,931,209
3. Adjustment to the Annual Required Contribution	\$	103,701,458
4. Fiscal Year 2010 - 2011 Annual Pension Cost: (1) + (2) - (3)	\$	550,399,492

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION

F. Schedule of Employer Contributions

<u>Year Ended June 30</u>	<u>Actual Employer Contribution</u>	<u>Annual Required Contribution</u>	<u>Percent Contributed</u>	<u>Annual Pension Cost</u>	<u>Percent Contributed</u>
2011	\$165,455,000	\$528,169,741	31.33%*	\$550,399,492	30.06%*
2010**	166,384,000	477,213,279	34.87	496,338,311	33.52
2009	172,841,000	393,871,256	43.88	410,504,146	42.10
2008	159,101,000	341,495,050	46.59	355,742,842	44.72
2007	147,597,000	341,159,718	43.26	351,814,817	41.95
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

* Percentage contributed for the year ended June 30, 2011 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.

** For the fiscal year ending June 30, 2010, the Actual Employer Contribution for Basic System Benefits was \$118,127,000 and for System Administered Benefits was \$48,257,000. The Annual Required Contribution for Basic System Benefits was \$441,297,193 and for System Administered Benefits was \$35,916,086.

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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 25 AND 27 ACCOUNTING INFORMATION

G. Schedule of Funding Progress

	(a)	(b)	(c)=(b)-(a)	(d)=(a)/(b)	(e)	(f)=(c)/(e)
Actuarial Valuation <u>Date</u>	Actuarial Value of <u>Assets</u>	Accrued <u>Liability</u>	Unfunded <u>Liability</u>	Funded <u>Ratio</u>	Annual <u>Salary</u>	Unfunded Liability as a % of Annual <u>Salary</u>
06/30/2010	\$2,221,977,000	\$9,279,775,973	\$7,057,798,973	23.9%	\$1,370,343,618	515.0%
06/30/2009	2,157,593,000	8,721,514,811	6,563,921,811	24.7%	1,418,304,104	462.8%
06/30/2008		Not Determined			Not Determined	
06/30/2007	3,162,720,000	7,755,817,493	4,593,097,493	40.8%	1,369,770,012	335.3%
06/30/2006		Not Determined			Not Determined	
06/30/2005		Not Determined			Not Determined	

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

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, 2011. The ARC is for the Basic System Benefits and selected System Administered Benefits. See Section I for more information.

Valuation Date:	June 30, 2010
Actuarial Cost Method:	Entry Age Normal
Amortization method:	30 years closed, level percent of payroll
Remaining Amortization Period:	27 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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI - GASB 45 ACCOUNTING INFORMATION

A. Benefit Obligations

1. Projected Benefits as of June 30, 2010 Payable to:		
Retirees	\$	381,700,882
Disabled Members		21,059,874
Beneficiaries		3,113,124
Vested Terminated Members		8,953,849
Active Members		<u>403,070,550</u>
Total	\$	817,898,279
2. Present Value of Future Normal Cost	\$	123,668,397
3. Actuarial Accrued Liability as of June 30, 2010:		
(1) - (2)	\$	694,229,882
4. Total Employer Normal Cost as of December 31, 2010	\$	12,028,131

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI - GASB 45 ACCOUNTING INFORMATION

B. Development of Unfunded Actuarial Accrued Liability and Amortization Payment Payable as of December 31, 2010

1. Actuarial Accrued Liability as of June 30, 2010	\$	694,229,882
2. Actuarial Value of Assets as of June 30, 2010	\$	0
3. Unfunded Actuarial Accrued Liability as of June 30, 2010: (1) - (2)	\$	694,229,882
4. Amortization Period in years		27
5. Amortization Factor at beginning of year *		25.3782
6. Amortization Amount Payable as of December 31, 2010: [(3) / (5)] * (1.04 ^ 0.5)	\$	27,897,106

* 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, 2010	\$	12,028,131
2. Amortization Payment as of December 31, 2010	\$	27,897,106
3. Annual Required Contribution*: (1) + (2)	\$	39,925,237

* 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI - GASB 45 ACCOUNTING INFORMATION

D. Development of Net OPEB Obligation as of June 30, 2010

1. Net OPEB Obligation as of June 30, 2009	\$	21,046,678
2. Annual OPEB Cost for Fiscal Year 2009 - 2010	\$	42,495,262
3. Fiscal Year 2009 - 2010 Employer Contribution	\$	28,427,000
4. Net OPEB Obligation as of June 30, 2010: (1) + (2) - (3)	\$	35,114,940

E. Development of Fiscal Year 2010 - 2011 Annual OPEB Cost

1. Annual Required Contribution	\$	39,925,237
2. Interest on Net OPEB Obligation as of June 30, 2010	\$	1,404,598
3. Adjustment to the Annual Required Contribution	\$	1,439,012
4. Fiscal Year 2010 - 2011 Annual OPEB Cost: (1) + (2) - (3)	\$	39,890,823

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

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>
2011	\$32,203,000	\$39,925,237	80.66%*	\$39,890,823	80.73%*
2010	28,427,000	42,487,047	66.91	42,495,262	66.89
2009	27,823,000	38,015,446	73.19	38,033,499	73.15
2008	26,000,000	36,836,179	70.58	36,836,179	70.58

* Percentage contributed for the year ended June 30, 2011 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI - GASB 45 ACCOUNTING INFORMATION

G. Schedule of Funding Progress

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

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

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, 2011. 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, 2010
Actuarial Cost Method:	Entry Age Normal
Amortization method:	30 years closed, level percent of payroll
Remaining Amortization Period:	27 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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. Milliman and PRTRS recommend that any third party recipient of this report be aided by its own actuary or qualified professional when reviewing the Milliman report.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – CENSUS DATA

A. Reconciliation with Prior Valuation

	<u>Active</u>	Terminated <u>Vested</u>	Retirees, Disabled Members, and <u>Beneficiaries</u>	<u>Total</u>
Members as of June 30, 2009	46,295	675	32,549	79,519
Changes				
Terminated Vested	(274)	274	0	0
Retired & Disabled	(1,361)	(41)	1,402	0
Death	(64)	(9)	(726)	(799)
Disappeared	(1,563)	0	(30)	(1,593)
Return/Transfer of Contributions	(220)	(47)	0	(267)
Return to Active	382	(83)	(10)	289
New	1,484	0	419	1,903
Members as of June 30, 2010	44,679 ¹	769	33,604	79,052

¹ Includes 67 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, 2010 for former participants who terminated employment by June 30, 2010 with less than ten years of service and have not received a return of contributions as of June 30, 2010. Detailed participant information was not provided.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – CENSUS DATA

B. Summary of Active Members as of June 30, 2010

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	34	23	-	-	-	-	-	-	-	-	-	57
25-29	124	372	85	-	-	-	-	-	-	-	-	581
30-34	49	283	610	65	-	-	-	-	-	-	-	1,007
35-39	24	126	438	468	44	-	-	-	-	-	-	1,100
40-44	23	103	268	316	500	91	-	-	-	-	-	1,301
45-49	16	75	194	219	420	657	118	-	-	-	-	1,699
50-54	15	70	154	163	252	494	581	77	-	-	-	1,806
55-59	12	32	85	111	164	190	326	131	7	1	1	1,059
60-64	4	13	31	37	69	83	82	22	19	11	11	371
65-69	1	2	10	11	18	22	34	7	4	6	6	115
70&Up	1	4	3	5	4	6	4	5	2	6	6	40
Total	303	1,103	1,878	1,395	1,471	1,543	1,145	242	32	24	24	9,136

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	21,237	20,746	-	-	-	-	-	-	-	-	-	21,039
25-29	21,068	21,155	24,613	-	-	-	-	-	-	-	-	21,642
30-34	21,061	21,088	27,402	32,254	-	-	-	-	-	-	-	25,632
35-39	21,666	21,606	28,347	32,904	33,882	-	-	-	-	-	-	29,589
40-44	26,012	21,614	27,612	32,663	33,806	34,760	-	-	-	-	-	31,216
45-49	20,773	21,771	27,442	32,288	33,854	35,024	35,184	-	-	-	-	32,808
50-54	21,862	22,556	27,651	32,000	33,635	34,227	35,357	36,682	-	-	-	33,296
55-59	21,508	22,750	27,843	31,348	32,907	33,686	34,469	36,070	39,645	31,800	31,800	32,956
60-64	20,370	21,462	28,600	31,207	32,791	34,061	34,395	35,471	37,458	37,732	37,732	32,935
65-69	18,948	21,894	28,753	31,385	32,477	33,682	34,208	35,177	32,625	43,462	43,462	33,232
70&Up	26,328	22,578	17,460	30,790	33,000	33,660	34,521	31,747	33,984	36,900	36,900	31,078
Average	21,551	21,411	27,582	32,428	33,626	34,512	34,980	36,095	37,115	38,710	38,710	30,736

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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	159	121	-	-	-	-	-	-	-	-	-	280
25-29	415	1,610	288	3	-	-	-	-	-	-	-	2,316
30-34	211	1,042	2,241	354	-	-	-	-	-	-	-	3,848
35-39	134	574	1,611	1,672	220	-	-	-	-	-	-	4,211
40-44	94	450	1,105	1,341	2,030	372	2	-	-	-	-	5,394
45-49	75	312	877	1,038	1,827	2,634	515	4	-	-	-	7,282
50-54	37	152	525	632	1,062	1,538	2,288	507	-	-	-	6,741
55-59	21	73	284	382	597	723	935	611	67	2	-	3,695
60-64	3	32	79	146	249	292	324	83	60	28	-	1,296
65-69	2	3	25	34	51	85	94	28	9	33	-	364
70&Up	1	-	5	13	19	13	26	11	8	20	-	116
Total	1,152	4,369	7,040	5,615	6,055	5,657	4,184	1,244	144	83	-	35,543

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	20,926	20,731	-	-	-	-	-	-	-	-	-	20,842
25-29	21,091	21,201	24,287	24,470	-	-	-	-	-	-	-	21,569
30-34	21,146	21,393	26,726	32,840	-	-	-	-	-	-	-	25,538
35-39	21,836	21,397	27,614	32,823	33,938	-	-	-	-	-	-	28,981
40-44	21,136	21,636	27,436	32,471	33,865	35,012	34,710	-	-	-	-	31,039
45-49	22,089	21,937	27,544	32,244	33,682	34,715	35,587	35,928	-	-	-	32,625
50-54	22,308	21,629	27,649	31,970	33,508	34,560	35,062	35,238	-	-	-	33,476
55-59	22,862	21,940	27,864	31,726	33,293	34,070	34,962	35,306	37,486	35,400	-	33,415
60-64	21,560	21,244	27,155	31,581	33,219	33,782	34,687	35,299	36,585	38,482	-	33,239
65-69	21,000	21,880	28,844	31,508	32,151	33,775	34,682	35,942	37,339	36,154	-	33,534
70&Up	29,700	-	28,699	32,841	32,957	32,347	34,951	34,985	38,168	39,331	-	34,762
Average	21,314	21,385	27,171	32,418	33,649	34,542	35,066	35,291	37,139	37,687	-	30,654

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

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	193	144	-	-	-	-	-	-	-	-	-	337
25-29	539	1,982	373	3	-	-	-	-	-	-	-	2,897
30-34	260	1,325	2,851	419	-	-	-	-	-	-	-	4,855
35-39	158	700	2,049	2,140	264	-	-	-	-	-	-	5,311
40-44	117	553	1,373	1,657	2,530	463	2	-	-	-	-	6,695
45-49	91	387	1,071	1,257	2,247	3,291	633	4	-	-	-	8,981
50-54	52	222	679	795	1,314	2,032	2,869	584	-	-	-	8,547
55-59	33	105	369	493	761	913	1,261	742	74	3	4,754	
60-64	7	45	110	183	318	375	406	105	79	39	1,667	
65-69	3	5	35	45	69	107	128	35	13	39	479	
70&Up	2	4	8	18	23	19	30	16	10	26	156	
Total	1,455	5,472	8,918	7,010	7,526	7,200	5,329	1,486	176	107	44,679	

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	20,981	20,733	-	-	-	-	-	-	-	-	-	20,875
25-29	21,086	21,193	24,361	24,470	-	-	-	-	-	-	-	21,584
30-34	21,130	21,328	26,871	32,749	-	-	-	-	-	-	-	25,558
35-39	21,810	21,435	27,771	32,841	33,929	-	-	-	-	-	-	29,108
40-44	22,094	21,632	27,471	32,507	33,853	34,962	34,710	-	-	-	-	31,073
45-49	21,858	21,905	27,525	32,252	33,714	34,776	35,512	35,928	-	-	-	32,659
50-54	22,179	21,921	27,650	31,976	33,533	34,479	35,122	35,428	-	-	-	33,438
55-59	22,369	22,187	27,859	31,641	33,210	33,990	34,834	35,441	37,690	34,200	33,312	
60-64	20,880	21,307	27,562	31,506	33,126	33,844	34,628	35,335	36,795	38,271	33,171	
65-69	20,316	21,886	28,818	31,478	32,236	33,756	34,556	35,789	35,888	37,279	33,461	
70&Up	28,014	22,578	24,484	32,271	32,965	32,762	34,894	33,974	37,331	38,770	33,817	
Average	21,363	21,390	27,258	32,420	33,645	34,536	35,047	35,422	37,135	37,916	30,671	

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – CENSUS DATA

C. Summary of Terminated Vested Members as of June 30, 2010

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>
Under 35	0	0	4	3,704	4	3,704
35-39	7	5,880	35	5,944	42	5,934
40-44	33	6,839	84	6,824	117	6,828
45-49	51	8,282	127	8,288	178	8,287
50-54	59	10,380	109	10,852	168	10,686
55-59	51	12,169	124	13,199	175	12,899
60-64	11	9,895	49	11,346	60	11,080
65 & Over	<u>10</u>	<u>7,882</u>	<u>15</u>	<u>12,320</u>	<u>25</u>	<u>10,545</u>
All Ages	222	9,504	547	9,888	769	9,777

The Average Annual Pension amounts above are as of June 30, 2010. The \$400 minimum monthly benefit is not reflected.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – CENSUS DATA

D. Summary of Retirees as of June 30, 2010

<u>Age</u>	<u>Count</u>	<u>Males</u> <u>Average Annual Pension</u>		<u>Count</u>	<u>Females</u> <u>Average Annual Pension</u>		<u>Count</u>	<u>Total</u> <u>Average Annual Pension</u>	
		<u>Basic System Benefit</u>	<u>Total Benefit</u>		<u>Basic System Benefit</u>	<u>Total Benefit</u>		<u>Basic System Benefit</u>	<u>Total Benefit</u>
Under 45	0	0	0	11	5,109	5,440	11	5,109	5,440
45-49	0	0	0	9	11,406	11,688	9	11,406	11,688
50-54	82	24,434	24,484	396	22,558	22,593	478	22,880	22,917
55-59	961	23,113	23,167	4,103	22,466	22,539	5,064	22,588	22,658
60-64	1,370	19,050	19,485	5,070	18,157	18,653	6,440	18,347	18,830
65-69	1,205	16,200	17,084	3,871	15,038	15,915	5,076	15,314	16,193
70-74	928	13,662	14,926	3,035	12,035	13,359	3,963	12,416	13,726
75-79	982	10,522	12,340	2,461	10,192	11,830	3,443	10,286	11,976
80-84	568	9,608	11,502	1,818	8,817	10,513	2,386	9,006	10,478
85-89	253	8,846	10,496	1,085	8,433	9,981	1,338	8,511	10,079
90-94	81	8,157	9,437	350	7,955	9,361	431	7,993	9,375
95-99	16	7,091	8,188	112	7,208	8,508	128	7,193	8,468
100 & Over	<u>3</u>	<u>7,005</u>	<u>8,541</u>	<u>29</u>	<u>7,743</u>	<u>8,791</u>	<u>32</u>	<u>7,674</u>	<u>8,767</u>
All Ages	6,449	15,714	16,690	22,350	15,308	16,190	28,799	15,399	16,302

The Average Annual Pension amounts above are as of June 30, 2010. In addition, 846 retirees are currently paying annual additional contributions of \$2,440,436 (via a reduced monthly benefit which is not reflected above).

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – CENSUS DATA

E. Summary of Disabled Members as of June 30, 2010

<u>Age</u>	<u>Males</u> <u>Average Annual Pension</u>			<u>Females</u> <u>Average Annual Pension</u>			<u>Total</u> <u>Average Annual Pension</u>		
	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>
Under 40	0	0	0	4	4,100	4,800	4	4,100	4,800
40-44	5	5,439	5,976	17	5,660	6,108	22	5,610	6,078
45-49	20	7,574	7,849	48	7,016	7,315	68	7,180	7,472
50-54	32	6,820	7,272	135	6,656	7,189	167	6,688	7,205
55-59	53	5,615	6,341	240	6,286	6,980	293	6,164	6,864
60-64	62	5,385	6,233	252	5,504	6,330	314	5,480	6,311
65-69	41	4,882	5,852	233	4,586	5,593	274	4,630	5,632
70-74	30	5,009	6,031	235	4,541	5,527	265	4,594	5,584
75-79	46	4,275	5,244	238	4,368	5,357	284	4,353	5,339
80-84	36	4,434	5,448	185	4,326	5,302	221	4,343	5,326
85-89	14	4,313	5,280	83	4,514	5,477	97	4,485	5,449
90-94	4	4,347	5,311	33	4,361	5,290	37	4,359	5,292
95-99	2	4,725	5,736	10	4,161	5,165	12	4,255	5,260
100 & Over	<u>1</u>	<u>11,883</u>	<u>11,883</u>	<u>2</u>	<u>4,585</u>	<u>5,701</u>	<u>3</u>	<u>7,017</u>	<u>7,762</u>
All Ages	346	5,301	6,124	1,715	5,124	5,986	2,061	5,154	6,009

The Average Annual Pension amounts above are as of June 30, 2010.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – CENSUS DATA

F. Summary of Beneficiaries as of June 30, 2010

<u>Age</u>	<u>Count</u>	<u>Males</u> <u>Average Annual Pension</u>		<u>Count</u>	<u>Females</u> <u>Average Annual Pension</u>		<u>Count</u>	<u>Total</u> <u>Average Annual Pension</u>	
		<u>Basic System Benefit</u>	<u>Total Benefit</u>		<u>Basic System Benefit</u>	<u>Total Benefit</u>		<u>Basic System Benefit</u>	<u>Total Benefit</u>
Under 30	36	4,221	4,430	48	4,314	4,517	84	4,274	4,480
30-34	3	1,717	1,808	2	4,332	4,638	5	2,763	2,940
35-39	4	5,483	5,845	4	3,139	3,358	8	4,311	4,601
40-44	12	3,331	3,536	25	3,718	3,876	37	3,592	3,766
45-49	11	3,337	3,622	21	4,253	4,435	32	3,938	4,155
50-54	32	4,086	4,307	36	4,500	4,796	68	4,305	4,566
55-59	53	4,958	5,194	69	6,021	6,323	122	5,559	5,833
60-64	82	4,913	5,139	161	5,597	5,856	243	5,366	5,614
65-69	113	5,152	5,410	167	5,070	5,324	280	5,103	5,359
70-74	154	4,559	4,787	295	4,895	5,160	449	4,779	5,032
75-79	178	4,164	4,443	298	4,251	4,527	476	4,219	4,496
80-84	189	3,967	4,230	269	3,946	4,195	458	3,955	4,209
85-89	142	3,847	4,095	178	3,801	4,001	320	3,821	4,043
90 & Over	<u>73</u>	<u>3,532</u>	<u>3,753</u>	<u>89</u>	<u>3,263</u>	<u>3,427</u>	<u>162</u>	<u>3,384</u>	<u>3,574</u>
All Ages	1,082	4,280	4,528	1,662	4,498	4,746	2,744	4,412	4,660

The Average Annual Pension amounts above are as of June 30, 2010.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2010

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).

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2010

- 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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2010

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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2010

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:

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2010

- (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).

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS **AS OF JUNE 30, 2010**

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

9. Minimum Benefits

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

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

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2010

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS **AS OF JUNE 30, 2010**

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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2010

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2010

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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2010

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

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

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

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

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

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

Pre-retirement Mortality: RP-2000 Employee Mortality Rates for males and females, projected on a generational basis using Scale AA.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2010

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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2010

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 2010, this amount is \$26,476,000.

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, 2010 less the provided years of creditable service.

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

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

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IX – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2010

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

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

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

Changes in actuarial assumptions since the prior valuation: An additional service purchase assumption was added to reflect that some retiring active members who have not attained 30 years of creditable service will purchase enough years of service upon retirement to attain 30 years of creditable service.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION X – SUMMARY OF ACTUARIAL METHODS AS OF JUNE 30, 2010

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.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION X – SUMMARY OF ACTUARIAL METHODS AS OF JUNE 30, 2010

Asset Valuation Method

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

Changes in actuarial methods since the prior valuation: None.

This report was prepared solely to provide assistance to PRTRS. Milliman and PRTRS do not intend to benefit and assume no duty or liability to other parties who receive this work. 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.