

PUERTO RICO TEACHERS RETIREMENT SYSTEM

June 30, 2015 Actuarial Valuation Report

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July 29, 2016

Ms. Wanda Santiago Lopez
Executive Director
Puerto Rico Teachers Retirement System
Capital Center Building, North Tower
235 Arterial Hostos Avenue
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San Juan, PR 00918

Dear Ms. Santiago:

This report presents the results of the actuarial valuation of the Puerto Rico Teachers Retirement System (PRTRS) as of June 30, 2015. Section I contains highlights of the valuation including a general discussion. The subsequent Sections contain schedules summarizing the underlying calculations, asset information, participant data, plan benefits and actuarial assumptions and methods. This valuation reflects Act 160-2013 (enacted on December 24, 2013), taking into account the Puerto Rico Supreme Court decision of April 11, 2014.

Purpose

The main purposes of this report are:

- to present information pertaining to the operation of the plan for inclusion in financial statements based on relevant Statements of the Government Accounting Standards Board (GASB);
- to review the experience under the plan since the previous valuation; and
- to assess the relative funded position of the plan.

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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. Any distribution of this report should be made in its entirety.

Data Reliance

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

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

The asset information used for the valuation was taken from unaudited financial statements provided by PRTRS as of June 30, 2015 and is subject to change upon audit.

Future Measurements

This valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits. While the valuation is based on an array of individually reasonable

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assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

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.

Certification

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

Actuarial computations presented in this report are for purposes of fulfilling financial accounting requirements under the GASB Statements 45, and 67. The calculations in the enclosed report have been made on a basis consistent with our understanding of the plan provisions described in Section VII 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.

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Qualifications

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

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

Respectfully submitted,



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



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

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SECTION I – SUMMARY

A. Summary of Principal Results of June 30, 2015 Actuarial Valuation

GASB 67 Accounting (\$ amounts in thousands)

	June 30, 2014 <u>Valuation</u>	June 30, 2015 <u>Valuation</u>
Total Pension Liability ¹	\$14,807,703	\$16,307,731
Net Fiduciary Position	1,703,779	1,313,148
Net Pension Liability	13,103,924	14,994,583

GASB 45 Accounting (\$ amounts in thousands)

	June 30, 2014 <u>Valuation</u>	June 30, 2015 <u>Valuation</u>
Actuarial Accrued Liability ¹	\$543,205	\$548,518
Actuarial Value of Assets	<u>0</u>	<u>0</u>
Unfunded Actuarial Accrued Liability	543,205	548,518
Employer Normal Cost as a percent of payroll	0 0.00%	0 0.00%
Annual Required Contribution for upcoming fiscal year as a percent of payroll	36,292 3.10%	38,049 3.37%

¹ A discussion of the benefits included in the Total Pension Liability and Actuarial Accrued Liability begins on page 3 of this section.

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SECTION I – SUMMARY

	July 1, 2013 Census Data <u>Collection ¹</u>	July 1, 2014 Census Data <u>Collection ²</u>
<i>Participant Data</i>		
<u>Active Members</u>		
Number	39,343	37,700
Average Salary	\$29,768	\$29,907
Total Annual Salary	\$1,171,153,830	\$1,127,499,643
<u>Retirees</u>		
Number	35,278	36,210
Average Monthly Basic System Benefit	\$1,455	\$1,476
Average Monthly System Administered Benefit	\$56	\$49
<u>Disabled Members</u>		
Number	2,235	2,301
Average Monthly Basic System Benefit	\$502	\$531
Average Monthly System Administered Benefit	\$59	\$50
<u>Beneficiaries</u>		
Number	3,088	3,150
Average Monthly Basic System Benefit	\$404	\$416
Average Monthly System Administered Benefit	\$18	\$17
<u>Terminated Vested Members</u>		
Number	689	527
Average Monthly Basic System Benefit	\$720	\$743

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.

¹ The July 1, 2013 Census Data Collection information reflects new retirements during 2013-2014.

² The July 1, 2014 Census Data Collection information reflects new retirements during July 2014.

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SECTION I – SUMMARY

B. General Discussion

Basic System Benefits

As summarized in Section VII, 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)

Annuity benefits are subject to a \$300 monthly minimum (if hired before August 1, 2014). The statutory funding requirement for these benefits for the 2015-2016 fiscal year includes member contributions of 9% of payroll for members hired on or before July 31, 2014 and 10% of payroll for members hired August 1, 2014 and later, and employer contributions of 13.5% of payroll. Employer statutory funding requirements in future years will increase under Act 114-2011 and Act 160-2013 (see page 4).

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

System Administered Benefits

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

- Additional minimum pension benefits, including the increase in the monthly minimum benefit from \$300 to \$400 (if hired prior to August 1, 2014)
- Additional minimum death benefit (if retired prior to August 1, 2014)
- Ad-hoc cost-of-living adjustments (COLAs)
- Medical insurance plan contribution (if retired prior to August 1, 2014)
- Medication bonus (if retired prior to August 1, 2014)
- Christmas bonus (if retired prior to August 1, 2014)

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

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SECTION I – SUMMARY

Act 160-2013

During the 2013-2014 fiscal year, Act 160-2013 was enacted on December 24, 2013. Act 160-2013 supersedes Act 91-2004. Act 160-2013 was modified by an April 11, 2014 decision of the Puerto Rico Supreme Court. A summary of the changes in benefits due to Act 160-2013, reflecting the Supreme Court decision, appears later in this section.

Act 114-2011 Employer Contributions

During the 2010-2011 fiscal year, Act 114-2011 was enacted which increased employer contributions from the prior 8.5% of compensation to 9.5% of compensation effective July 1, 2011. For the next four fiscal years effective July 1, employer contributions will increase annually by 1% of compensation. For the next five fiscal years, employer contributions will increase annually by 1.25%, reaching an ultimate employer contribution rate of 19.75% effective July 1, 2020. Act 160-2013 maintains the same structure set forth in Act 114-2011 and further provides for an ultimate employer contribution rate of 20.525%, effective July 1, 2021.

Other Contributions

In addition to the payroll-based contributions described under Basic System Benefits above, Article 1.1 of Act 160-2013 (discussed further below in this section) defines the following additional contributions:

- 1.1.(a) Annual Additional Contribution - the annual contribution certified by the external actuary of the System, prepared within at least one hundred twenty (120) days before the beginning of Fiscal Year 2018-2019 and every two (2) years thereafter until fiscal year 2041-2042, as necessary to prevent the value of the projected gross assets of the System from falling below three hundred million dollars (\$300,000,000) during any subsequent fiscal year, subject to the provisions of Article 7.1 of this Act.
- 1.1.(c) Teacher's Justice Uniform Contribution - the annual contribution to be made to the System equal to \$30 million in fiscal year 2016-2017, to \$30 million in fiscal year 2017-2018, and to \$60 million in fiscal year 2018-2019, and subsequent years until fiscal year 2041-2042.

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Act 160-2013 also provides that effective July 1, 2014, the System will receive a supplemental contribution of \$1,675 each fiscal year from the General Fund for each pensioner (including beneficiaries receiving survivor benefits) notwithstanding if the pensioner retired prior to or on or after August 1, 2014. This contribution will pay for the Medical Insurance Plan Contribution (up to \$1,200 per member), the Christmas Bonus (\$200 per member), and Medication Bonus (\$100 per member) payable to members who retired prior to August 1, 2014. The excess amount of the supplemental contributions will remain in the System to pay down the unfunded liability.

System Experience since Prior Valuation

The approximate actual rate of return since the prior valuation was 4.34% for 2014-2015. The investment return assumption for the 2014-2015 fiscal year was 6.65%. The asset loss due to investment performance that was less than expected served to increase the System's net pension liability.

Our analysis of System experience from June 30, 2014 to June 30, 2015 resulted in a liability loss of \$0.1 billion (e.g. – the original June 30, 2014 Total Pension Liability of \$14.8 billion was expected to increase to \$15.0 billion as of June 30, 2015, and instead increased to \$15.1 billion prior to the changes in assumptions).

Major sources of gains and losses from the June 30, 2014 valuation to the June 30, 2015 valuation are as follows:

1. \$20 million loss on new entrants and rehired active members who were not included in the June 30, 2014 valuation.
2. \$110 million loss on roughly 1,500 active members who retired since the prior valuation.
3. \$14 million gain on retiree and beneficiary mortality and data changes.
4. \$40 million loss on salary increases larger than anticipated and other data changes for continuing active members.
5. \$80 million gain from active members terminating employment.

Further discussion is warranted on Item 2.

For Item 2, the act of retiring from active status generates a liability loss for an individual member. Possible explanations for additional liability losses attributable to individual members include purchases of service (which are offset to some extent on the asset

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side by the member's purchase price) and any data clean-up that may have occurred during the benefit calculation process when the member retired.

Changes in Assumptions since Prior Valuation

This valuation reflects no change in the investment return assumption of 6.65% per year. The 6.65% assumption reflects the asset allocation for the non-loan portion of the portfolio that was adopted by the Board during December 2010 as shown below and Milliman's capital market assumptions as of June 30, 2015. In addition, the assumption reflects that loans to members comprise approximately 20% of the portfolio and, as provided by the System, have an approximate return of 9.6% with no volatility.

Asset Class	Target Allocation
Domestic Equity	25%
International Equity	10%
Fixed Income	64%
Cash	1%

Under GASB 25/27, the investment return assumption was used to discount all projected Basic System Pension Benefits and System Administered Pension Benefits to determine the Actuarial Accrued Liability. Under GASB 67, the investment return assumption is an input that is used in the calculation of the single equivalent interest rate that is used to discount these benefits to determine the Total Pension Liability. GASB 67 also requires that the plan sponsor select a municipal bond index for use in developing the single equivalent interest rate. The index selected for PRTRS is the Bond Buyer General Obligation 20-Bond Municipal Bond Index. The index rate decreased from 4.29% as of June 30, 2014 to 3.80% as of June 30, 2015.

This valuation also reflects no change in the interest rate assumption for GASB 45 purposes of 3.10% per year. The 3.10% assumption reflects Milliman's capital market assumptions as of June 30, 2015 and assumes that the Commonwealth's General Fund (the assets used to pay the GASB 45 benefits) is invested approximately in 75% cash and 25% short-term bonds.

Based on information provided the System, the prevalence of service purchase activity has significantly declined since the implementation of Act 160-2013. As a result, the service purchase assumptions were reduced by 90%.

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The projected mortality improvement scale was updated from Scale AA to Scale MP-2015, which was published by the Society of Actuaries in October 2015. Also, as Scale MP-2015 is a two-dimensional mortality improvement scale, the base mortality rates for the post-retirement mortality assumption were set to the 2010 rates – the central year of the 2007 to 2012 PRTRS experience study upon which the rates were based. In addition, the pre-retirement mortality rates were also updated to reflect updated mortality tables published by the Society of Actuaries.

This valuation also reflects a salary freeze until July 1, 2017 due to Act 66-2014.

Changes in Methods since the Prior Valuation

There have been no change in methods since the prior valuation.

Changes in Plan Provisions since Prior Valuation

There were not any changes in plan provisions made during the 2014-2015 plan year.

Overview of Recent Significant Changes in Plan Provisions

Act 160-2013 (enacted December 24, 2013) proposed benefit changes for all members of PRTRS. Based on the Puerto Rico Supreme Court decision (dated April 11, 2014), many changes were struck down. A summary of the changes that passed Supreme Court review follows below based on the member's date of hire.

Members hired before August 1, 2014

The following changes were made for members hired before August 1, 2014:

- The stop date for the additional contribution required for retirement due to age and service prior to age 55 and 30 years of Creditable Service was changed to age 55 for members who retired on or after December 24, 2013.
- The payroll-based employer contributions are also required to be made on behalf of members who retired due to age and service while the member is paying the additional contribution.
- System-funded post-retirement death benefits were eliminated for members who retire on August 1, 2014 or later. If a member elects an optional form of annuity with a survivor benefit, the member's benefit will be actuarially reduced to reflect the cost of the survivor benefit.

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- The in-service one-year of salary lump sum death benefit was eliminated effective July 31, 2014.
- The Christmas Bonus was reduced from \$600 to \$200, and the Summer Bonus of \$100 was eliminated for members in pay status.
- All Special Law bonus benefits (Christmas Bonus, Medication Bonus, and Medical Insurance Plan Continuation) were eliminated for members retiring on or after August 1, 2014.
- The accumulation rate on service purchase was increased from 2% compound per year to 9.5% compound per year.

Members hired on or after August 1, 2014

New members would be covered by a contributory hybrid plan. A hybrid plan, such as a cash balance plan, determines the benefit amount based on a formula using contributions and earning credits, has notional individual accounts for members, and provides lifetime annuity benefits. The primary provisions of the contributory hybrid plan are as follows:

- Member contributions of
 - 10.00% of compensation for Fiscal Years 2014-2015 through 2016-2017
 - 13.12% of compensation for Fiscal Years 2017-2018 through 2019-2020
 - 14.02% of compensation for Fiscal Year 2020-2021 and each year thereafter
- The member contributions are credited to a notional individual account each year.
- The notional individual account is credited with investment yield for each semester of the fiscal year as determined by the Board. The investment yield determined by the Board shall never be less than 80% of the System's investment portfolio yield during each semester, less investment fees.
- Normal retirement age of 62 with 5 or more years of service and a notional account balance of \$10,000 or more.
- Members who separate from employment with less than 5 years of service or who have a notional account balance less than \$10,000 would receive their notional account balance as a lump sum.
- Members who separate from employment with 5 or more years of service and a notional account balance of \$10,000 or more would receive their benefit in the form of a mandatory annuity.

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- Members who separate at or after normal retirement age would receive an immediate annuity.
- Members who separate prior to normal retirement age for reasons other than disability would receive a deferred annuity commencing at normal retirement age, with interest credits continuing to accrue to the account during the deferral period.
- Members who separate prior to normal retirement age due to disability would receive an immediate annuity.
- The mandatory annuity would be a “modified cash refund” of the member’s account balance - which means that if the accumulated annuity payments at the time of post-retirement death are less than the account balance at the time of retirement, then the beneficiary would receive the remainder of the account.
- Beneficiaries of members who die prior to retirement would receive a lump sum payment of the members’ accumulated account balance at the time of death.

Asset Segregation

On September 29, 2015, the System’s Board decided to segregate the assets attributable to hybrid plan members (e.g. members hired August 1, 2014 and later) from the assets attributable to the legacy defined benefit (DB) plan members (e.g. members hired before August 1, 2014). Note that employer contributions made on behalf of hybrid plan members will be used to fund the legacy DB plan benefits and thus are included in the assets attributable to the legacy DB plan members. The assets attributable to hybrid plan members will include the hybrid plan member contributions and investment income thereon, reduced by benefits paid to hybrid plan members and hybrid plan expenses.

This report assumes that this segregation of assets does not require the System to be treated as two separate plans (legacy DB versus hybrid) under GASB 67.

GASB Pension Accounting Information

Accounting results for pension benefits were previously calculated under Governmental Accounting Standards Board Statement No. 25, “*Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans*” (GASB 25), and Statement No. 27, “*Accounting for Pensions by State and Local Governmental Employers*” (GASB 27).

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GASB has issued two new statements: Statement No. 67, “*Financial Reporting for Pension Plans*” (GASB 67), and Statement No. 68, “*Accounting and Financial Reporting for Pensions*” (GASB 68). GASB 67 and 68 replace GASB 25 and 27 respectively. The effective date of GASB 67 (which applies to financial reporting on a plan basis) is the fiscal year ending June 30, 2014. The effective date of GASB 68 (which applies to financial reporting by contributing employers) is the fiscal year ending June 30, 2015.

Pension accounting results in Section III of this report have been prepared under GASB 67 parameters to determine a Total Pension Liability at both the beginning and the end of the fiscal year. The Net Fiduciary Position at each date is then subtracted to arrive at the Net Pension Liability at each date.

Whereas the Net Pension Obligation (the balance sheet item under the prior standards) reflected a cumulative tally of annual accounting expense in excess of annual employer contributions, the Net Pension Liability (the balance sheet item under the new standards) reflects the full amount of the unfunded liability, and thus will be significantly larger and also more volatile from year to year.

GASB OPEB Accounting Information

Accounting results for the Medical Insurance Plan Contribution in Section V of this report are calculated under Governmental Accounting Standards Board Statement No. 45, “*Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*” (GASB 45). (Note that the Medication Bonus has been included in the GASB 67 results as a Pension Benefit because members can receive the bonus without submitting documentation to substantiate medication expenses.)

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 benefit is not funded in advance, the ARC for this benefit has been calculated based on an assumed investment return rate of 3.10% based on the asset allocation of the Commonwealth’s general assets that are used to pay this benefit.

Note that GASB issued GASB 75 in June 2015 which makes changes to GASB 45 similar to how GASB 25/27 were updated by GASB 67/68. GASB 75 is effective beginning with the 2017-2018 fiscal year, unless earlier adoption occurs.

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SECTION I – SUMMARY

GASB 67 Projection to Determine Date of Depletion (if any)

GASB 67 requires that a projection be performed for the System to determine a date of depletion, if any, and the resulting effective discount rate. This complex projection is used to determine the point at which the System is expected to deplete assets per GASB 67. The analysis includes a projection of member and employer contributions, benefit payments, and administrative expenses attributable to current members. Amounts attributable to members hired in the future are excluded except to the extent that employer contributions exceed the cost of benefits for those future members. *Because the date of depletion projection does not incorporate all projected cash inflows to and outflows from the System, the results will differ from those in a comprehensive cash flow projection that models all inflows and outflows. In other words, the GASB 67 date of depletion is not the same as the date that the System would be expected to exhaust assets.*

Once a depletion date has been determined, it is used as an input in the determination of the accounting liability as follows:

- The present value of all future benefits for GASB 67 accounting purposes is determined as follows:
 - For projected benefit payments occurring prior to the date of depletion, the discount rate is based on the System's expected return on assets.
 - For projected benefit payments occurring after the date of depletion, the discount rate is based on a tax-free municipal bond index.
- Based on the resulting present value of all future benefits for GASB 67 accounting purposes, a single equivalent interest rate can be imputed that yields the same present value.

Subsection A of Section III shows the results of the GASB 67 date of depletion projection as of the end of the fiscal year, which then generates the discount rate used in the determination of the Total Pension Liability. As directed by the Treasury Department, the Government Development Bank, the Office of Management and Budget, and the System, the date of depletion projection does not include any amounts from the additional contributions defined in Article 1.1 of Act 160-2013.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

Cash Flow Projection for Basic System Benefits

PRTRS is a 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 must be used to cover this negative cash flow. As the negative cash flow exceeds expected investment income, System assets are expected to continually decline. It is expected that 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.

Note that while employer contributions on behalf of new members hired on or after August 1, 2014 accrue to the System and assist in funding the liability for benefits payable to existing members, increases in member contribution rates under the contributory hybrid plan in Act 160-2013 (new members) would not accrue to the System. Rather they would serve to increase the ultimate annuity benefits to be paid upon retirement (or the refund to be paid for members who separate with less than 5 years of service, have notional individual accounts less than \$10,000, or who die in active service). As mentioned earlier, the PRTRS' Board made the decision to segregate assets on behalf of hybrid plan members versus those on behalf of legacy DB plan members.

Even reflecting the Act 160-2013 benefit changes that were upheld by the Supreme Court decision, if the additional contributions defined in Article 1.1 are not made, PRTRS will continue being rapidly disfunded and the DB plan assets are expected to be exhausted during fiscal year 2018-2019.

Management Information

Subsection A of Section IV of this report contains a projection of the Annual Additional Contribution payable from fiscal year 2018-2019 through 2041-2042 based on the census data, plan provisions, and actuarial assumptions used in this valuation.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION I – SUMMARY

Subsection B of Section IV of this report contains an alternative projection to determine the GASB 67 date of depletion, if any, assuming that the additional contributions defined in Article 1.1 of Act 160-2013 are paid when due.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION II - SYSTEM ASSETS

A. Statement of Fiduciary Net Position

	<u>June 30, 2014</u>	<u>June 30, 2015</u>
Assets		
Cash and cash equivalents	\$17,506,000	\$63,738,000
Receivables and prepaid expenses	25,161,000	61,440,000
Investments:		
Bonds	649,774,000	371,022,000
Stocks	92,900,000	66,357,000
Non-exchange traded mutual funds	503,619,000	335,528,000
Private equity investments	11,170,000	7,500,000
Total loans to plan members	420,544,000	418,597,000
Other assets	<u>846,000</u>	<u>1,065,000</u>
Total investments	1,678,853,000	1,200,069,000
Invested securities lending cash collateral	15,152,000	25,960,000
Capital assets	<u>17,325,000</u>	<u>16,570,000</u>
Total assets	\$1,753,997,000	\$1,367,777,000
Liabilities		
Securities lending cash collateral	\$15,152,000	\$25,960,000
Other liabilities	<u>35,066,000</u>	<u>28,669,000</u>
Total liabilities	\$50,218,000	\$54,629,000
Net position restricted for pensions	\$1,703,779,000	\$1,313,148,000

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION II - SYSTEM ASSETS

B. Statement of Changes in Fiduciary Net Position

June 30, 2015

Additions	
a. Contributions	
Employer Contributions for Basic Benefits	\$143,891,000
Employer Contributions for Special Benefits	48,768,000
Member Contributions	105,120,000
Transfers in	<u>2,345,000</u>
Total Contributions	\$300,124,000
b. Investment Income	
Interest Income	\$54,445,000
Dividend Income	1,451,000
Net Appreciation of Investments	5,950,000
Other Income	4,238,000
Investment Related Expenses	<u>(2,049,000)</u>
Net Investment Income	\$64,035,000
Total Additions	\$364,159,000
Deductions	
Refund of Contributions	\$19,407,000
Annuities and Death Benefits	683,881,000
Special Benefits	32,819,000
Administrative Expenses	<u>18,683,000</u>
Total deductions	\$754,790,000
Net Increase (Decrease)	(\$390,631,000)
Net position restricted for pensions	
Beginning of year (June 30, 2014)	1,703,779,000
End of year (June 30, 2015)	\$1,313,148,000

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION II - SYSTEM ASSETS

C. Estimated Annual Rate of Return for year ending June 30, 2015

	<u>Market Value</u>
1. Value of Assets as of June 30, 2014	\$1,703,779,000
2. Total Contributions	300,124,000
3. Benefit Payments and Expenses	754,790,000
4. Value of Assets as of June 30, 2015	1,313,148,000
5. Non-Investment Increment: (2) - (3)	(454,666,000)
6. Investment Increment: (4) - (1) - (5)	64,035,000
7. Time Weighted Value: (1) +.5 * (5)	1,476,446,000
8. Estimated Annual Rate of Return: (6) / (7)	4.34%

D. Estimated Historical Rates of Return

<u>Plan Year Ending</u>	<u>Market Value</u>
June 30, 2015	4.34%
June 30, 2014	11.20%
June 30, 2013	8.26%
June 30, 2012	1.73%
June 30, 2011	23.37%
5-year Compounded Annual Return	9.53%

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION III – GASB 67 ACCOUNTING INFORMATION

A. Projection to Determine GASB 67 Date of Depletion (if any)

The projection was determined on a deterministic basis for the System as a whole and reflects the following:

- Projected investment income is based on the June 30, 2015 investment return assumption of 6.65% per year.
- All demographic assumptions are assumed to be met in future years (i.e. – no gains or losses from demographic sources are expected to occur).
- Employer contributions in each future year are calculated as follows:
 - Under Act 114-2011, the statutory payroll-based employer contribution rate is 13.50% for the 2015-2016 fiscal year. For the next five fiscal years starting with 2016-2017, this rate will increase annually by 1.25%, reaching an employer contribution rate of 19.75% effective July 1, 2020. Under Act 160-2013, effective July 1, 2021 and later fiscal years, the statutory payroll-based employer contribution rate will be 20.525%.
 - The employer contributions attributable to members who were active as of the valuation date were calculated based on the statutory payroll-based employer contribution rate (above) applied to the payroll for those members.
 - The employer contribution rate to the System on behalf of future hires exceeds the net employer normal cost rate (on entry age normal cost method basis with a 6.65% investment return assumption), which is thus available to be applied toward benefits for existing members. This excess employer contribution rate was determined as follows:
 - Based on the projections, the gross normal cost rate for future hires on and after August 1, 2014 is 11.50% of payroll based on the plan provisions and actuarial assumptions set forth in this report.
 - With employee contribution rates of 10.00% of payroll effective from August 1, 2014 to June 30, 2017, 13.12% of payroll from July 1, 2017 to June 30, 2020, and 14.02% of payroll effective July 1, 2020 for members hired on and after August 1, 2014, the net employer normal cost rate for future hires is negative. Therefore, the entirety of the Act 114-2011 statutory employer contribution rate based on future hire payroll can be applied toward benefits for existing members.
- As directed by the Treasury Department, the Government Development Bank, the Office of Management and Budget, and the System, this projection does not

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION III – GASB 67 ACCOUNTING INFORMATION

include any amounts from the additional contributions defined in Article 1.1 of Act 160-2013. This decision was based on the following:

- The actual fiscal and budgetary condition of the Commonwealth of Puerto Rico, and
- Even though there is no prior collection history of the Commonwealth's contributions required by Act 160-2013, as a result of budgetary constraints, the Commonwealth did not pay similar additional contributions to the Puerto Rico Government Employees Retirement System ("PRGERS") for fiscal year 2013-2014 and significantly reduced its additional contribution to PRGERS for fiscal year 2014-2015.
- This projection reflects 1,358 actual retirements from active status in July 2014 in the census data, decreasing the active membership to 37,700. In determining projected employer contributions, the active membership was then assumed to further decrease to 36,375 (the January 2016 count of active members provided by the System) and to remain at that lower level throughout the projection period (i.e. – members who leave are replaced, but no net new hiring occurs). Please note that projected member contributions, benefit payments, and administrative expenses for future hires are excluded from this projection.
- The new entrant cohort used for projection purposes is based on members hired between July 1, 2013 and July 1, 2014. Salaries for future new entrant cohorts were assumed to remain level through June 30, 2017 due to Act 66-2014 and then to increase 2.5% per year thereafter.
- Administrative expenses were assumed to remain level. In each future year, the administrative expenses attributable to current members were determined by applying the ratio of current member count to total member count to the total administrative expenses.

As shown at the end of this subsection, the System assets are expected to be exhausted during fiscal year 2018-2019 under this GASB 67 projection basis.

Accordingly, based on the projected 2018-2019 year of depletion, the investment return of 6.65% per year as of June 30, 2015, and the municipal bond index of 3.80% as of June 30, 2015, the single equivalent interest rate as of June 30, 2015 was determined to be 3.82%. This single equivalent interest rate yields the same present value of all future benefits as using the expected return on plan assets until the 2017-2018 fiscal year and the tax-free municipal bond index beginning with the 2018-2019 fiscal year for the discount rate.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION III – GASB 67 ACCOUNTING INFORMATION

The System has indicated that the Commonwealth's preliminary budget for 2016-2017 includes the scheduled \$30 million Teachers Justice Uniform Contribution (Article 1.1(c) of Act 160-2013). However, even if all future years of the Teachers Justice Uniform Contribution are reflected in the GASB 67 Date of Depletion projection, the System assets would still be expected to be exhausted during fiscal year 2018-2019 under the GASB 67 projection basis and the single equivalent interest rate as of June 30, 2015 would remain at 3.82%.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM
SECTION III – GASB 67 ACCOUNTING INFORMATION

GASB 67 Projection as of June 30, 2015 to determine Date of Depletion (if any)

Fiscal Year Ending	Employer Contribution Rate	Beginning of Year Assets	Estimated Payroll for Members Active as of the Valuation Date	Estimated Payroll for Members Hired After the Valuation Date	Estimated Employer Payroll Based Contribution	Estimated Gross Employer Supplemental Contribution (per Act 160-2013 Section 4.9(b))	Estimated Special "Bonus" Benefits paid from Employer Supplemental Contribution	Estimated Net Employer Supplemental Contribution (per Act 160-2013 Section 4.9(b))	Estimated Teacher's Justice Uniform Contribution (assumed paid end of year)	Estimated Annual Additional Contribution (assumed paid end of year)	Estimated Act 70-2010 Contribution	Estimated Employer Contribution per Act 160-2013 Section 4.4(d)	Estimated Contribution from Members hired before August 2014	Estimated Contribution from Members hired after July 2014 Active as of the Valuation Date	Estimated Contribution from All Members Active as of the Valuation Date	Estimated Benefit Payments to Retired and Active Members as of the Valuation Date	Estimated Administrative Expenses for Retired and Active Members as of the Valuation Date	Estimated Investment Income	End of Year Assets
06/30/2016	13.500%	1,313,148,000	1,082,433,000	0	146,128,000	70,497,000	49,771,000	20,726,000	0	0	323,000	3,155,000	97,419,000	0	97,419,000	679,371,000	19,243,000	73,229,000	955,514,000
06/30/2017	14.750%	955,514,000	1,049,177,000	13,908,000	156,805,000	71,127,000	48,736,000	22,391,000	0	0	340,000	2,589,000	94,426,000	0	94,426,000	686,993,000	19,070,000	49,490,000	575,493,000
06/30/2018	16.000%	575,493,000	1,044,591,000	36,802,000	173,023,000	71,854,000	47,676,000	24,178,000	0	0	352,000	2,284,000	94,014,000	0	94,014,000	697,462,000	18,806,000	24,451,000	177,526,000
06/30/2019	17.250%	177,526,000	1,034,488,000	63,434,000	189,391,000	72,646,000	46,591,000	26,055,000	0	0	374,000	1,963,000	93,105,000	0	93,105,000	710,756,000	18,525,000	0	0
06/30/2020	18.500%	0	1,017,310,000	94,206,000	205,630,000	73,558,000	45,483,000	28,075,000	0	0	387,000	1,890,000	91,559,000	0	91,559,000	728,069,000	18,226,000	0	0
06/30/2021	19.750%	0	993,342,000	130,779,000	222,014,000	74,690,000	44,351,000	30,329,000	0	0	368,000	1,732,000	89,402,000	0	89,402,000	749,250,000	17,894,000	0	0
06/30/2022	20.525%	0	965,003,000	171,398,000	233,246,000	75,851,000	43,194,000	32,657,000	0	0	291,000	1,599,000	86,851,000	0	86,851,000	772,341,000	17,553,000	0	0
06/30/2023	20.525%	0	934,248,000	215,264,000	235,937,000	77,013,000	42,017,000	34,996,000	0	0	215,000	1,495,000	84,083,000	0	84,083,000	795,946,000	17,212,000	0	0
06/30/2024	20.525%	0	902,663,000	261,271,000	238,898,000	78,070,000	40,819,000	37,251,000	0	0	199,000	1,311,000	81,241,000	0	81,241,000	818,728,000	16,882,000	0	0
06/30/2025	20.525%	0	871,130,000	308,756,000	242,172,000	78,981,000	39,601,000	39,380,000	0	0	179,000	1,208,000	78,403,000	0	78,403,000	840,004,000	16,566,000	0	0
06/30/2026	20.525%	0	839,358,000	357,604,000	245,677,000	79,708,000	38,363,000	41,345,000	0	0	94,000	1,209,000	75,543,000	0	75,543,000	859,779,000	16,263,000	0	0
06/30/2027	20.525%	0	806,693,000	408,311,000	249,380,000	80,301,000	37,106,000	43,195,000	0	0	61,000	1,313,000	72,604,000	0	72,604,000	878,277,000	15,967,000	0	0
06/30/2028	20.525%	0	773,699,000	461,094,000	253,441,000	80,800,000	35,830,000	44,970,000	0	0	6,000	1,378,000	69,634,000	0	69,634,000	895,471,000	15,675,000	0	0
06/30/2029	20.525%	0	740,020,000	515,128,000	257,619,000	81,129,000	34,539,000	46,590,000	0	0	0	1,591,000	66,603,000	0	66,603,000	911,402,000	15,393,000	0	0
06/30/2030	20.525%	0	702,209,000	571,599,000	261,449,000	81,373,000	33,229,000	48,144,000	0	0	0	1,833,000	63,200,000	0	63,200,000	928,798,000	15,111,000	0	0
06/30/2031	20.525%	0	658,076,000	633,261,000	265,047,000	81,698,000	31,904,000	49,794,000	0	0	0	2,051,000	59,228,000	0	59,228,000	949,386,000	14,811,000	0	0
06/30/2032	20.525%	0	608,661,000	700,407,000	268,686,000	82,098,000	30,565,000	51,533,000	0	0	0	2,150,000	54,781,000	0	54,781,000	972,418,000	14,494,000	0	0
06/30/2033	20.525%	0	557,290,000	772,383,000	272,915,000	82,514,000	29,214,000	53,300,000	0	0	0	1,983,000	50,157,000	0	50,157,000	995,313,000	14,166,000	0	0
06/30/2034	20.525%	0	507,641,000	846,397,000	277,916,000	82,790,000	27,850,000	54,930,000	0	0	0	1,690,000	45,689,000	0	45,689,000	1,015,216,000	13,843,000	0	0
06/30/2035	20.525%	0	460,548,000	920,757,000	283,513,000	82,819,000	26,477,000	56,342,000	0	0	0	1,498,000	41,451,000	0	41,451,000	1,031,446,000	13,532,000	0	0
06/30/2036	20.525%	0	415,964,000	996,105,000	289,827,000	82,670,000	25,097,000	57,573,000	0	0	0	1,353,000	37,438,000	0	37,438,000	1,044,012,000	13,228,000	0	0
06/30/2037	20.525%	0	374,399,000	1,071,936,000	296,860,000	82,323,000	23,713,000	58,610,000	0	0	0	1,281,000	33,697,000	0	33,697,000	1,052,469,000	12,929,000	0	0
06/30/2038	20.525%	0	335,505,000	1,147,827,000	304,454,000	81,779,000	22,328,000	59,451,000	0	0	0	1,167,000	30,197,000	0	30,197,000	1,057,189,000	12,637,000	0	0
06/30/2039	20.525%	0	297,452,000	1,224,409,000	312,362,000	81,072,000	20,946,000	60,126,000	0	0	0	1,169,000	26,772,000	0	26,772,000	1,059,463,000	12,346,000	0	0
06/30/2040	20.525%	0	260,104,000	1,303,187,000	320,866,000	80,293,000	19,571,000	60,722,000	0	0	0	1,125,000	23,411,000	0	23,411,000	1,059,645,000	12,048,000	0	0
06/30/2041	20.525%	0	224,640,000	1,382,521,000	329,870,000	79,362,000	18,208,000	61,154,000	0	0	0	881,000	20,219,000	0	20,219,000	1,057,045,000	11,748,000	0	0
06/30/2042	20.525%	0	190,544,000	1,461,640,000	339,111,000	78,266,000	16,862,000	61,404,000	0	0	0	700,000	17,151,000	0	17,151,000	1,052,086,000	11,450,000	0	0
06/30/2043	20.525%	0	156,865,000	1,541,774,000	348,646,000	77,082,000	15,539,000	61,543,000	0	0	0	457,000	14,120,000	0	14,120,000	1,045,642,000	11,145,000	0	0
06/30/2044	20.525%	0	123,254,000	1,622,624,000	358,341,000	75,807,000	14,244,000	61,563,000	0	0	0	361,000	11,095,000	0	11,095,000	1,038,043,000	10,835,000	0	0
06/30/2045	20.525%	0	92,847,000	1,704,751,000	368,957,000	74,489,000	12,984,000	61,505,000	0	0	0	186,000	8,358,000	0	8,358,000	1,027,049,000	10,517,000	0	0

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION III - GASB 67 ACCOUNTING INFORMATION

B. Net Pension Liability

Net Pension Liability	<u>June 30, 2014</u>	<u>June 30, 2015</u>
Total pension liability	\$14,807,702,914	\$16,307,731,044
Fiduciary net position	1,703,779,000	1,313,148,000
Net pension liability	13,103,923,914	14,994,583,044
Fiduciary net position as a % of total pension liability	11.51%	8.05%
Covered payroll	\$1,171,153,830	\$1,127,499,643
Net pension liability as a % of covered payroll	1118.89%	1329.90%

The total pension liability was determined by an actuarial valuation as of July 1, 2014, calculated based on the discount rate and actuarial assumptions as shown in Section VII and was then projected forward to June 30, 2015. There have been significant changes between the valuation date of July 1, 2014 and the fiscal year end. Any significant changes during this period must be reflected as prescribed by GASB 67. Covered Payroll is as of July 1, 2014.

Discount Rate

The plan's fiduciary net position was not projected to be available to make all projected future benefit payments of current active and inactive members. Therefore, the discount rate for calculating the total pension liability is equal to the single equivalent rate that results in the same actuarial present value as the long-term expected rate of return applied to benefit payments, to the extent that the plan's fiduciary net position is projected to be sufficient to make projected benefit payments, and the municipal bond rate applied to benefit payments, to the extent that the plan's fiduciary net position is not projected to be sufficient.

	<u>June 30, 2014</u>	<u>June 30, 2015</u>
Discount rate	4.33%	3.82%
Long-term expected rate of return net of investment expense	6.65%	6.65%
Municipal bond rate *	4.29%	3.80%

* Bond Buyer General Obligation 20-Bond Municipal Bond Index

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION III - GASB 67 ACCOUNTING INFORMATION

C. GASB 67 Benefit Obligations as of June 30, 2015

	<u>Basic System Benefits</u>	<u>System Administered Benefits</u>	<u>Total</u>
1. Projected Benefits Payable to Retirees and Beneficiaries			
Retirees	\$9,390,281,087	\$357,334,194	\$9,747,615,281
Disabled Members	210,277,878	24,343,716	234,621,594
Beneficiaries	<u>158,674,937</u>	<u>9,106,888</u>	<u>167,781,825</u>
Total	9,759,233,902	390,784,798	10,150,018,700
2. Projected Benefits Payable to Vested Terminated Members	62,256,807	664,479	62,921,286
3. Actuarial Accrued Liability for Active Members	6,068,117,758	221,151	6,068,338,909
4. Refund of Contributions due to former members	26,452,149	0	26,452,149
5. Total Pension Liability as of June 30, 2015:			
(1) + (2) + (3) + (4)	\$15,916,060,616	\$391,670,428	\$16,307,731,044

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

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION III - GASB 67 ACCOUNTING INFORMATION

D. Changes in Net Pension Liability

Changes in Net Pension Liability	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances as of June 30, 2014	\$14,807,702,914	\$1,703,779,000	\$13,103,923,914
Changes for the year:			
Service cost	273,753,702		273,753,702
Interest on total pension liability	637,848,950		637,848,950
Effect of plan changes	0		0
Effect of economic/demographic (gains) or losses	88,544,378		88,544,378
Effect of assumptions changes or inputs	1,235,988,100		1,235,988,100
Benefit payments	(736,107,000)	(736,107,000)	0
Administrative expenses		(18,683,000)	18,683,000
Member contributions		105,120,000	(105,120,000)
Net investment income		64,035,000	(64,035,000)
Transfer		2,345,000	(2,345,000)
Employer contributions		192,659,000	(192,659,000)
Balances as of June 30, 2015	\$16,307,731,044	\$1,313,148,000	\$14,994,583,044

E. Sensitivity Analysis

The following presents the net pension liability of PRTRS, calculated using the discount rate of 3.82%, as well as what the System's net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (2.82%) or 1 percentage point higher (4.82%) than the current rate.

	1% Decrease 2.82%	Current Discount Rate 3.82%	1% Increase 4.82%
Total pension liability	\$18,739,446,346	\$16,307,731,044	\$14,326,587,662
Fiduciary net position	1,313,148,000	1,313,148,000	1,313,148,000
Net pension liability	17,426,298,346	14,994,583,044	13,013,439,662

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV – MANAGEMENT INFORMATION

A. Projection to Determine Annual Additional Contribution

The projection to determine the Annual Additional Contribution (“AAC”) for fiscal year 2018-2019 through 2041-2042 was determined on a deterministic basis and reflects the following:

- Projected investment income is based on the June 30, 2015 investment return assumption of 6.65% per year.
- All demographic assumptions are assumed to be met in future years (i.e. – no gains or losses from demographic sources are expected to occur).
- Employer contributions in each future year are calculated based on the statutory payroll-based employer contribution rate as applied to the projected future payroll.
- This projection assumed that the additional contributions defined in Article 1.1 of 160-2013 will be paid when due.
- This projection reflects 1,358 actual retirements from active status in July 2014 in the census data, decreasing the active membership to 37,700. In determining projected employer contributions, the active membership was then assumed to further decrease to 36,375 (the January 2016 count of active members provided by the System) and to remain at that lower level throughout the projection period (i.e. – members who leave are replaced, but no net new hiring occurs).
- The new entrant cohort used for projection purposes is based on members hired between July 1, 2013 and July 1, 2014. Salaries for future new entrant cohorts were assumed to remain level through June 30, 2017 due to Act 66-2014 and then to increase 2.5% per year thereafter.
- Administrative expenses were assumed to remain level.
- While the projection assumes that the additional contributions are paid at the end of the fiscal year, the estimated AAC amount was determined assuming that the additional contributions for a fiscal year would be accelerated as necessary during the fiscal year to prevent asset exhaustion within that fiscal year.

Given the Board’s recent decision to segregate hybrid plan assets, the AAC was determined such that total System assets would not fall below \$300 million in any future year (in accordance with the statute) with a second constraint added that the portion of the assets attributable to legacy DB plan members would not fall below \$0 in any future year. If the second constraint was not added, while total System assets could be above \$300 million as the hybrid plan accounts grow, the legacy DB plan portion of the assets would become exhausted.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV – MANAGEMENT INFORMATION

Based on the methodology and inputs discussed above, the projected Annual Additional Contribution for Fiscal Year 2018-2019 is \$543.9 million, payable at the end of the fiscal year.

As seen on the chart at the end of this subsection, the AAC of \$543.9 million payable from Fiscal Year 2018-2019 to 2041-2042, in conjunction with the Teacher's Justice Uniform Contribution payable from Fiscal Year 2016-2017 to 2041-2042, is projected on a deterministic basis to prevent a decrease in total System assets below \$300 million in any future year from 2018-2019 onward and also to prevent a decrease in legacy DB plan assets below \$0 in any future year from 2018-2019 onward. (Note that total System assets are expected to drop below \$300 million in 2017-2018, prior to the commencement of the AAC payment period. Act 160 does not specifically address this possibility.)

This projection has been performed on a deterministic basis and the resulting AAC should be viewed as a single point estimate based on the median (50th percentile) expectation for the net investment return assumption. Differences between projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. It is certain that actual experience will not conform exactly to the assumptions used in this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience.

Due to potential future deviation in demographic experience, and volatility in investment returns, even assuming that the full amount of the AAC is paid every year through FY 2041-42, there is no guarantee that total System assets will remain above \$300 million and Legacy DB plan assets will remain above \$0 in all years thereafter. Also please note the volatility of the AAC itself will increase each year as FY 2041-42 approaches and the remaining payment period shrinks.

In each future year the AAC will be recalculated, and will increase or decrease depending on items including, but not limited to, the following:

- Demographic gains/losses (including changes in the size of the active membership and/or total payroll different than expected)
- Investment gains/losses
- Assumption changes
- Benefit provision changes
- Other statutory changes

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV – MANAGEMENT INFORMATION

Illiquid Assets

As of June 30, 2015, PRTRS had approximately \$444 million in illiquid assets, comprised primarily of loans to System members. This projection assumes that these illiquid assets will be converted to liquid assets when needed. Note that the projection indicates that assets are expected to fall below \$444 million during fiscal year 2017-2018, one fiscal year before the first AAC contribution is due.

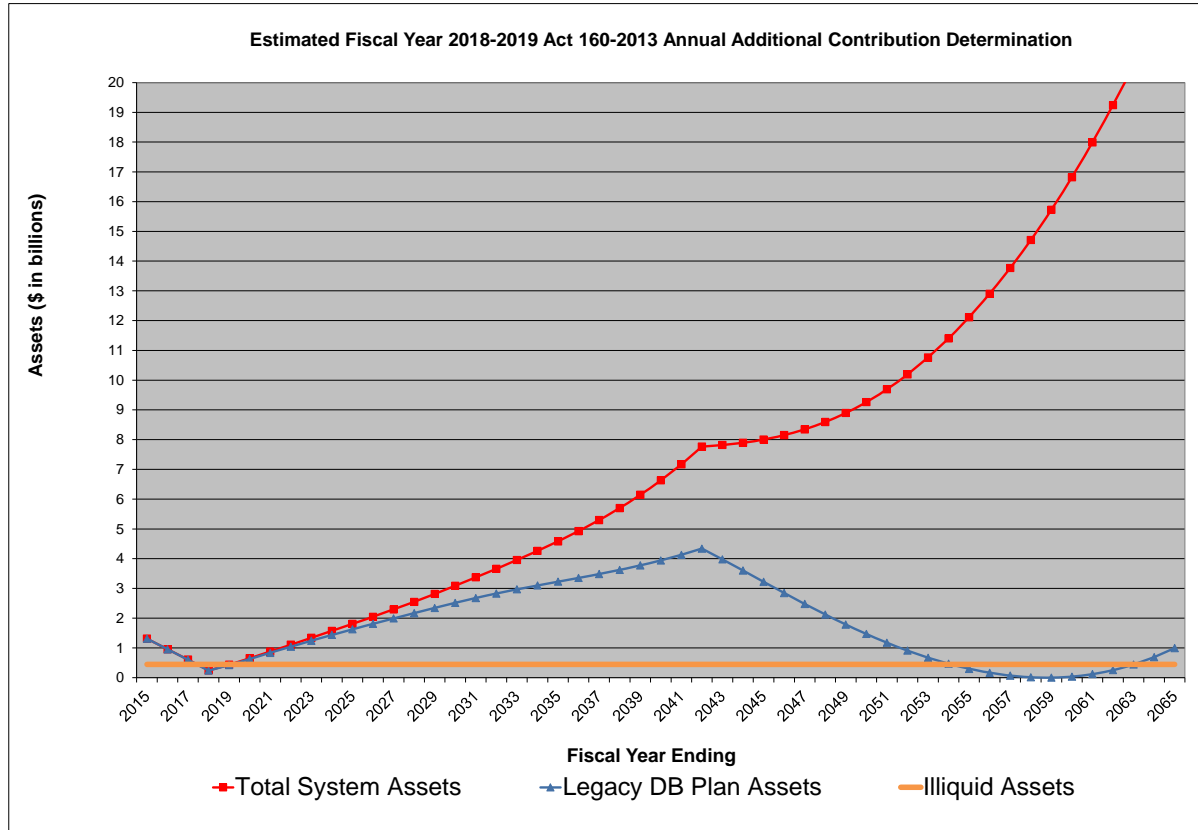
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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV – MANAGEMENT INFORMATION

Puerto Rico Teachers Retirement System - Cash Flow Projection Based on Results of June 30, 2015 Actuarial Valuation

INPUT ITEMS					
Fiscal Period		Investment Return	Employer Contribution Rate	Combined TJUC & AAC (\$ millions)	Illiquid Asset Balance at Year-End (\$ millions)
July 1 to	June 30				
2015	2016	6.65%	13.500%	0.0	444
2016	2017	6.65%	14.750%	30.0	444
2017	2018	6.65%	16.000%	30.0	444
2018	2019	6.65%	17.250%	603.9	444
2019	2020	6.65%	18.500%	603.9	444
2020	2021	6.65%	19.750%	603.9	444
2021	2022	6.65%	20.525%	603.9	444
2022	2023	6.65%	20.525%	603.9	444
2023	2024	6.65%	20.525%	603.9	444
2024	2025	6.65%	20.525%	603.9	444
2025	2026	6.65%	20.525%	603.9	444
2026	2027	6.65%	20.525%	603.9	444
2027	2028	6.65%	20.525%	603.9	444
2028	2029	6.65%	20.525%	603.9	444
2029	2030	6.65%	20.525%	603.9	444
2030	2031	6.65%	20.525%	603.9	444
2031	2032	6.65%	20.525%	603.9	444
2032	2033	6.65%	20.525%	603.9	444
2033	2034	6.65%	20.525%	603.9	444
2034	2035	6.65%	20.525%	603.9	444
2035	2036	6.65%	20.525%	603.9	444
2036	2037	6.65%	20.525%	603.9	444
2037	2038	6.65%	20.525%	603.9	444
2038	2039	6.65%	20.525%	603.9	444
2039	2040	6.65%	20.525%	603.9	444
2040	2041	6.65%	20.525%	603.9	444
2041	2042	6.65%	20.525%	603.9	444
2042	2043	6.65%	20.525%	0.0	444
2043	2044	6.65%	20.525%	0.0	444
2044	2045	6.65%	20.525%	0.0	444
2045	2046	6.65%	20.525%	0.0	444
2046	2047	6.65%	20.525%	0.0	444
2047	2048	6.65%	20.525%	0.0	444
2048	2049	6.65%	20.525%	0.0	444
2049	2050	6.65%	20.525%	0.0	444
2050	2051	6.65%	20.525%	0.0	444
2051	2052	6.65%	20.525%	0.0	444
2052	2053	6.65%	20.525%	0.0	444
2053	2054	6.65%	20.525%	0.0	444
2054	2055	6.65%	20.525%	0.0	444
2055	2056	6.65%	20.525%	0.0	444
2056	2057	6.65%	20.525%	0.0	444
2057	2058	6.65%	20.525%	0.0	444
2058	2059	6.65%	20.525%	0.0	444
2059	2060	6.65%	20.525%	0.0	444
2060	2061	6.65%	20.525%	0.0	444
2061	2062	6.65%	20.525%	0.0	444
2062	2063	6.65%	20.525%	0.0	444
2063	2064	6.65%	20.525%	0.0	444
2064	2065	6.65%	20.525%	0.0	444



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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV – MANAGEMENT INFORMATION

B. Alternate Projection to Determine GASB 67 Date of Depletion (if any)

This alternate date of depletion projection was performed on the same basis as the projection shown in Subsection A of Section III, with the exception that the additional contributions under Article 1.1 of Act 160-2013 are assumed to be made. The Annual Additional Contribution payable from fiscal year 2018-2019 through 2041-2042 is the amount determined in Subsection A above of \$543.9 million.

As shown at the end of this subsection, System assets are not expected to be exhausted under this alternate GASB 67 projection basis.

Accordingly, because assets are not expected to be exhausted, the discount rate as of June 30, 2015 under this alternative scenario would be equal to the investment return of 6.65% per year as of June 30, 2015.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IV – MANAGEMENT INFORMATION

**Alternate GASB 67 Projection as of June 30, 2015 to determine Date of Depletion (if any)
With Additional Contributions**

Fiscal Year Ending	Employer Contribution Rate	Beginning of Year Assets	Estimated Payroll for Members Active as of the Valuation Date	Estimated Payroll for Members Hired After the Valuation Date	Estimated Employer Payroll Based Contribution	Estimated Gross Employer Supplemental Contribution (per Act 160-2013 Section 4.9(b))	Estimated Special 'Bonus' Benefits paid from Supplemental Contribution	Estimated Net Employer Supplemental Contribution (per Act 160-2013 Section 4.9(b))	Estimated Teacher's Justice Uniform Contribution (assumed paid end of year)	Estimated Annual Additional Contribution (assumed paid end of year)	Estimated Act 70-2010 Contribution	Estimated Employer Contribution per Act 160-2013 Section 4.4(d)	Estimated Contribution from Members hired before August 2014 Active as of the Valuation Date	Estimated Contribution from Members hired after July 2014 Active as of the Valuation Date	Estimated Contribution from All Members Active as of the Valuation Date	Estimated Benefit Payments to Retired and Active Members as of the Valuation Date	Estimated Administrative Expenses for Retired and Active Members as of the Valuation Date	Estimated Investment Income	End of Year Assets	
06/30/2016	13.500%	1,313,148,000	1,082,433,000	0	146,128,000	70,497,000	49,771,000	20,726,000	0	0	323,000	3,155,000	97,419,000	0	97,419,000	679,371,000	19,243,000	73,229,000	955,514,000	
06/30/2017	14.750%	955,514,000	1,049,177,000	13,908,000	156,805,000	71,127,000	48,736,000	22,391,000	30,000,000	0	340,000	2,589,000	94,426,000	0	94,426,000	686,993,000	19,070,000	49,490,000	605,493,000	
06/30/2018	16.000%	605,493,000	1,044,591,000	36,802,000	173,023,000	71,854,000	47,676,000	24,178,000	30,000,000	0	352,000	2,284,000	94,014,000	0	94,014,000	697,462,000	18,806,000	26,446,000	239,521,000	
06/30/2019	17.250%	239,521,000	1,034,488,000	63,434,000	189,391,000	72,646,000	46,591,000	26,055,000	60,000,000	543,900,000	374,000	1,963,000	93,105,000	0	93,105,000	710,756,000	18,525,000	2,240,000	427,269,000	
06/30/2020	18.500%	427,269,000	1,017,310,000	94,206,000	205,630,000	73,558,000	45,483,000	28,075,000	60,000,000	543,900,000	387,000	1,890,000	91,559,000	0	91,559,000	728,069,000	18,226,000	14,714,000	627,129,000	
06/30/2021	19.750%	627,129,000	993,342,000	130,779,000	222,014,000	74,680,000	44,351,000	30,329,000	60,000,000	543,900,000	368,000	1,732,000	89,402,000	0	89,402,000	749,250,000	17,894,000	27,856,000	835,586,000	
06/30/2022	20.525%	835,586,000	965,003,000	171,398,000	233,246,000	75,851,000	43,194,000	32,657,000	60,000,000	543,900,000	291,000	1,599,000	86,851,000	0	86,851,000	772,341,000	17,553,000	41,327,000	1,045,563,000	
06/30/2023	20.525%	1,045,563,000	934,248,000	215,264,000	235,937,000	77,013,000	42,017,000	34,996,000	60,000,000	543,900,000	215,000	1,495,000	84,083,000	0	84,083,000	795,946,000	17,212,000	54,598,000	1,247,629,000	
06/30/2024	20.525%	1,247,629,000	902,663,000	261,271,000	238,898,000	78,070,000	40,819,000	37,251,000	60,000,000	543,900,000	199,000	1,311,000	81,241,000	0	81,241,000	818,728,000	16,882,000	67,372,000	1,442,190,000	
06/30/2025	20.525%	1,442,190,000	871,130,000	308,756,000	242,172,000	78,981,000	39,601,000	39,380,000	60,000,000	543,900,000	179,000	1,208,000	78,403,000	0	78,403,000	840,004,000	16,568,000	79,704,000	1,630,565,000	
06/30/2026	20.525%	1,630,565,000	839,358,000	357,604,000	245,677,000	79,708,000	38,363,000	41,345,000	60,000,000	543,900,000	94,000	1,209,000	75,543,000	0	75,543,000	859,779,000	16,263,000	91,677,000	1,813,969,000	
06/30/2027	20.525%	1,813,969,000	806,693,000	408,311,000	249,380,000	80,301,000	37,106,000	43,195,000	60,000,000	543,900,000	61,000	1,313,000	72,604,000	0	72,604,000	878,277,000	15,967,000	103,366,000	1,993,543,000	
06/30/2028	20.525%	1,993,543,000	773,699,000	461,094,000	253,441,000	80,800,000	35,830,000	44,970,000	60,000,000	543,900,000	6,000	1,378,000	69,634,000	0	69,634,000	896,471,000	15,675,000	114,848,000	2,170,575,000	
06/30/2029	20.525%	2,170,575,000	740,020,000	515,128,000	257,619,000	81,129,000	34,539,000	46,590,000	60,000,000	543,900,000	0	1,591,000	66,603,000	0	66,603,000	911,402,000	15,393,000	126,206,000	2,346,289,000	
06/30/2030	20.525%	2,346,289,000	702,209,000	571,599,000	261,449,000	81,373,000	33,229,000	48,144,000	60,000,000	543,900,000	0	1,833,000	63,200,000	0	63,200,000	928,788,000	15,111,000	137,405,000	2,518,321,000	
06/30/2031	20.525%	2,518,321,000	658,076,000	633,261,000	265,047,000	81,698,000	31,904,000	49,794,000	60,000,000	543,900,000	0	2,051,000	59,228,000	0	59,228,000	949,386,000	14,811,000	148,229,000	2,682,372,000	
06/30/2032	20.525%	2,682,372,000	608,661,000	700,407,000	268,686,000	82,098,000	30,565,000	51,533,000	60,000,000	543,900,000	0	2,150,000	54,781,000	0	54,781,000	972,418,000	14,494,000	158,429,000	2,834,940,000	
06/30/2033	20.525%	2,834,940,000	557,290,000	772,383,000	272,915,000	82,514,000	29,214,000	53,300,000	60,000,000	543,900,000	0	1,983,000	50,157,000	0	50,157,000	995,313,000	14,166,000	167,876,000	2,975,593,000	
06/30/2034	20.525%	2,975,593,000	507,641,000	846,397,000	277,916,000	82,780,000	27,850,000	54,930,000	60,000,000	543,900,000	0	1,690,000	45,889,000	0	45,889,000	1,015,216,000	13,843,000	176,650,000	3,107,311,000	
06/30/2035	20.525%	3,107,311,000	460,548,000	920,757,000	283,513,000	82,819,000	26,477,000	56,342,000	60,000,000	543,900,000	0	1,498,000	41,451,000	0	41,451,000	1,031,446,000	13,532,000	184,973,000	3,234,010,000	
06/30/2036	20.525%	3,234,010,000	415,964,000	996,105,000	289,827,000	82,670,000	25,097,000	57,573,000	60,000,000	543,900,000	0	1,353,000	37,438,000	0	37,438,000	1,044,012,000	13,228,000	193,108,000	3,359,970,000	
06/30/2037	20.525%	3,359,970,000	374,399,000	1,071,936,000	296,860,000	82,323,000	23,713,000	58,610,000	60,000,000	543,900,000	0	1,281,000	33,697,000	0	33,697,000	1,052,469,000	12,929,000	201,357,000	3,490,278,000	
06/30/2038	20.525%	3,490,278,000	335,505,000	1,147,827,000	304,454,000	81,779,000	22,328,000	59,451,000	60,000,000	543,900,000	0	1,167,000	30,197,000	0	30,197,000	1,057,189,000	12,637,000	210,035,000	3,629,657,000	
06/30/2039	20.525%	3,629,657,000	297,452,000	1,224,409,000	312,362,000	81,072,000	20,946,000	60,126,000	60,000,000	543,900,000	0	1,169,000	26,772,000	0	26,772,000	1,059,463,000	12,346,000	219,408,000	3,781,587,000	
06/30/2040	20.525%	3,781,587,000	260,104,000	1,303,187,000	320,866,000	80,293,000	19,571,000	60,722,000	60,000,000	543,900,000	0	1,125,000	23,411,000	0	23,411,000	1,059,645,000	12,048,000	229,702,000	3,949,620,000	
06/30/2041	20.525%	3,949,620,000	224,640,000	1,382,521,000	329,870,000	79,362,000	18,208,000	61,154,000	60,000,000	543,900,000	0	881,000	20,219,000	0	20,219,000	1,057,045,000	11,748,000	241,167,000	4,138,018,000	
06/30/2042	20.525%	4,138,018,000	190,544,000	1,461,640,000	339,111,000	78,266,000	16,862,000	61,404,000	60,000,000	543,900,000	0	700,000	17,151,000	0	17,151,000	1,052,086,000	11,450,000	254,072,000	4,350,818,000	
06/30/2043	20.525%	4,350,818,000	156,865,000	1,541,774,000	348,646,000	77,082,000	15,530,000	61,543,000	0	0	0	457,000	14,120,000	0	14,120,000	1,045,642,000	11,145,000	268,653,000	3,987,451,000	
06/30/2044	20.525%	3,987,451,000	123,254,000	1,622,624,000	358,341,000	75,807,000	14,244,000	61,563,000	0	0	0	361,000	11,095,000	0	11,095,000	1,038,043,000	10,835,000	244,963,000	3,614,897,000	
06/30/2045	20.525%	3,614,897,000	92,847,000	1,704,751,000	368,957,000	74,489,000	12,984,000	61,505,000	0	0	0	186,000	8,358,000	0	8,358,000	1,027,049,000	10,517,000	220,809,000	3,237,145,000	
06/30/2046	20.525%	3,237,145,000	69,419,000	1,782,556,000	380,118,000	72,908,000	11,765,000	61,143,000	0	0	0	62,000	6,250,000	0	6,250,000	1,009,849,000	10,209,000	198,541,000	2,861,201,000	
06/30/2047	20.525%	2,861,201,000	52,107,000	1,855,610,000	391,559,000	71,097,000	10,592,000	60,505,000	0	0	0	26,000	4,692,000	0	4,692,000	987,202,000	9,907,000	172,583,000	2,493,466,000	
06/30/2048	20.525%	2,493,466,000	39,295,000	1,925,063,000	403,184,000	69,146,000	9,472,000	59,674,000	0	0	0	6,000	3,539,000	0	3,539,000	960,546,000	9,607,000	149,335,000	2,139,051,000	
06/30/2049	20.525%	2,139,051,000	29,695,000	1,991,740,000	414,900,000	67,132,000	8,408,000	58,724,000	0	0	0	0	6,000	2,675,000	0	2,675,000	931,004,000	9,303,000	127,067,000	1,802,116,000
06/30/2050	20.525%	1,802,116,000	22,452,000	2,056,340,000	426,672,000	65,121,000	7,409,000	57,712,000	0	0	0	7,000	2,023,000	0	2,023,000	899,374,000	8,993,000	106,037,000	1,486,199,000	
06/30/2051	20.525%	1,486,199,000	16,975,000	2,119,319,000	438,474,000	63,154,000	6,474,000	56,680,000	0	0	0	8,000	1,530,000	0	1,530,000	866,241,000	8,674,000	86,459,000	1,194,435,000	
06/30/2052	20.525%	1,194,435,000	12,805,000	2,180,994,000	450,277,000	61,273,000	5,609,000	55,664,000	0	0	0	0	1,155,000	0	1,155,000	832,088,000	8,347,000	68,525,000	929,620,000	
06/30/2053	20.525%	929,620,000	9,619,000	2,241,564,000	462,055,000	59,508,000	4,816,000	54,892,000	0	0	0	0	868,000	0	868,000	797,297,000	8,011,000	52,408,000	694,335,000	
06/30/2054	20.525%	694,335,000	7,216,000	2,301,238,000	473,810,000	57,886,000	4,095,000	53,791,000	0	0	0	0	651,000	0	651,000	762,165,000	7,667,000	38,270,000	491,026,000	
06/30/2055	20.525%	491,026,000	5,384,000	2,360,165,000	485,529,000	56,426,000	3,448,000	52,978,000	0	0	0	0	486,000	0	486,000	726,972,000	7,315,000	26,264,000	321,997,000	
06/30/2056	20.525%	321,997,000	3,995,000	2,418,627,000	497,243,000	55,141,000	2,871,000	52,270,000	0	0	0	0	361,000	0	361,000	691,926,000	6,959,000	16,538,000	189,523,000	
06/30/2057	20.525%	189,523,000	2,930,000	2,476,890,000	508,983,000															

PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 45 ACCOUNTING INFORMATION

A. Benefit Obligations

1. Projected Benefits Payable to Retirees and Beneficiaries	
Retirees	\$515,532,217
Disabled Members	31,440,638
Beneficiaries	<u>0</u>
Total	546,972,855
2. Projected Benefits Payable to Vested Terminated Members	1,545,472
2. Actuarial Accrued Liability for Active Members	0
3. Actuarial Accrued Liability as of June 30, 2015	548,518,327
4. Total Employer Normal Cost as of December 31, 2015	0

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

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 45 ACCOUNTING INFORMATION

B. Development of Unfunded Accrued Liability and Amortization Payment Payable as of December 31, 2015

1. Actuarial Accrued Liability as of June 30, 2015	\$548,518,327
2. Actuarial Value of Assets as of June 30, 2015	0
3. Unfunded Actuarial Accrued Liability as of June 30, 2015: (1) - (2)	548,518,327
4. Amortization Period in years	19
5. Amortization Factor at beginning of year	14.6380
6. Amortization Amount Payable as of December 31, 2015: [(3) / (5)] * (1.0310 ^ 0.5)	\$38,048,604

C. Development of Annual Required Contribution

1. Total Employer Normal Cost as of December 31, 2015	\$0
2. Amortization Payment as of December 31, 2015	38,048,604
3. Annual Required Contribution*: (1) + (2)	38,048,604

* Assumes payments made throughout the year.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 45 ACCOUNTING INFORMATION

D. Development of Net OPEB Obligation as of June 30, 2015

1. Net OPEB Obligation as of June 30, 2014	\$63,677,886
2. Annual OPEB Cost for Fiscal Year 2014 - 2015	33,946,314
3. Fiscal Year 2014 - 2015 Employer Contribution	37,776,000
4. Net OPEB Obligation as of June 30, 2015: (1) + (2) - (3)	\$59,848,200

E. Development of Fiscal Year 2015 - 2016 Annual OPEB Cost

1. Annual Required Contribution	\$38,048,604
2. Interest on Net OPEB Obligation as of June 30, 2015	1,855,294
3. Adjustment to the Annual Required Contribution	4,215,295
4. Fiscal Year 2015 - 2016 Annual OPEB Cost: (1) + (2) - (3)	\$35,688,603

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - GASB 45 ACCOUNTING INFORMATION

F. Schedule of Employer Contributions

Year Ended <u>June 30</u>	Actual Employer <u>Contribution</u>	Annual Required <u>Contribution</u>	Percent <u>Contributed</u>	Annual OPEB <u>Cost</u>	Percent <u>Contributed</u>
2016	\$38,203,000	\$38,048,604	100.41%*	\$35,688,603	107.05%*
2015	37,776,000	36,292,129	104.09	33,946,314	111.28
2014	35,892,000	46,402,944	77.35	45,901,955	78.19
2013	34,239,000	45,668,532	74.97	45,333,986	75.53
2012	34,471,000	41,068,597	83.94	40,980,028	84.12
2011	33,432,000	39,925,237	83.74	39,896,228	83.80
2010	30,161,000	42,487,047	70.99	42,493,786	70.98

* Percentage contributed for the year ended June 30, 2016 assumes the actual employer contribution is the expected pay-as-you-go amounts for the Medical Insurance Plan Contribution.

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

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - 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>
06/30/2015	\$0	\$548,518,327	\$548,518,327	0.0%	1,127,499,643	48.6%
06/30/2014	0	543,205,105	543,205,105	0.0%	1,171,153,830	46.4%
06/30/2013	0	792,875,089	792,875,089	0.0%	1,248,674,490	63.5%
06/30/2012	0	797,332,237	797,332,237	0.0%	1,292,974,899	61.7%
06/30/2011	0	706,068,965	706,068,965	0.0%	1,320,399,637	53.5%
06/30/2010	0	694,229,882	694,229,882	0.0%	1,370,343,618	50.7%

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

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION V - 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, 2016. The ARC is for the Medical Insurance Plan Contribution. See Section I for more information.

Valuation Date:	June 30, 2015
Actuarial Cost Method:	Entry Age Normal
Amortization method:	20 years closed (beginning July 1, 2014), level dollar
Remaining Amortization Period:	19 years
Asset valuation method:	Market Value of Assets
Assumptions:	
Investment rate of return	3.10%
Projected Salary Increases	not applicable
Payroll growth	not applicable
Inflation	not applicable
Cost of Living Adjustments	not applicable

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI – CENSUS DATA

A. Reconciliation with Prior Valuation

	<u>Active</u> ¹	<u>Terminated Vested</u>	<u>Retirees, Disabled Members, and Beneficiaries</u>	<u>Total</u>
Members as of July 1, 2013	39,343	689	40,601	80,633
Changes				
Terminated Vested	(103)	103	0	0
Retired & Disabled	(1,510)	(30)	1,540	0
Death	(68)	(17)	(660)	(745)
Disappeared	(725)	(1)	(9)	(735)
Return/Transfer of Contributions	(1,187)	(195)	0	(1,382)
Return to Active	424	(28)	(2)	394
New	1,526	6	191	1,723
Members as of July 1, 2014	37,700 ²	527	41,661	79,888

¹ The July 1, 2013 census data reflects new retirements during 2013-2014 and the July 1, 2014 census data reflect retirements during July 2014.

² Includes 206 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 July 1, 2015 for former participants who terminated employment by July 1, 2015 with less than ten years of service and have not received a return of contributions as of July 1, 2015.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI – CENSUS DATA

B. Summary of Active Members as of July 1, 2014

Number of Male Participants by Age and Service Groups

Age	Years of Credited Service										Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up	
0-24	11	7	1	-	-	-	-	-	-	-	19
25-29	133	264	37	-	-	-	-	-	-	-	434
30-34	78	275	394	68	-	-	-	-	-	-	815
35-39	30	123	281	621	39	1	-	-	-	-	1,095
40-44	20	92	125	460	356	38	-	-	-	-	1,091
45-49	21	56	120	240	278	593	63	1	-	-	1,372
50-54	13	51	77	172	191	488	500	9	1	-	1,502
55-59	11	28	68	131	140	213	264	9	8	-	872
60-64	7	16	20	51	48	67	66	9	8	1	293
65-69	1	7	5	23	10	20	11	-	2	2	81
70&Up	1	3	5	3	4	4	4	-	2	1	27
Total	326	922	1,133	1,769	1,066	1,424	908	28	21	4	7,601

Average Compensation of Male Participants by Age and Service Groups

Age	Years of Credited Service										Average
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up	
0-24	21,266	20,554	22,140	-	-	-	-	-	-	-	21,050
25-29	21,077	21,488	23,567	-	-	-	-	-	-	-	21,539
30-34	21,404	21,149	23,719	29,101	-	-	-	-	-	-	23,079
35-39	21,956	21,272	23,760	30,573	35,702	28,200	-	-	-	-	27,724
40-44	20,648	23,889	24,572	31,507	34,363	35,235	-	-	-	-	30,933
45-49	23,784	24,322	24,356	31,006	34,198	34,821	35,496	32,760	-	-	32,544
50-54	24,975	24,488	24,634	29,924	33,582	34,536	35,734	38,086	32,460	-	33,374
55-59	24,486	23,684	22,948	29,276	32,539	34,231	35,184	32,588	37,978	-	32,179
60-64	22,423	23,689	24,927	29,948	32,904	35,197	34,609	37,255	40,088	33,060	32,330
65-69	21,000	23,858	22,296	30,574	35,836	35,864	32,983	-	39,708	35,508	31,995
70&Up	19,356	21,760	20,004	27,516	33,364	33,465	35,025	-	32,754	41,940	28,965
Average	21,684	22,053	23,899	30,636	33,934	34,670	35,439	35,861	38,186	36,504	30,042

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI – CENSUS DATA

B. Summary of Active Members as of July 1, 2014

Number of Female Participants by Age and Service Groups

Age	Years of Credited Service										Total	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
0-24	105	32	1	-	-	-	-	-	-	-	-	138
25-29	508	1,179	238	-	-	-	-	-	-	-	-	1,925
30-34	366	1,133	1,584	281	3	-	-	-	-	-	-	3,367
35-39	198	628	1,061	2,252	156	3	-	-	-	-	-	4,298
40-44	114	387	644	1,809	1,199	246	2	-	-	-	-	4,401
45-49	75	292	479	1,198	1,148	2,302	356	2	-	-	-	5,852
50-54	45	166	319	896	787	1,919	1,888	51	-	-	-	6,071
55-59	28	81	162	483	469	822	747	60	9	-	-	2,861
60-64	5	26	59	149	124	232	203	29	30	10	-	867
65-69	-	6	23	22	40	53	64	10	5	14	-	237
70&Up	1	6	1	13	9	11	15	7	4	15	-	82
Total	1,445	3,936	4,571	7,103	3,935	5,588	3,275	159	48	39	-	30,099

Average Compensation of Female Participants by Age and Service Groups

Age	Years of Credited Service										Average	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
0-24	20,796	20,940	21,600	-	-	-	-	-	-	-	-	20,835
25-29	21,041	21,488	22,410	-	-	-	-	-	-	-	-	21,484
30-34	21,938	21,499	23,670	29,282	25,100	-	-	-	-	-	-	23,221
35-39	22,409	21,587	24,120	31,022	34,167	30,070	-	-	-	-	-	27,656
40-44	22,103	22,204	24,303	31,423	34,213	34,566	41,682	-	-	-	-	30,269
45-49	23,000	21,960	24,402	30,960	33,734	34,882	36,411	33,810	-	-	-	32,292
50-54	23,547	22,637	24,186	30,905	33,620	34,636	35,484	39,008	-	-	-	33,295
55-59	24,710	23,491	24,147	30,645	33,484	34,351	35,354	40,333	36,310	-	-	32,997
60-64	28,126	25,476	23,891	30,042	33,364	34,293	35,068	36,889	38,398	32,988	-	32,817
65-69	-	23,940	25,408	29,714	32,167	34,146	36,125	39,066	38,496	40,029	-	33,476
70&Up	32,760	28,230	28,386	30,194	31,947	35,173	35,694	36,591	34,602	35,174	-	33,598
Average	21,805	21,738	23,940	30,979	33,806	34,672	35,547	38,953	37,700	36,357	-	29,873

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI – CENSUS DATA

B. Summary of Active Members as of July 1, 2013

Number of All Active Participants by Age and Service Groups

Age	Years of Credited Service										Total	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
0-24	116	39	2	-	-	-	-	-	-	-	-	157
25-29	641	1,443	275	-	-	-	-	-	-	-	-	2,359
30-34	444	1,408	1,978	349	3	-	-	-	-	-	-	4,182
35-39	228	751	1,342	2,873	195	4	-	-	-	-	-	5,393
40-44	134	479	769	2,269	1,555	284	2	-	-	-	-	5,492
45-49	96	348	599	1,438	1,426	2,895	419	3	-	-	-	7,224
50-54	58	217	396	1,068	978	2,407	2,388	60	1	-	-	7,573
55-59	39	109	230	614	609	1,035	1,011	69	17	-	-	3,733
60-64	12	42	79	200	172	299	269	38	38	11	-	1,160
65-69	1	13	28	45	50	73	75	10	7	16	-	318
70&Up	2	9	6	16	13	15	19	7	6	16	-	109
Total	1,771	4,858	5,704	8,872	5,001	7,012	4,183	187	69	43	-	37,700

Average Compensation of All Active Participants by Age and Service Groups

Age	Years of Credited Service										Average	
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40&Up		
0-24	20,841	20,871	21,870	-	-	-	-	-	-	-	-	20,862
25-29	21,049	21,488	22,566	-	-	-	-	-	-	-	-	21,494
30-34	21,844	21,431	23,680	29,247	25,100	-	-	-	-	-	-	23,193
35-39	22,349	21,535	24,045	30,925	34,474	29,602	-	-	-	-	-	27,670
40-44	21,886	22,527	24,347	31,440	34,247	34,655	41,682	-	-	-	-	30,401
45-49	23,171	22,340	24,393	30,968	33,825	34,870	36,274	33,460	-	-	-	32,340
50-54	23,867	23,072	24,273	30,747	33,613	34,616	35,536	38,869	32,460	-	-	33,310
55-59	24,647	23,540	23,793	30,353	33,267	34,327	35,309	39,323	37,095	-	-	32,806
60-64	24,799	24,795	24,153	30,018	33,236	34,496	34,955	36,976	38,754	32,995	-	32,694
65-69	21,000	23,896	24,852	30,154	32,901	34,617	35,664	39,066	38,842	39,464	-	33,098
70&Up	26,058	26,073	21,401	29,692	32,383	34,718	35,553	36,591	33,986	35,597	-	32,451
Average	21,783	21,798	23,932	30,910	33,834	34,672	35,523	38,490	37,848	36,370	-	29,907

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI – CENSUS DATA

C. Summary of Terminated Vested Members as of July 1, 2014

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>	<u>Count</u>	<u>Average Annual Pension Basic System Benefit</u>
Under 35	1	5,234	1	3,600	2	4,417
35-39	5	5,039	20	6,533	25	6,234
40-44	9	6,066	53	6,871	62	6,754
45-49	23	8,679	76	7,794	99	7,999
50-54	35	8,374	80	8,264	115	8,297
55-59	41	11,583	89	10,097	130	10,566
60-64	15	10,395	44	10,089	59	10,167
65 & Over	<u>11</u>	9,661	<u>24</u>	12,175	<u>35</u>	11,385
All Ages	140	9,392	387	8,751	527	8,921

The Average Annual Pension amounts above are as of July 1, 2014. The \$400 minimum monthly benefit is not reflected.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI – CENSUS DATA

D. Summary of Retirees as of July 1, 2014

Age	<u>Males</u> Average Annual Pension			<u>Females</u> Average Annual Pension			<u>Total</u> Average Annual Pension		
	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>
Under 45	2	34,115	34,115	7	15,318	15,318	9	19,495	19,495
45-49	7	18,817	18,817	30	16,371	16,371	37	16,833	16,833
50-54	162	23,805	23,805	785	23,063	23,066	947	23,190	23,192
55-59	944	25,730	25,733	4,123	24,979	24,984	5,067	25,119	25,123
60-64	1,739	22,280	22,352	6,848	21,611	21,706	8,587	21,747	21,837
65-69	1,597	18,792	19,226	5,617	17,891	18,363	7,214	18,091	18,554
70-74	1,150	16,037	16,918	3,822	14,703	15,568	4,972	15,012	15,881
75-79	841	13,144	14,345	2,815	11,957	13,178	3,656	12,230	13,446
80-84	776	10,549	12,200	2,100	10,200	11,661	2,876	10,294	11,806
85-89	373	9,780	11,406	1,442	8,964	10,424	1,815	9,131	10,626
90-94	136	8,444	9,845	643	8,527	9,884	779	8,512	9,877
95-99	23	8,869	9,890	169	7,827	9,100	192	7,952	9,194
100 & Over	<u>4</u>	5,420	6,563	<u>55</u>	7,974	9,113	<u>59</u>	7,801	8,940
All Ages	7,754	18,030	18,669	28,456	17,628	18,204	36,210	17,714	18,304

The Average Annual Pension amounts above are as of July 1, 2014. In addition, 1,295 retirees are currently paying annual additional contributions of \$3,515,124 (via a reduced monthly benefit which is not reflected above). The 64 Act 70-2010 retirees as of July 1, 2014 have initial monthly employer contributions totaling \$20,066 and the amounts above do not reflect the deferral of the benefits for these retirees.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI – CENSUS DATA

E. Summary of Disabled Members as of July 1, 2014

Age	<u>Males</u> Average Annual Pension			<u>Females</u> Average Annual Pension			<u>Total</u> Average Annual Pension		
	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>
Under 40	2	4,800	4,800	5	4,841	5,046	7	4,829	4,975
40-44	3	4,800	4,800	27	7,166	7,232	30	6,929	6,989
45-49	17	7,584	7,759	72	8,347	8,476	89	8,201	8,339
50-54	41	9,868	9,974	175	9,644	9,740	216	9,686	9,784
55-59	74	9,307	9,556	278	8,781	9,068	352	8,892	9,171
60-64	63	6,574	7,152	287	7,063	7,609	350	6,975	7,526
65-69	55	5,465	6,249	240	5,393	6,187	295	5,406	6,198
70-74	35	4,667	5,528	232	4,706	5,596	267	4,701	5,587
75-79	24	5,204	6,097	204	4,624	5,505	228	4,685	5,567
80-84	40	4,434	5,315	204	4,450	5,316	244	4,447	5,316
85-89	16	4,724	5,690	124	4,505	5,361	140	4,530	5,399
90-94	6	4,251	5,179	51	4,523	5,366	57	4,494	5,346
95-99	3	4,503	5,359	16	4,316	5,174	19	4,345	5,203
100 & Over	<u>1</u>	11,883	11,883	<u>6</u>	4,450	5,344	<u>7</u>	5,512	6,278
All Ages	380	6,718	7,286	1,921	6,297	6,915	2,301	6,367	6,976

The Average Annual Pension amounts above are as of July 1, 2014.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VI – CENSUS DATA

F. Summary of Beneficiaries as of July 1, 2014

<u>Age</u>	<u>Males</u> <u>Average Annual Pension</u>			<u>Females</u> <u>Average Annual Pension</u>			<u>Total</u> <u>Average Annual Pension</u>		
	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>	<u>Count</u>	<u>Basic System Benefit</u>	<u>Total Benefit</u>
Under 30	27	5,983	6,157	45	4,839	4,944	72	5,268	5,399
30-34	1	7,710	8,116	2	7,262	7,645	3	7,412	7,802
35-39	5	2,206	2,350	9	5,497	5,545	14	4,322	4,404
40-44	4	5,491	5,819	12	4,110	4,222	16	4,455	4,621
45-49	18	4,598	4,744	29	4,477	4,638	47	4,523	4,678
50-54	26	4,917	5,076	31	4,994	5,143	57	4,959	5,112
55-59	51	4,732	4,903	73	6,246	6,461	124	5,623	5,820
60-64	76	6,197	6,406	111	6,843	7,076	187	6,580	6,804
65-69	146	6,012	6,193	213	5,991	6,193	359	6,000	6,193
70-74	163	5,583	5,770	246	5,540	5,754	409	5,557	5,761
75-79	189	4,943	5,125	363	5,014	5,238	552	4,990	5,199
80-84	224	4,667	4,879	361	4,468	4,698	585	4,544	4,767
85-89	182	4,215	4,407	245	4,097	4,301	427	4,147	4,346
90 & Over	<u>138</u>	3,899	4,095	<u>160</u>	3,765	3,943	<u>298</u>	3,827	4,013
All Ages	1,250	4,958	5,149	1,900	5,005	5,214	3,150	4,986	5,188

The Average Annual Pension amounts above are as of July 1, 2014.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS **AS OF JUNE 30, 2015**

PRTRS was established in 1951. Act 160-2013 (enacted December 24, 2013) superseded Act 91-2004 (enacted March 29, 2004), which superseded Act 218-1951 (enacted May 6, 1951).

Two main sets of benefit provisions apply to various members of PRTRS depending on the member's date of hire as a result of Act 160-2013, as modified by the April 11, 2014 decision of the Puerto Rico Supreme Court.

- The first set of provisions applies to members hired on or before July 31, 2014. Distinctions for members who retired August 1, 2014 or later are noted throughout this first set of provisions as applicable.
- The second set of provisions applies to members hired August 1, 2014 or later.

This summary of plan provisions, with separate descriptions for the two sets of benefits and the employer contributions, 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.

Provisions applicable to members hired on or before July 31, 2014

1. Type of Plan

A contributory, defined benefit pension plan.

2. Eligibility for Membership

Members of the Teacher's Retirement System of Puerto Rico include teachers hired by the Department of Education on or before July 31, 2014, retired teachers, licensed teachers working in private schools or other educational organizations who elect to become members on or before July 31, 2014, 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 and on or before July 31, 2014 (Act 160-2013, Article 3.1).

3. Definitions

- a. Fiscal Year: A Fiscal Year is a 12-month period beginning on July 1 and ending on June 30.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

- b. Fund: System Contribution Fund (Act 160-2013, Article 4.1).
- c. General Fund: The General Expenses Budget of the Government of the Commonwealth of Puerto Rico.
- d. Creditable Service: The years and months of plan participation, during which contributions have been made, beginning on the date of the first original appointment for rendering services. For purposes of calculating Creditable Service, 15 calendar days of a school year month shall be equal to 1 calendar month worked during the school year for teachers; and 21 calendar days of a month shall be equal to 1 calendar month worked for other participants. (Act 160-2013, Article 3.8) Creditable Service also includes purchased service, if any (Act 160-2013, Articles 3.6 and 3.8).
- e. Compensation: The gross cash compensation, excluding bonuses and overtime, upon which contributions by a Member to the Fund are based (Act 160-2013, Article 1.1).
- f. Average Compensation: The average of the 36 highest months of compensation that the participant has received for Creditable Service (Act 160-2013, Article 1.1).
- g. Average Non-occupational Disability Compensation: The average of the 60 highest consecutive months of compensation that the participant has received. (Act 160-2013, Article 4.6).
- h. Average Occupational Disability Compensation: The average of the 60 highest consecutive 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 160-2013, Article 4.6).
- i. Contributions: The amount deducted from the compensation of a Member or directly paid to the System (Act 160-2013, Article 1.1).
- j. Accumulated Contributions: The sum of all amounts deducted from the compensation of a Member or directly paid to the System, without interest.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
AS OF JUNE 30, 2015

4. Retirement Benefits

a. Retirement because of age

Eligibility: Age 60 with 10 years of Creditable Service (Act 160-2013, Article 3.9).

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 160-2013, Article 4.4). In no event will the benefit determined be less than the Minimum Benefit.

Additional Contributions required: None.

b. Retirement because of age and years of service

Eligibility: Age 47 with 25 years of Creditable Service (Act 160-2013, Article 3.9).

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 160-2013, Article 4.4). 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 retired before December 24, 2013 who have not attained age 55 and 30 years of Creditable Service at retirement must contribute to the Fund 9%

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

of the Average Compensation on a monthly basis for a minimum period of 5 years after retiring because of age and years of service. 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 for members who retired before December 24, 2013. Members who retired on or after December 24, 2013 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 until attainment of age 55. The employer of each of these members shall continue making the corresponding employer contributions while the member is paying the 9% additional contribution until the age 55 requirement is met. (Act 160-2013, Article 4.4)

5. Termination Benefits

a. Lump Sum Withdrawal

Eligibility: A Member is eligible upon termination of service.

Benefit: The benefit equals a refund of Accumulated Contributions, plus compound interest accumulated at 2.0% per annum for a period no longer than 6 months following separation of service. (Act 160-2013, Article 3.4)

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 (Act 160-2013, Article 4.4).

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 160-2013, Article 4.4). In no event will the benefit determined be less than the Minimum Benefit.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

6. 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 Contributions, plus interest accumulated at 2.0% per annum until the date of death; plus, if death occurred on or before July 31, 2014, an amount equal to one year of Compensation in effect at the time of death (Act 160-2013, Article 3.18).
- (ii) While not in active service, the benefit equals a refund of Accumulated Contributions, plus interest accumulated at 2.0% per annum up to separation of service (Act 160-2013, Article 3.17).

b. Post-retirement Death Benefit for members who retired on or before July 31, 2014

Eligibility: Any retiree or disabled member receiving a monthly benefit who retired on or before July 31, 2014.

Benefit: The benefit is as follows:

- (i) Full pension for the month in which the pensioner died plus an additional fifteen-day pay period payable to the member's eligible beneficiaries (Act 160-2013, Article 4.8). In no case shall the benefit be less than \$1,000. The General Fund pays up to \$500. The System pays for the rest. (Act 160-2013, Article 4.8 and Act 272-2004)
- (ii) 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 160-2013, Article 4.8).
- (iii) 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

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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 160-2013, Article 4.8).

- (iv) The benefit, when there is no relation as stated above, is equal to the remaining balance of Accumulated Contributions 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 (Act 160-2013, Article 4.8).

c. Post-retirement Death Benefit for Members who retire August 1, 2014 or later

Eligibility: Any retiree or disabled member receiving a monthly benefit whose retirement occurred August 1, 2014 or later (Act 160-2013, Articles 4.8 and 5.11).

Benefit: If the member elected at the time of retirement to transfer a portion of the annuity to a beneficiary by selecting an actuarially equivalent optional form of payment, the applicable survivor benefit (Act 160-2013, Article 5.11).

For all members, the excess, if any, of the Accumulated Contributions 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 (Act 160-2013, Article 5.11).

7. 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 160-2013, Article 4.5).

Benefit: 1.8% of Average Non-occupational Disability Compensation multiplied by years of Creditable Service (Act 160-2013, Article 4.6). In no event will the benefit determined be less than the Minimum Benefit.

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b. Occupational Disability

Eligibility: All members disabled while in the course and as a consequence of their work (Act 160-2013, Article 4.5).

Benefit: 1.8% of Average Occupational Disability Compensation multiplied by years of Creditable Service (Act 160-2013, Article 4.6). In no event will the benefit determined be less than the Minimum Benefit.

8. Minimum Benefits

a. Past Ad hoc Increases: The legislature, from time to time, increases pensions for certain retirees as described in Act 124-1973 and Act 47-1984. 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 38-2007, Section 3).

9. 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 62-1992. 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 38-2007). 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 38-2007). All COLAs are paid by the General Fund, with the exception of Act 226-1998 (various Acts).

10. Medical Insurance Plan Contribution: A payment of up to \$100 per month to the eligible medical insurance plan selected by the retiree or disabled member provided the member retired prior to August 1, 2014. This benefit is paid from the Supplemental Contributions (see Employer Contribution section). (Act 160-2013, Article 4.9).

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11. Special “Bonus” Benefits:

- a. Christmas Bonus: An annual bonus of \$200 for each retiree and disabled member paid in December provided the member retired prior to August 1, 2014. This benefit is paid from the Supplemental Contributions (see Employer Contribution section). (Act 160-2013, Article 4.9).
- b. Medication Bonus: An annual bonus of \$100 for each retiree, beneficiary, and disabled member to cover health costs paid in July provided the member retired prior to August 1, 2014. Evidence of coverage is not required. The amount is prorated if there are multiple beneficiaries. This benefit is paid from the Supplemental Contributions (see Employer Contribution section). (Act 160-2013, Article 4.9).

12. Member Contributions: Contributions by Members are 9% of Compensation (Act 160-2013, Article 4.3). Before January 27, 2000, member contributions were 7% of Compensation. In addition, members who retired due to age and service who are not age 55 and 30 years of Creditable Service at the time of retirement are required to continue to pay the member contributions as described in Item 4b.

13. 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 9.5% compound per year until the time of service purchase. If the service purchase is a time purchase and not an intergovernmental service transfer, the amount due to employer contributions is accumulated at 9.5% compound per year until the time of service purchase. The accumulation rate was 2% compound per year for purchases prior to December 24, 2013. Any amount not covered by asset transfers from the member’s prior pension fund is payable by the member. (Act 160-2013, Article 3.6)

14. Act 70-2010 Retirement Incentive: During the 2010-2011 fiscal year, Act 70-2010 provided for an early retirement incentive. Additional window periods occurred through December 31, 2012. Active members who had at least 15 years of service, but less than 30 years of service, were able to retire immediately with an enhanced benefit ranging from 37.5% to 50% of salary. This enhanced benefit is paid by the

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General Fund until the member reaches the later of age 55 or the date the member would have completed 30 years of service had the member continued working. The System will have the liability to pay the benefit after this time period. While the General Fund is paying the pension benefit to the member or any surviving beneficiary, the General Fund will also pay a contribution to the System equal to the employer contribution rate (11.50% for the 2013-2014 fiscal year) applied to final salary. The employer contribution rate applied to final salary increases as under Act 160-2013 to an ultimate rate of 20.525% of payroll in 2021-2022 and thereafter. Members who retired under this incentive are not eligible to receive the Medical Insurance Plan Contribution.

Provisions applicable to members hired August 1, 2014 and later

1. Type of Plan

A contributory, hybrid plan. A hybrid plan, such as a cash balance plan, determines the benefit amount based on a formula using contributions and earning credits, has notional individual accounts for members, and provides lifetime annuity benefits.

2. Eligibility for Membership

Members of the Teacher's Retirement System of Puerto Rico include teachers hired by the Department of Education August 1, 2014 and later, licensed teachers working in private schools or other educational organizations who elect to become members August 1, 2014 and later, and employees of the System hired August 1, 2014 or later. (Act 160-2013, Article 3.1)

3. Definitions

- a. Fiscal Year: A Fiscal Year is a 12-month period beginning on July 1 and ending on June 30.
- b. Fund: System Contribution Fund (Act 160-2013, Article 4.1).
- c. General Fund: The General Expenses Budget of the Government of the Commonwealth of Puerto Rico.

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- d. Creditable Service: The years and months of plan participation, during which contributions have been made, beginning on the date of the first original appointment for rendering services. For purposes of calculating Creditable Service, 15 calendar days of a school year month shall be equal to 1 calendar month worked during the school year for teachers; and 21 calendar days of a month shall be equal to 1 calendar month worked for other participants. (Act 160-2013, Article 3.8)
- e. Compensation: The gross cash compensation, excluding bonuses and overtime, upon which contributions by a Member to the Fund are based (Act 160-2013, Article 1.1).
- f. Actuarial Equivalent: Equality in value such that the present value of the amount under any form of payment is essentially the same as the present value of the amount under the normal form of annuity payment for single participants. Actuarially Equivalent factors are determined based on annuity and mortality tables adopted by the Board of Trustees based on the system's experience and in accordance with the recommendations of the actuary.
- g. Defined Contribution Account: The notional individual account established for each new member as of August 1, 2014 and later. Each member has a nonforfeitable right to their contributions to the Defined Contribution Account. (Act 160-2013, Article 1.1)
- h. Credits to Defined Contribution Account: The credits to the Defined Contribution Account include (1) contributions by the member and (2), at the end of each semester, the investment yield for each semester of the fiscal year as determined by the Board. The investment yield determined by the Board shall never be less than 80% of the investment portfolio yield of the System during each semester of each fiscal year minus management fees such as, but not limited to, fees payable to portfolio managers, custody, and investment advice. (Act 160-2013, Article 5.8)

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

4. Retirement Benefits

- a. Eligibility: Age 62 with 5 or more years of Creditable Service and a balance in the Defined Contribution Account balance of \$10,000 or more (Act 160-2013, Article 3.9).
- b. Benefit: An annuity payable for the lifetime of the member equal to the annuitized value of the balance in the Defined Contribution Account at the time of retirement (Act 160-2013, Article 5.10).

5. Termination Benefits

a. Lump Sum Withdrawal

Eligibility: A Member is eligible upon termination of service prior to 5 years of service or if the balance in the Defined Contribution Account is less than \$10,000. (Act 160-2013, Article 3.4)

Benefit: The benefit equals a lump sum payment of the balance in the Defined Contribution Account as of the date of the permanent separation from service. (Act 160-2013, Article 3.4)

b. Deferred Retirement

Eligibility: A Member is eligible upon termination of service prior to age 62, completion of 5 or more years of Creditable Service, and a balance in the Defined Contribution Account of \$10,000 or more (Act 160-2013, Article 3.9).

Benefit: An annuity payable for the lifetime of the member commencing at age 62 equal to the annuitized value of the balance in the Defined Contribution Account at the time of retirement (Act 160-2013, Article 5.10).

6. Death Benefits

a. Pre-retirement Death Benefit

Eligibility: Any current non-retired member is eligible (Act 160-2013, Article 5.11).

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

Benefit: A refund of the Defined Contribution Account (Act 160-2013, Article 5.11).

b. Post-retirement Death Benefit

Eligibility: Any retiree or disabled member (Act 160-2013, Article 5.11).

Benefit: If the member elected at the time of retirement to transfer a portion of the annuity to a beneficiary by selecting an actuarially equivalent optional form of payment, the applicable survivor benefit (Act 160-2013, Article 5.11).

For all members, the excess, if any, of the Defined Contribution Account at the time of retirement over the total monthly pension payments paid to the member and any beneficiary per the terms of the optional form of payment shall be payable to a beneficiary or to the member's estate (Act 160-2013, Article 5.11).

7. Disability Benefits

a. Eligibility: All members are eligible upon 5 years of Creditable Service and the occurrence of disability (Act 160-2013, Article 5.11).

b. Benefit: An annuity payable for the lifetime of the member equal to the annuitized value of the balance in the Defined Contribution Account at the time of disability (Act 160-2013, Article 5.11).

8. Member Contributions: Contributions by Members are 10.00% of Compensation from August 1, 2014 to June 30, 2017, 13.12% of Compensation from July 1, 2017 to June 30, 2020, and 14.02% of Compensation effective July 1, 2020 (Act 160-2013, Article 5.5).

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
AS OF JUNE 30, 2015

Employer Contributions

1. Payroll-based Employer Contributions: Contributions by the Commonwealth of Puerto Rico and private school employers, as applicable, are 9.5% of Compensation for the fiscal year beginning July 1, 2011. For the next four fiscal years effective July 1, employer contributions will increase annually by 1%. For the next five fiscal years, employer contributions will increase annually by 1.25%, reaching an employer contribution rate of 19.75% effective July 1, 2020. Effective July 1, 2021 and later fiscal years, the employer contribution rate will be 20.525%. (Act 160-2013, Article 4.3) Prior to July 1, 2011, employer contributions were 8.5% of Compensation. The following table shows the employer contribution rate beginning with the 2011-2012 fiscal year.

Fiscal Year	Employer Contribution Rate
2011-2012	9.500%
2012-2013	10.500
2013-2014	11.500
2014-2015	12.500
2015-2016	13.500
2016-2017	14.750
2017-2018	16.000
2018-2019	17.250
2019-2020	18.500
2020-2021	19.750
2021-2022 & later	20.525

For members who retire due to age and service prior to attaining age 55 and 30 years of Creditable Service, continued member contributions are required for the time period described in Item 4b (if the member is hired on or before July 31, 2014). During this time period, the employer also makes contributions based on the rates described in the paragraph above as applied to the member's final salary. (Act 160-2013, Article 4.4)

2. Supplemental Contributions: Effective July 1, 2014, the System will receive a supplemental contribution of \$1,675 each fiscal year for each pensioner (including beneficiaries receiving survivor benefits). This supplemental contribution will be paid by the General Fund. (Act 160-2013, Article 4.9)

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

3. Teacher's Justice Uniform Contribution: The System will receive the Teachers Justice Uniform Contribution of \$30 million for the 2016-2017 and 2017-2018 fiscal years and \$60 million for each fiscal year from 2018-2019 to 2041-2042. The Teacher's Justice Uniform Contribution will be paid by the General Fund. (Act 160-2013, Articles 1.1 and 7.1)
4. Annual Additional Contribution: During each fiscal year from 2018-2019 through 2041-2042, the System will receive an Annual Additional Contribution certified by the external actuary of the System as necessary to avoid having the projected gross assets of the System, during any subsequent fiscal year, fall below \$300 million. The Annual Additional Contribution will be paid by the General Fund. (Act 160-2013, Articles 1.1 and 7.1)

Changes in Plan Provisions since Prior Valuation

None.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2015

Investment Return: 6.65% per annum, net of investment expenses. Based on the System’s investment policy, including target asset allocation and expectations regarding the loan portfolio, and Milliman’s capital market assumptions as of June 30, 2015.

Municipal Bond Rate: 3.80% per annum (Bond Buyer General Obligation 20-Bond Municipal Bond Index)

GASB 67 discount rate: 3.82% per annum

GASB 45 discount rate: 3.10% per annum. Based on the Commonwealth’s asset allocation for the general assets that are used to pay this benefit and Milliman’s capital market assumptions as of June 30, 2015.

Compensation Increases: Compensation increases vary by years of creditable service as shown below. The rates below include the assumption for general wage inflation of 2.5%. However, no compensation increases are assumed from July 1, 2013 until July 1, 2017 as a result of Act 66-2014. Based on a 2004-2007 experience study, with updated expectations regarding general wage inflation and modified for the impact of Act 66-2014.

Years of Creditable Service	Increase in Annual Rate over Prior Year	Years of Creditable Service	Increase in Annual Rate over Prior Year
1-5	4.70%	15	3.20
6	4.50	16	3.10
7	4.30	17-19	3.00
8	4.10	20	2.90
9	3.90	21	2.80
10	3.80	22	2.75
11	3.70	23	2.70
12	3.60	24-27	2.65
13	3.50	28	2.60
14	3.30	29 & Over	2.50

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2015

Defined Contribution Account: Member contributions to the Defined Contribution Account are assumed to be 14.02% of Compensation (the ultimate rate). Defined Contribution Accounts are assumed to grow using a 5.32% annual investment return (80% of the net investment return assumption).

Annuitization of Defined Contribution Account: Single life annuity factors using an interest rate of 4% and the RP-2000 Healthy Annuitant Mortality Table for ages 50 and over and the RP-2000 Employee Mortality Table for ages under 50, projected to 2025 using Scale AA and blended 50% male / 50% female, are used to convert the Defined Contribution Account to a lifetime annuity. Based on the current factors adopted by the System's Board.

Termination: Withdrawal rates vary by gender and years of creditable service. The withdrawal rates are shown below. Based on a 2004-2007 experience study as well as the actuary's judgment and continual review of experience.

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

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2015

Retirement for members hired on or before July 31, 2014: 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). Based on a 2004-2007 experience study as well as the actuary’s judgment and continual review of experience.

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 as of the census data collection date 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. Future terminated vested participants are assumed to retire at age 60.

Retirement for members hired August 1, 2014 or later: Rates of retirement vary by age. The retirement rates are shown below. Based on actuary’s judgment.

Age	Annual Rate
62	25%
63-64	10
65-66	15
67	20
68-69	25
70-79	30
80	100

Future terminated vested participants are assumed to retire at age 62.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2015

Service Purchases for members hired on or before July 31, 2014: 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. Based on a 2004-2007 experience study as well as the actuary’s judgment and continual review of experience, including the impact of Act 160-2013.

Age	Annual Rate
50-54	0.05%
55-59	0.10
60-64	0.20
65-79	0.80

In addition, 5% 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. Based on actuary’s judgment and continual review of experience, including the impact of Act 160-2013.

Disability: Unisex rates which vary by age and years of creditable service are assumed. Illustrative rates are shown below. Rates of disability cease to apply upon attainment of retirement eligibility. Based on a 2004-2007 experience study as well as the actuary’s judgment and continual review of experience.

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	0.163	0.251
65	0.157	0.242
70	0.144	0.222

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2015

Pre-retirement Mortality: RP-2014 Employee Mortality Rates for males and females adjusted to reflect Mortality Improvement Scale MP-2015 from the 2006 base year, and projected forward using MP-2015 on a generational basis. As a generational table, it reflects mortality improvements both before and after the measurement date. Based on actuary's judgment.

Post-retirement Healthy Mortality: Rates which vary by gender are assumed for healthy retirees and beneficiaries based on a study of plan's experience from 2007 to 2012 and updated expectations regarding future mortality improvements. The 2010 base rates are equal to 92% of the rates from the UP-1994 Mortality Table for Males and 87% of the rates from the UP-1994 Mortality Table for Females. These base rates are projected using Mortality Improvement Scale MP-2015 on a generational basis. As a generational table, it reflects mortality improvements both before and after the measurement date.

Post-retirement Disabled Mortality: Rates which vary by gender are assumed for disabled retirees based on a study of plan's experience from 2007 to 2012 and updated expectations regarding future mortality improvements. The 2010 base rates are equal to the rates in the UP-1994 Mortality Table for males and females. These base rates are projected using Mortality Improvement Scale MP-2015 on a generational basis. As a generational table, it reflects mortality improvements both before and after the measurement date.

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

Form of Payment: Future retired members who retire on or before July 31, 2014 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. Future retired members who retire after July 31, 2014 are assumed to receive a modified cash refund (for members hired on or before July 31, 2014 approximated by a single life annuity with 3 years certain).

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.

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SECTION VIII – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2015

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 5 years of service (10 years of service if hired on or before July 31, 2014) are assumed to elect to receive a deferred pension benefit in lieu of a refund of contributions.

Medical Insurance Plan Contribution: 85% of eligible retirees and disableds 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 2015, this amount is \$19,243,000.

Census Data Collection Date: July 1, 2014. However, due to the large number of retirements during July 2014, census data for new retired members during July 2014 is reflected. When information is provided by participant category in this report, the category is determined as of the census data collection date.

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, 2014 less the provided years of creditable service. In addition, creditable service was limited such that no active member was hired prior to age 15.

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

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

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

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SECTION VIII – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2015

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 minimis.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION VIII – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2015

Changes in actuarial assumptions since the prior valuation: Due to the reduction in the number of service purchases since Act 160-2013, the service purchase assumptions were reduced by 90%.

The projected mortality improvement scale was updated from Scale AA to Scale MP-2015, which was published by the Society of Actuaries in October 2015. Also, as Scale MP-2015 is a two-dimensional mortality improvement scale, the base mortality rates for the post-retirement mortality assumption were set to the 2010 rates – the central year of the 2007 to 2012 PRTRS experience study upon which the rates were based. In addition, the pre-retirement mortality rates were also updated to reflect updated mortality tables published by the Society of Actuaries.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IX – SUMMARY OF ACTUARIAL METHODS AS OF JUNE 30, 2015

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 (level percentage of payroll). 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.

Asset Valuation Method

The Market Value of Assets.

Liability Determination

The results as of June 30, 2015 are based on projecting the System obligations determined as of the census data collection date of July 1, 2014 for one year using roll-forward methods, assuming no liability gains or losses.

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PUERTO RICO TEACHERS RETIREMENT SYSTEM

SECTION IX – SUMMARY OF ACTUARIAL METHODS AS OF JUNE 30, 2015

Changes in actuarial methods since the prior valuation

None.

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