

The Public School Employees' Retirement System of Pennsylvania

Information Required Under
Governmental Accounting Standards Board
Statement No. 67 as of June 30, 2014



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January 13, 2015

The Retirement Board
Public School Employees'
Retirement System of Pennsylvania
P.O. Box 125
Harrisburg, Pennsylvania 17108

Members of the Board:

This valuation provides information concerning the Public School Employees' Retirement System of Pennsylvania (PSERS) in accordance with the Governmental Accounting Standards Board (GASB) Statement No. 67. This Statement is an amendment of Statements No. 25, Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans, and No. 50, Pension Disclosures, effective for the fiscal year ending June 30, 2014.

We certify that the information contained in this Actuarial Report has been prepared in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information fairly presents the actuarial position of PSERS in accordance with the requirements of GASB Statement No. 67 as of June 30, 2014.

The Board of Trustees and staff of PSERS may use this report for the review of the operation of the System and as a source of information for the Commonwealth financial statements. The report may also be used in the preparation of the System's audited financial statements.

Use of this report for any other purpose or by anyone other than the Board of Trustees or the staff of PSERS may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck Consultants' prior written consent.

Future actuarial measurements may differ significantly from current measurements due to System experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in System provisions or applicable law. An analysis of the potential range of such future differences is beyond the scope of this valuation.

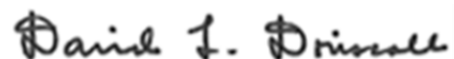
In preparing the actuarial results, we have relied upon information provided by the staff of PSERS regarding System provisions, System participants, System assets, contribution rates and other matters used in the actuarial valuation. Although we did not audit the data, we reviewed the data for reasonableness and consistency with the prior year's information. The accuracy of the results presented herein is dependent on the accuracy of the data.

As required under Section 8502(j) of the Retirement Code, experience studies are performed once in every five year period. This valuation was prepared on the basis of the demographic and economic assumptions that were selected on the basis of the July 1, 2005 to June 30, 2010 Experience Review and adopted by the Board of Trustees at their March 11, 2011 meeting, which include a 7.50% per annum rate of investment return. As mandated by the Retirement Code, these assumptions will remain in effect for valuation purposes until such time the Board of Trustees adopts revised assumptions.

In our opinion, the actuarial assumptions used are appropriate for purposes of the valuation and are reasonably related to the experience of the System and to reasonable long-term expectations. The mortality improvement assumption was selected in accordance with Actuarial Standard of Practice No. 35.

This report was prepared under our supervision. We are Members of the American Academy of Actuaries. We meet the Academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice and we are available to answer questions about it.

Buck Consultants, LLC

A handwritten signature in black ink that reads "David L. Driscoll".

David L. Driscoll, FSA, EA, MAAA, FCA
Principal, Consulting Actuary

A handwritten signature in black ink that reads "Edward Quinn".

Edward Quinn, EA, MAAA, FCA
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A handwritten signature in black ink that reads "Salvador Nakar".

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Section I – GASB 67 Information

Notes to the Financial Statements for the Year Ended June 30, 2014

Summary of Significant Accounting Policies

Method used to value investments. Investments are reported at fair value.

System Description

System administration. The administrative staff of the Public School Employees' Retirement System of Pennsylvania (PSERS or System) administers the System. The System is a governmental cost-sharing multi-employer defined benefit pension plan that provides retirement benefits to public school employees of the Commonwealth of Pennsylvania (Commonwealth). The members eligible to participate in the System include all full-time public school employees, part-time hourly public school employees who render at least 500 hours of service in the school year, and part-time per diem public school employees who render at least 80 days of service in the school year in any of the reporting entities in Pennsylvania.

The control and management of the System, including the investment of its assets, is vested in the Board of Trustees (Board). The Board consists of 15 members: the Secretary of Education, ex officio; the State Treasurer, ex officio; two Senators; two members of the House of Representatives; the executive secretary of the Pennsylvania School Boards Association, ex officio; two Governor appointees, at least one of whom shall not be a school employee or an officer or employee of the State of Pennsylvania; three who are elected by the active professional members of the System from among their number; one who is elected by annuitants from among their number; one who is elected by the active nonprofessional members of the System from among their number; and one who is elected by members of Pennsylvania public school boards from among their number. The chairman of the Board is elected by the Board members. Each ex officio member of the Board and each legislative member of the Board may appoint a duly authorized designee to act in their stead.

The Commonwealth's General Assembly has the authority to amend the benefit terms of the System by passing bills in the Senate and House of Representatives and sending them to the Governor for approval.

The long-term expected rate of return on pension System investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension System investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic rates of return for each major asset class included in the System's target asset allocation as of June 30, 2014 are summarized in Appendix A, as provided by the System's investment consultant - Hewitt EnnisKnupp, an AON Company.

Discount rate. The discount rate used to measure the total pension liability was the funding valuation rate of 7.50%. The projection of cash flows used to determine the discount rate assumed that Commonwealth contributions will continue to follow the current funding policy as prescribed by Act 120 of 2010. Based on those assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current System members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability, in accordance with the method prescribed by GASB Statement No. 67. We believe this assumption is reasonable for the purposes of the measurements required by the Statement. In the event of benefit payments not covered by the Plan's fiduciary net position, a municipal bond rate of 3.66% would be used to discount the benefit payments not covered by the Plan's fiduciary net position. The 3.66% rate equals the S&P Municipal Bond 20-Year High Grade Rate Index at June 30, 2014.

The discount rate is the single rate that reflects (1) the long-term expected rate of return on System investments that are expected to be used to finance the payment of benefits, to the extent that the System's fiduciary net position is projected to be sufficient to make projected benefit payments and System assets are expected to be invested using a strategy to achieve that return, and (2) a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another scale), to the extent that the conditions for use of the long-term expected rate of return are not met.

The projections of the Fiduciary Net Plan Position are based on contributions to the System in accordance with the provisions of Act 120 of 2010. Should contributions to the System be reduced from those based on the provisions of Act 120 of 2010, the results would reflect the new contribution policy and may result in the Fiduciary Net Plan Position not being sufficient to cover the System's benefit payments at some future date and thus lowering the discount rate used to determine the System's Total Pension Liability.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.50%, as well as what the Commonwealth's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50%) or 1-percentage-point higher (8.50%) than the current rate:

	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Net Pension Liability (Amounts x \$1,000)	\$ 49,371,459	\$ 39,580,717	\$ 31,222,108

Schedules of Required Supplementary Information

Schedule of Changes in The Commonwealth's Net Pension Liability and Related Ratios

(Amounts x \$1,000)

2014

Total pension liability

Service cost	\$	2,139,037
Interest		6,523,484
Changes of benefit terms		0
Differences between expected and actual experience		0
Changes of assumptions		0
Benefit payments		<u>(6,053,505)</u>
Net change in total pension liability	\$	2,609,016
Total pension liability-beginning	\$	89,951,816
Total pension liability-ending (a)	\$	92,560,832

System fiduciary net pension

Contributions-employer	\$	1,992,084
Contributions-employee		966,926
Net investment income		7,097,761
Benefit payments, including refunds of employee contributions		(6,053,505)
Administrative expense		(38,712)
Other		<u>0</u>
Net change in System fiduciary net position	\$	3,964,554
System fiduciary net position-beginning	\$	49,015,561
System fiduciary net position-ending (b)	\$	<u>52,980,115</u>
Commonwealth's net pension liability-ending (a)-(b)	\$	39,580,717

System fiduciary net position as a percentage of the total pension liability 57.24%

Covered-employee payroll as of the July 1, 2013 actuarial valuation \$ 12,577,105
Net pension liability as a percentage of covered-employee payroll 314.70%

Notes to Schedule:

Benefit changes. None.

Changes of assumptions. None.

Schedule of Commonwealth Contributions

(Amounts x \$1,000)

	<u>2014</u>
Actuarially determined contribution	\$ 2,965,715
Contributions related to the actuarially determined contribution	<u>1,992,084</u>
Contribution deficiency (excess)	\$ 973,631

Notes to Schedule

Valuation date: Actuarially determined contributions are calculated as of the June 30 preceding the fiscal year in which contributions are made. That is, the contribution calculated as of the June 30, 2013 actuarial valuation will be made during the fiscal year ended June 30, 2015.

The methods and assumptions used to determine the actuarially determined contributions to the System are set forth in Section II.

Schedule of Investment Returns

	<u>2014</u>
Annual money-weighted rate of return, net of investment expenses*	14.98%

* Provided by the System's investment consultant, Hewitt EnnisKnupp, an AON Company - Appendix A.

Section II – Actuarial Assumptions and Methods

Interest Rate: 7.50% per annum, compounded annually (adopted as of June 30, 2011). The components are 3.00% for inflation and 4.50% for the real rate of return. Actuarial equivalent benefits are determined based on 4% (since 1960).

Separation from Service: Illustrative rates of assumed separation from service are shown in the following table (adopted as of June 30, 2011).

Age	Annual Rate of:						
	Non-Vested Withdrawal	Vested Withdrawal*		Death	Disability	Early Retirement**	Superannuation Retirement
		Less Than 10 Years of Service	10 or More Years of Service				
MALES							
25	12.50%	5.50%	2.00%	.037%	.024%		
30	10.50	3.20	2.00	.038	.024		
35	11.00	3.00	1.50	.056	.100		
40	13.00	3.50	1.25	.090	.180		
45	13.00	3.50	1.25	.121	.180		25.00%
50	13.00	3.50	1.70	.173	.280		25.00
55	11.00	3.50	3.00	.245	.430	15.00%	30.00
60	10.50	3.50	4.50	.363	.580	12.00	28.00
65				.592	.100		20.00
69				.810	.100		18.00
FEMALES							
25	13.00%	8.50%	5.00%	.018%	.030%		
30	13.00	6.50	4.00	.019	.040		
35	13.00	5.50	3.00	.022	.060		
40	10.90	4.50	1.50	.035	.100		
45	10.90	4.00	1.50	.055	.150		30.00%
50	10.90	3.75	1.75	.085	.200		30.00
55	10.90	3.75	3.00	.133	.380	15.00%	30.00
60	10.90	4.50	5.50	.197	.380	15.00	30.00
65				.301	.130		25.00
69				.428	.130		20.00

*Vested Withdrawal – At least 5 years of service for Class T-C and Class T-D members and 10 years of service for Class T-E and Class T-F members but not eligible for Early or Superannuation retirement.

** Early Retirement – Age 55 with 25 years of service, but not eligible for Superannuation retirement.

Death after Retirement: The RP-2000 Combined Healthy Annuitant Tables (Male and Female) with age set back 3 years for both genders for healthy annuitants and for dependent beneficiaries. The RP-2000 Combined Disabled Tables (Male and Female) with age set back 7 years for males and set back 3 years for females for disabled annuitants. (A unisex table based on the RP-2000 Combined Healthy Annuitant Tables (Male and Female) with age set back 3 years for both genders assuming the population consists of 25% males and 75% females is used to determine actuarial equivalent benefits.) No specific additional provision has been made to reflect possible future improvements in mortality.

Salary Increase: Effective average of 5.50% per annum, compounded annually (adopted as of June 30, 2011). The components are 3.00% for inflation, 1% for real wage growth and 1.5% for merit or seniority increases. Representative values are as follows:

Age	Annual Rate of Salary Increase
20	10.75%
30	8.25
40	6.25
50	4.25
55	3.75
60	3.75
65	3.75
70	3.75

Payroll Growth: 3.50% per annum.

MISCELLANEOUS

Option 4 Elections: 100% of Class T-C and Class T-D members are assumed to elect a refund of contributions and a reduced annuity.

Withdrawal Annuity: 90% of members are assumed to commence payment immediately and 10% are assumed to defer payment to superannuation age.

METHODS

Asset Valuation Method for Pension Funding: A ten-year moving market average (five-year moving market average prior to June 30, 2010) value of assets that recognizes the 7.50% (8.00% prior to June 30, 2011, 8.25% prior to June 30, 2009, and 8.50% prior to June 30, 2008) actuarial expected investment return immediately and spreads the difference between the actual return on the market value of assets and the expected return on the actuarial value of assets over a period of ten years is prescribed for use in funding calculations under Act 120 of 2010. The averaging period is being phased-in from fiscal year 2006.

Actuarial Cost Method for Pension Funding: Entry Age Normal Cost Method (modified slightly as of June 30, 2005 to use a pay-weighted average normal contribution rate). The results of each June 30 valuation normally determine the employer contribution rate for the second succeeding fiscal year. Act 120 revised the funding method effective with the June 30, 2010 valuation. Act 120 mandated that the outstanding balance of the unfunded accrued liability as of June 30, 2010, including changes in the unfunded accrued liability due to the funding reforms of Act 120, be amortized over a 24-year period, as a level percent of pay, beginning July 1, 2011. Future valuation gains and losses, and changes in the unfunded accrued liability resulting from changes in actuarial assumptions and methods, are amortized over a 24-year period, as a level percent of pay. Future increases in the unfunded accrued liability due to legislation will be amortized over a 10-year period, as a level percent of pay. Act 120 also modified the employer pension contribution requirements by imposing collars on the rate at which employer contributions may rise from year to year. For the fiscal years ending June 30, 2012, June 30, 2013, and on or after June 30, 2014 the pension contribution rate can be no more than 3%, 3.5% and 4.5%, respectively, of total compensation of all active members, greater than the prior year's final contribution rate. Beginning with the fiscal year in which the actuarially required contribution rate is less than the collared rate, the final contribution rate is the actuarially determined contribution rate, provided that the final contribution rate is not less than the employer normal contribution rate.

Section III – Summary of System Provisions

Pennsylvania Statutes, Title 24, PART IV. RETIREMENT FOR SCHOOL EMPLOYEES

MEMBERSHIP

For valuation purposes, all employees are considered to be full coverage. All employees who become members on and after January 1, 1966 are members of the dual coverage group. Dual coverage members contribute to both PSERS and to Social Security.

BENEFITS

Superannuation Annuity

Eligibility	Age 62, or age 60 with 30 years of service, or 35 years of service regardless of age. For Class T-E and Class T-F members, age 65 with a minimum of three years of service credit, or any combination of age and service that totals 92 with at least 35 years of credited service
Amount	<p>2.5% of final average salary times years of school service and intervening military service. 2% of final average salary for non-school service, for members who did not elect Class T-D coverage, and for Class T-E members. Minimum of \$100 per year of service. "Final average salary" means the highest average annual salary for any 3 years of service.</p> <p>Annual salary is subject to a limit of \$200,000, as adjusted under Section 401(a)(17) of the Internal Revenue Code. As of June 30, 2013, the adjusted limit is \$255,000.</p> <p>For members who elect coverage under Class T-D, the maximum benefit is equal to the limit established by Section 415 of the Internal Revenue Code.</p> <p>For Class T-E and Class T-F members, the maximum benefit is equal to the lesser of the limit established by Section 415 of the Internal Revenue Code or 100% of final average salary.</p>

Early Retirement Annuity

Eligibility	Age 55 with 25 years of service.
Amount	<p>Accrued benefit as of date of retirement, reduced 1/4% for each month by which commencement of payments precedes Superannuation Age.</p> <p>For members who elect coverage under Class T-D, the maximum benefit is equal to the limit established by Section 415 of the Internal Revenue Code.</p> <p>For Class T-E and Class T-F members, the maximum benefit is equal to the lesser of the limit established by Section 415 of the Internal Revenue Code or 100% of final average salary.</p>

Withdrawal Annuity

Eligibility	5 years of service. For Class T-E and Class T-F members, ten years of service.
Amount	Accrued benefit deferred to superannuation retirement age or an actuarially reduced benefit payable immediately. Actuarially equivalent benefits are based on 4% interest and a unisex table based on the RP-2000 Combined Healthy Annuitant Tables (Male and Female) with age set back 3 years for both genders assuming the population consists of 25% males and 75% females.

Disability Annuity

Eligibility	5 years of service.
Amount	The standard single life annuity if the total number of years of credited service is greater than 16.667, otherwise the standard single life annuity multiplied by the lesser of the following ratios: (Y^*/Y) or $(16.667/Y)$ where Y is the number of years of credited service and Y* is the total years of credited service if the member were to continue as a school employee until superannuation retirement age (or at current age, if later). Minimum of \$100 per year of service.

Return of Contributions

Eligibility	Death or separation from service and member does not qualify for other benefits.
Amount	Refund of accumulated deductions includes interest (less annuity payments received prior to death in the case of a retired member).

Death Benefit

Eligibility	Death of an active member or vestee who was eligible to receive an annuity.
Amount	The present value of the annuity that would have been effective if the member retired on the day before death. Option 1 assumed payable if no other option elected.

Normal and Optional Forms of Benefits

Normal Form:	Life annuity with a guaranteed payment equal to member contributions with interest.
Option 1:	Reduced benefit with refund of balance of present value of annuity at retirement over payments received. If balance is less than \$5,000, benefit is paid in lump sum; otherwise, beneficiary may elect annuity and/or lump sum.
Option 2:	Joint and 100% survivorship annuity.
Option 3:	Joint and 50% survivorship annuity.

Option 4:

Benefit of equivalent actuarial value, including lump sum payment of member contributions. Class T-E and Class T-F members cannot elect to receive a lump sum payment of member contributions.

CONTRIBUTIONS

By Members

Members who elected coverage under Class T-D and who were most recently enrolled prior to July 22, 1983 contribute at a rate of 6½% of compensation, while members who elected coverage under Class T-D and who were most recently enrolled on or after July 22, 1983 contribute at a rate of 7½% of compensation. Members who did not elect coverage under Class T-D and who were most recently enrolled prior to July 22, 1983 contribute at a rate of 5¼% of compensation, while members who did not elect coverage under Class T-D and who were most recently enrolled on or after July 22, 1983 and prior to July 1, 2001 contribute at a rate of 6¼% of compensation. Anyone who enrolls or re-enrolls on or after July 1, 2001 automatically has coverage under class T-D for subsequent school service and subsequent intervening military service, and must contribute at a rate of 7½% of compensation.

The base contribution rate for Class T-E members is 7½% of compensation. The base contribution rate for Class T-F members is 10.3% of compensation. Class T-E and Class T-F members are subject to a “shared-risk” employee contribution rate. Members benefit when investments of the fund are doing well and share some of the risk when investments underperform. The member contribution rate will stay within the specified range allotted for Class T-E or Class T-F members, but could increase or decrease every three years starting July 1, 2015 depending on investment performance. The member contribution rate can never go below the base rate of 7.5% for Class T-E members and 10.3% for Class T-F members, nor above 9.5% for Class T-E members and 12.3% for class T-F members. If the investment rate of return (less investment fees) is equal to or exceeds the assumed rate of return based on the prior ten-year period, the member contribution rate will decrease by .5%. Likewise, the member contribution rate will increase by .5% if the investment rate of return (less investment fees) during the ten-year period is 1.0% or more below the assumed rate of return. If the Retirement System is fully funded at the time of the comparison, the member contribution rate reverts back to the base rate for the Class. There shall not be an increase in the member contribution rate if there has not been an equivalent increase in the employer contribution rate over the previous three-year period. Until a full ten-year look back period is available, the investment return measurement period will begin on July 1, 2011.

By Commonwealth and
School Districts

Balance of required contribution determined as normal contribution, accrued liability contribution, supplemental annuity contribution, experience adjustment factor and premium assistance contribution, is funded by the Commonwealth and the School District.

**Appendix A – Financial Information Provided by Hewitt EnnisKnupp,
an AON Company**



Pennsylvania School Employees' Retirement System

**GASB 67 Reporting
September, 2014**

PSERS Total Fund FY 2014 Money Weighted Return

- **PSERS Total Fund Fiscal Year 2014 Money-Weighted Return (IRR)* is 14.98%.**
- Notes on inputs and methodology
 - Market value of PSERS Total Fund at the beginning of fiscal year 2014 (July 1) is \$49,016.6 million and market value of PSERS Total Fund at the end of fiscal year (ending June 30) is \$52,570.7 million.
 - *Market value and cash flows within the illiquid investments (private real estate and private markets) are reflected on a quarter lag*
 - External net cash flows (inflows netted by outflows) are determined on a daily basis as they have occurred each month from July 1, 2013 to June 30, 2014

**Please note PSERS Total Fund Fiscal Year 2014 Time -Weighted Return (TWR) is 14.91% .*

PSERS Expected Risk/Return - 30 Year Capital Market Assumptions

Asset Class	PSERS – Long -Term Asset Allocation*	Expected Real Return	Expected Nominal Return	Expected Volatility
Public Markets Global Equity	19%	5.0%	7.4%	20.0%
Private Markets (Equity)	21%	6.5%	9.0%	26.5%
Private Real Estate	13%	4.7%	7.1%	14.5%
Global Fixed Income	8%	2.0%	4.4%	6.0%
US Long Treasuries	3%	1.4%	3.7%	11.5%
TIPS	12%	1.2%	3.5%	4.5%
High Yield Bonds	6%	1.7%	4.0%	15.0%
Cash	3%	0.9%	3.2%	2.0%
Absolute Return (Hedge Funds)	10%	4.8%	7.2%	8.5%
Risk Parity	5%	3.9%	6.3%	10.4%
MLPs (Infrastructure)	3%	5.3%	7.7%	16.5%
Commodities	6%	3.3%	5.7%	19.0%
Financing (LIBOR)	-9%	1.1%	3.4%	2.0%
PSERS Total Fund	100%	5.1%	7.5%	11.7%
30 Year Expected Inflation	2.30%			

Note: All Expected Returns are geometric (compounded); $Nominal\ Return = (1 + Real\ Return) \times (1 + Inflation) - 1$
Please see next pages for detailed explanation of Aon Hewitt US Capital Market Assumptions (30 Years)
*Per Exhibit B in Investment Policy Statement effective October 1, 2013