

**Pennsylvania  
Public School Employees' Retirement System**

(A Component Unit of the Commonwealth of Pennsylvania)

5 North 5th Street  
Harrisburg, Pennsylvania 17101-1905

**Fiscal Year 2017-18 Budget Report  
House Appropriations Committee  
February 22, 2017**

**Melva S. Vogler**  
*Chairman*  
*Board of Trustees*

**Glen R. Grell**  
*Executive Director*

*Report prepared by the Public School Employees' Retirement System  
Office of Financial Management and Investment Office staff*

**FY 2017-18 Budget Hearing Materials  
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# SECTION 1 - PSERS OVERVIEW

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### Overview

Established on July 18, 1917, with operations commencing in 1919, the Pennsylvania Public School Employees' Retirement System (PSERS, System, or Fund) provides retirement benefits to public school employees of the Commonwealth of Pennsylvania.

As of June 30, 2016, the System had approximately 257,000 active members. The annuitant membership was comprised of approximately 225,000 retirees and beneficiaries who received average monthly pension benefit payments of over \$476 million including healthcare premium assistance. The average yearly pension benefit paid to annuitants was \$25,203. PSERS had 781 participating employers on June 30, 2016.

As reported in the latest *Pension and Investments* survey, published February 6, 2017, PSERS is the 32nd largest plan among United States corporate and public pension plans, and the 20th largest state-sponsored defined benefit public pension fund in the nation. PSERS' preliminary total plan net assets as of December 31, 2016 were approximately \$51.5 billion. PSERS' preliminary investment rate of return for the calendar year ended December 31, 2016 is 10.75%, net of fees.

During fiscal year 2016, PSERS' pension disbursements to retirees totaled \$6.3 billion. Of this amount 90%, or \$5.7 billion, was distributed to Pennsylvania residents representing PSERS' significant impact on the Commonwealth's economy.

PSERS also administers two postemployment healthcare programs, the Premium Assistance Program and the Health Options Program (HOP) for its annuitants.



### Mission Statement

**The Board of Trustees and the employees of the Public School Employees' Retirement System serve the members and stakeholders of the System by:**

- Providing timely and accurate payment of benefits,
- Maintaining a financially sound System,
- Prudently investing the assets of the System,
- Clearly communicating members' and employers' rights and responsibilities, and
- Effectively managing the resources of the System.

# **PSERS Board of Trustees**

**as of February 1, 2017**

**Melva S. Vogler, Chairman**

**Deborah J. Beck**

**James R. Biery**

**Honorable Stephen Bloom**

*House of Representatives*

**Honorable Patrick M. Browne**

*Senate of Pennsylvania*

**Jason M. Davis**

**Virginia N. Lastner**

**Susan C. Lemmo**

**Nathan G. Mains**

**Honorable Joseph F. Markosek**

*House of Representatives*

**Pedro A. Rivera**

*Secretary of Education*

**Christopher SantaMaria**

**Ambassador Martin J. Silverstein**

**Honorable Joseph M. Torsella**

*Treasurer of Pennsylvania*

**Appointment Pending**

*Senate of Pennsylvania*



# Organizational Structure of the Public School Employees' Retirement System

### Executive Office

This office is responsible for the overall management of the Public School Employees' Retirement System (PSERS) to achieve the primary objectives of the Fund as established by the Board of Trustees (Board). Reporting directly to the Executive Director are the Deputy Executive Director, Assistant Executive Director, Chief Investment Officer, Chief Financial Officer, Internal Auditor, Press Secretary, Board Liaison, Legislative Liaison, and Executive Secretary. The Executive Director serves as chief executive officer responsible for the establishment, installation, and maintenance of modern management techniques to provide an efficient control of funds for and services to the active members and annuitants of the System.

The Executive Office monitors the operation of the investment portfolio and evaluates portfolio performance for consideration by the Board, certifies expenditures of the Fund and measures performance of professional individuals or firms with whom the Board contracts for specialized services. The Executive Office also apprises the Board of any development that will affect the System and its operation.

### Investment Office

This office is responsible for all investment activities of the System. In compliance with the investment policies established by the Board, PSERS' investment assets are allocated to numerous outside professional investment advisors and internal investment professionals.

### Chief Counsel's Office

This office provides legal services through a team of professional personnel under the Governor's Office of General Counsel. The legal staff is responsible for representing the System in all administrative hearings and other litigation matters and providing counsel in a wide variety of matters including the interpretation of the Retirement Code, form and legality of all System contracts, corporate governance issues and the structure and implementation of the System's varied financial investments.

### Internal Auditor's Office

This office performs systematic reviews of the various activities of PSERS, testing for compliance with applicable laws, policies and procedures. The Internal Auditor makes recommendations on the improvement of the System's internal control system.

### Office of Financial Management

This office is directed by the Chief Financial Officer and has responsibility for planning, organizing and directing a complete accounting and financial reporting system in conformance with generally accepted accounting principles. Oversight is provided for new systems development and maintenance of existing systems, and ensuring appropriate accounting controls. The office is the liaison for other state and federal agencies, reporting units, financial consultants, actuaries, and investment advisors for all accounting, treasury operations, taxation, actuarial and budgetary matters.

### Deputy Executive Director

The Deputy Executive Director directly oversees the benefit programs for all active and retired members of the System, the development and implementation of the member and employer communications programs and the retirement counseling programs, and the maintenance of agency policies, procedures, and benefit related data. Additionally, this position oversees business and information technology strategic planning, policy development, and implementation.

### Bureau of Benefits Administration

The Bureau of Benefits Administration maintains account data, determines membership and benefits eligibility, and calculates benefits for Pennsylvania public school employees. This bureau provides these functions for all benefits provided by PSERS, except the PSERS Health Options and Premium Assistance Programs.

### Bureau of Communications and Counseling

The Bureau provides services to educate and inform annuitants, members, employers, staff and the public about the benefit related programs and services provided by PSERS, as well as the rights and duties of employers and members in relation to those benefits. Information communicated spans from very detailed and fact-specific explanations and instructions to more general explanations and educational materials.

### Information Technology Office

This office oversees the Bureau of Information Technology and the Business Architecture Center. It is responsible for strategic information technology planning and policy development, ensuring that information technology plans, projects and policies are aligned with, in support of, and prioritized according to agency needs and requirements as well as those Commonwealth needs and requirements that are consistent with agency needs, and for communicating such to the agency's information technology staff. Large information technology contracts and projects are managed by this office. This office is also responsible for understanding, analyzing, documenting, and improving PSERS' processes, information systems, and the relationships among these components so that PSERS is able to: conduct its business

### Organizational Structure (continued)

consistently and according to established rules; understand each component, its relationship to each of the other components and to PSERS' mission, vision, values and goals; fully, yet quickly analyze and understand the impact of potential change to one or more of these components on the others; more effectively identify inefficient, duplicate, or suspect processes, technologies; account for its processes, information systems and technologies.

#### Business Architecture Center

This center serves as the repository for PSERS' business knowledge and makes that knowledge available and understandable to agency processing and technology staff. The center receives and responds to data queries from agency staff and investigates system, data, or process problems. This center includes staff who collect, analyze, and document PSERS' processes, information systems and data, and perform detailed impact analysis as and when change is proposed. Additionally, staff in this unit coordinate, lead, and track projects and confirm that changes have been applied correctly. They look for opportunities for improvement, lead the development of business requirements, and serve as liaisons between PSERS' end-users and information technology staff. The Systems Support section provides key analytical services to the center and to other bureaus within the organization including specific services such as research, analysis, recommendations for action, and implementation support related to PSERS' information systems, data, or business or management processes.

#### Bureau of Information Technology

This bureau is responsible for planning, coordinating, administering, and implementing information technology resources in accordance with the agency's strategic plans, goals, objectives, and priorities as communicated by PSERS' Chief Information Officer, and for providing operational support for those technologies and initiatives.

#### Assistant Executive Director

This position reports to the Executive Director and may provide assistance to the Executive Director on agency-wide projects. The position administers the Health Options and Premium Assistance Programs in addition to the facilities, human resources, and procurement activities necessary to support, secure and optimize agency operations. Organizational units overseen by the Assistant Executive Director include the Bureau of Administration, the Human Resources Office, and the Health Insurance Office.

#### Bureau of Administration

This bureau provides facilities, purchasing and contracting, policies and procedures, business continuity, records management, automotive, mail, imaging, and other administrative services necessary to support agency functions.

#### Human Resources Office

This office is responsible for supporting management and staff to facilitate the accomplishment of the agency's mission. It administers all human resources programs and ensures compliance with labor laws and Commonwealth regulations. Programs include position classification, labor relations, recruitment and placement, employee benefits, employee compensation and pay, training and staff development, time and attendance, performance management, organizational development and support, employee transactions, Equal Employment Opportunities and other miscellaneous programs.

#### Health Insurance Office

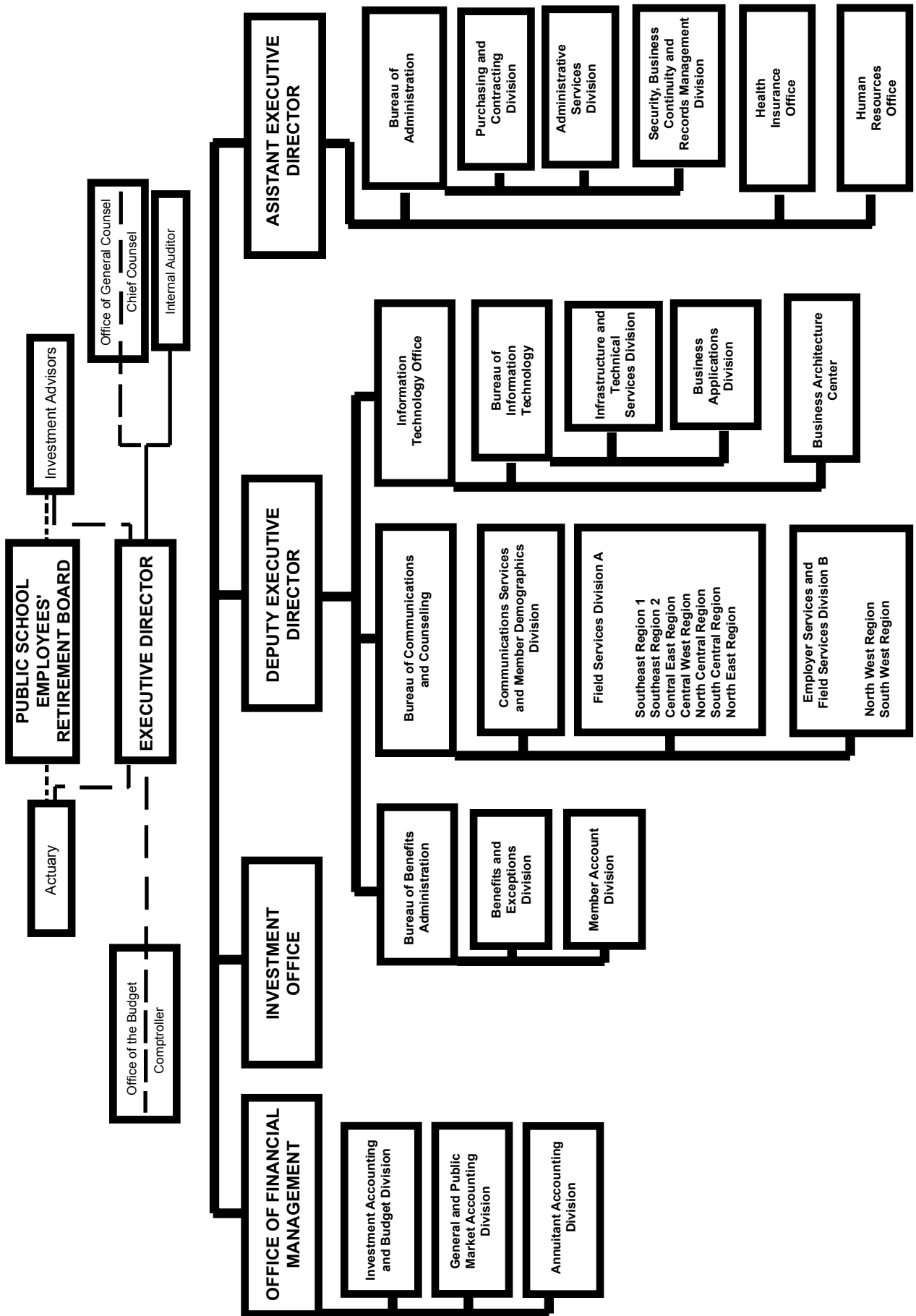
This office is responsible for all aspects of the PSERS' Health Options Program (HOP) and administering the PSERS annuitant health insurance premium assistance benefits. HOP is a voluntary statewide plan that provides group health insurance coverage for school retirees, their spouses, and eligible dependents.

#### PSERS Regional Offices

There are eight PSERS Regional Offices strategically located throughout the Commonwealth. The offices provide services to both active and retired PSERS members and 781 employers. Among these services are regularly scheduled retirement counseling meetings and other informational presentations on various topics relating to retirement benefits and programs.



Chart 1.1  
Organizational Chart of the  
Public School Employees' Retirement System



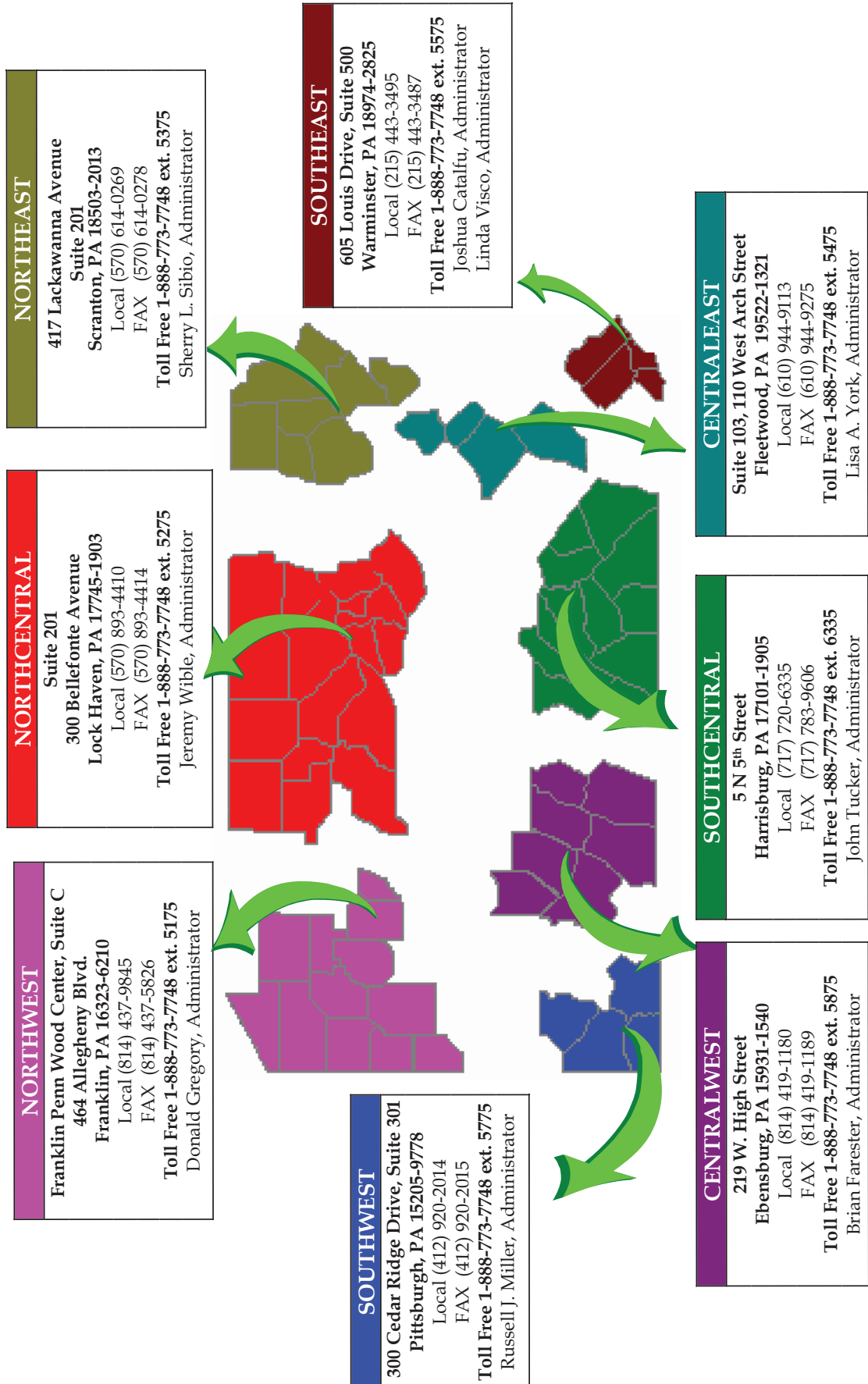
**PSERS REGIONAL OFFICES**

*Public School Employees' Retirement System of Pennsylvania*

**PSERS FIELD SERVICES DIVISION**

*Serving You in the 21<sup>st</sup> Century*

Chart 1.2



## Section 1 - PSERS Overview

### Summary of Various Member Service Statistics

PSERS mission to serve our members. Below are highlights of some of the more common services that PSERS provides to its members.

PSERS operates very efficiently. There are only 322 staff serving the needs of over 500,000 members of the System and 781 employers. PSERS staff is dedicated to fulfilling

Table 1.1 Benefits Processed (Major)			
Calendar Year	<u>2015</u>	<u>2016</u>	
Initial Retirements (1-Step)	9,677	8,854	
Initial Retirements (2-Step)	1,120	968	
Final Retirements (2nd Step of 2-Step)	924	1,523	
Purchases of Service and Corrections for Previously Unreported Service and/or Contributions not Withheld	19,817	16,792	
Refunds	4,569	3,851	
Deaths - Processed and Paid	3,552	3,428	
Account Verification - non retirements	13,754	15,014	
<b>TOTAL</b>	<b>53,413</b>	<b>50,430</b>	
Percent of Retirement Paid as 1 Step	90%	90%	

Table 1.2 Other Member Services (Major)			
Calendar Year	<u>2015</u>	<u>2016</u>	
Retirement Estimates	22,257	20,448	
Phone Calls Answered	191,057	183,070	
E-mails Received	13,228	15,183	
E-mails Sent	13,377	13,756	
General Information Sessions	198	191	
General Information Attendees	8,334	10,511	
Exit Counseling Sessions	902	833	
Exit Counseling Attendees	7,748	6,771	

Table 1.3 Member Payment Services for Retirees and Beneficiaries			
Calendar Year	<u>2015</u>	<u>2016</u>	
Monthly Payments to Members	2,583,630	2,648,042	
Non-recurring Payments to Members	42,326	48,881	
Forms 1099-R Produced	251,822	253,000	
W4-P Tax Withholding Forms Processed	4,974	5,211	
EFT Forms Processed - Direct Deposit	9,443	12,377	
ACH Rejects Researched and Reviewed (Direct Deposit Failures)	3,706	4,857	
Member Payment Changes Processed	4,554	4,314	



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**Economic Impact on Pennsylvania, Member Demographics, and Financial Information**

**Economic Impact of Pension Benefits on Pennsylvania**

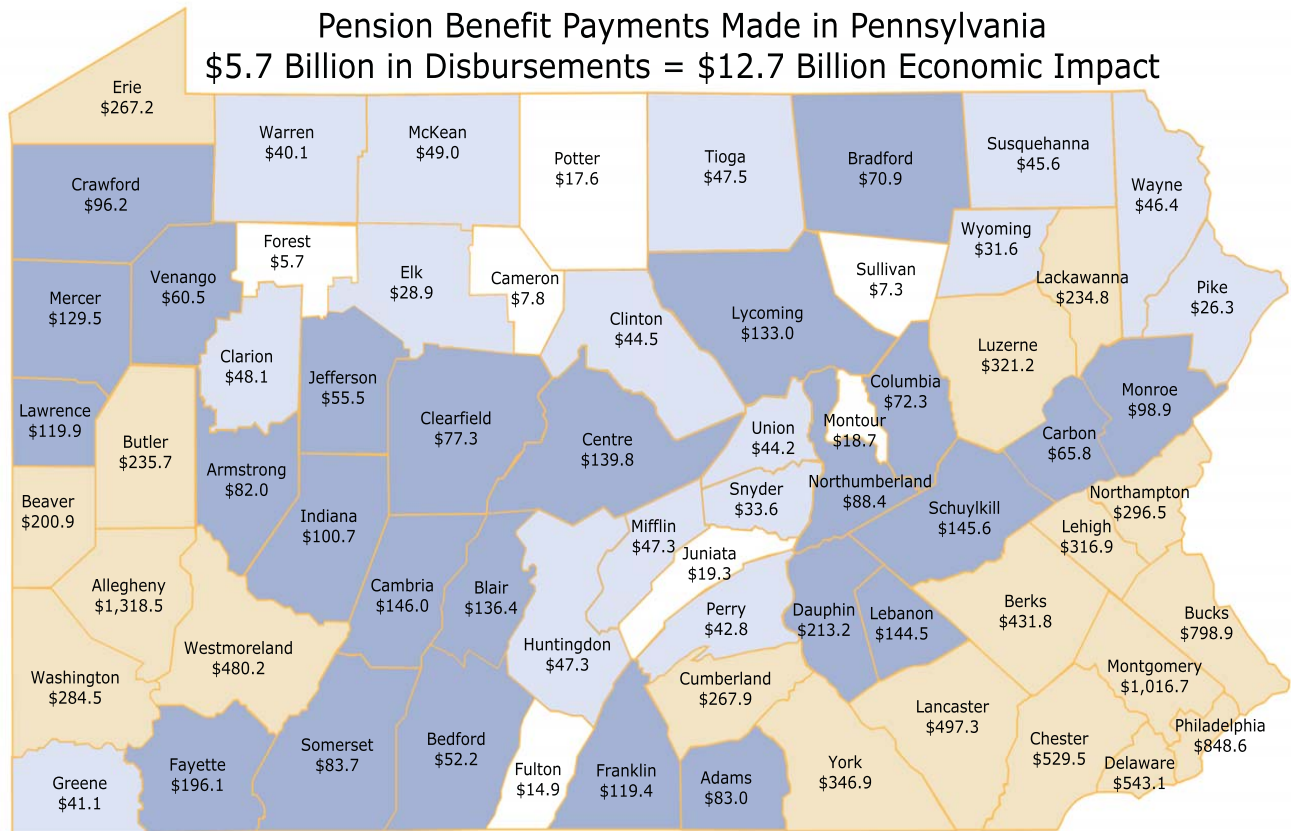
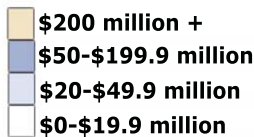
In Fiscal Year 2015-16, PSERS' pension disbursements to retirees totaled approximately \$6.3 billion. Of this amount, approximately 90%, or \$5.7 billion, went directly into state and local economies. According to a study by the National Institute on Retirement Security (NIRS) this spending expands through the economy as the retiree's spending becomes another's income, multiplying the effect of the \$5.7 billion into an economic impact of \$12.7 billion throughout the Commonwealth. Estimates show that the impact of money from PSERS in Pennsylvania includes<sup>1</sup>:

- Economic impact exceeding \$12.7 billion
- Support for over 55,000 jobs that paid \$2.8 billion in wages and salaries
- \$1.5 billion in federal and local tax revenues

**Table 1.4  
Top 10 Counties Based on Economic Impact from Benefit Disbursements  
(Dollars in Millions)**

Allegheny	\$1,318.5
Montgomery	\$1,016.7
Philadelphia	\$848.6
Bucks	\$798.9
Delaware	\$543.1
Chester	\$529.5
Lancaster	\$497.3
Westmoreland	\$480.2
Berks	\$431.8
York	\$346.9

**Total Economic Impact from Benefit Disbursements by County for FY 2015-16  
(Dollar amounts in millions)**



<sup>1</sup>Pensionomics. The National Institute on Retirement Security, September 2016

## Section 1 - PSERS Overview

### Member Demographics and Financial Information (continued)

Fiscal Year ended <u>June 30</u>	Active Members	Annuitytants, Beneficiaries, and Survivor <u>Annuitytants</u>	Total Active/Retired <u>Members</u>	Ratio of Active/ Retired	<u>Vestees</u>	Total <u>Membership</u>
2016	257,080	224,828	481,908	1.14 to 1	23,437	505,345
2015	259,868	219,775	479,643	1.18	21,909	501,552
2014	263,312	213,900	477,212	1.23	20,467	497,679
2013	267,428	209,204	476,632	1.28	18,911	495,543
2012	273,504	202,015	475,519	1.35	17,121	492,640
<b>Average ratio of annuitytants to active members (Public Funds)</b>				1.44*		

\*Based on the December 2016 Public Fund Survey prepared by the National Association of State Retirement Administrators (NASRA).

Type of Member	Number of Members		Average Annual Benefit	
	<u>6/30/2015</u>	<u>6/30/2016</u>	<u>6/30/2015</u>	<u>6/30/2016</u>
Normal/Early Retirees	200,161	204,843	\$26,030	\$26,081
Survivor Annuitytants	10,509	10,809	13,066	13,543
Disability Retirees	<u>9,105</u>	<u>9,176</u>	<u>19,009</u>	<u>19,350</u>
Total	219,775	224,828	\$25,119	\$25,203

	<u>June 30, 2015</u>	<u>June 30, 2016</u>
Average Age	44.9	45.1
Average Years of PSERS Service	11.1	11.3
Average Annual Compensation	\$48,787	\$49,989

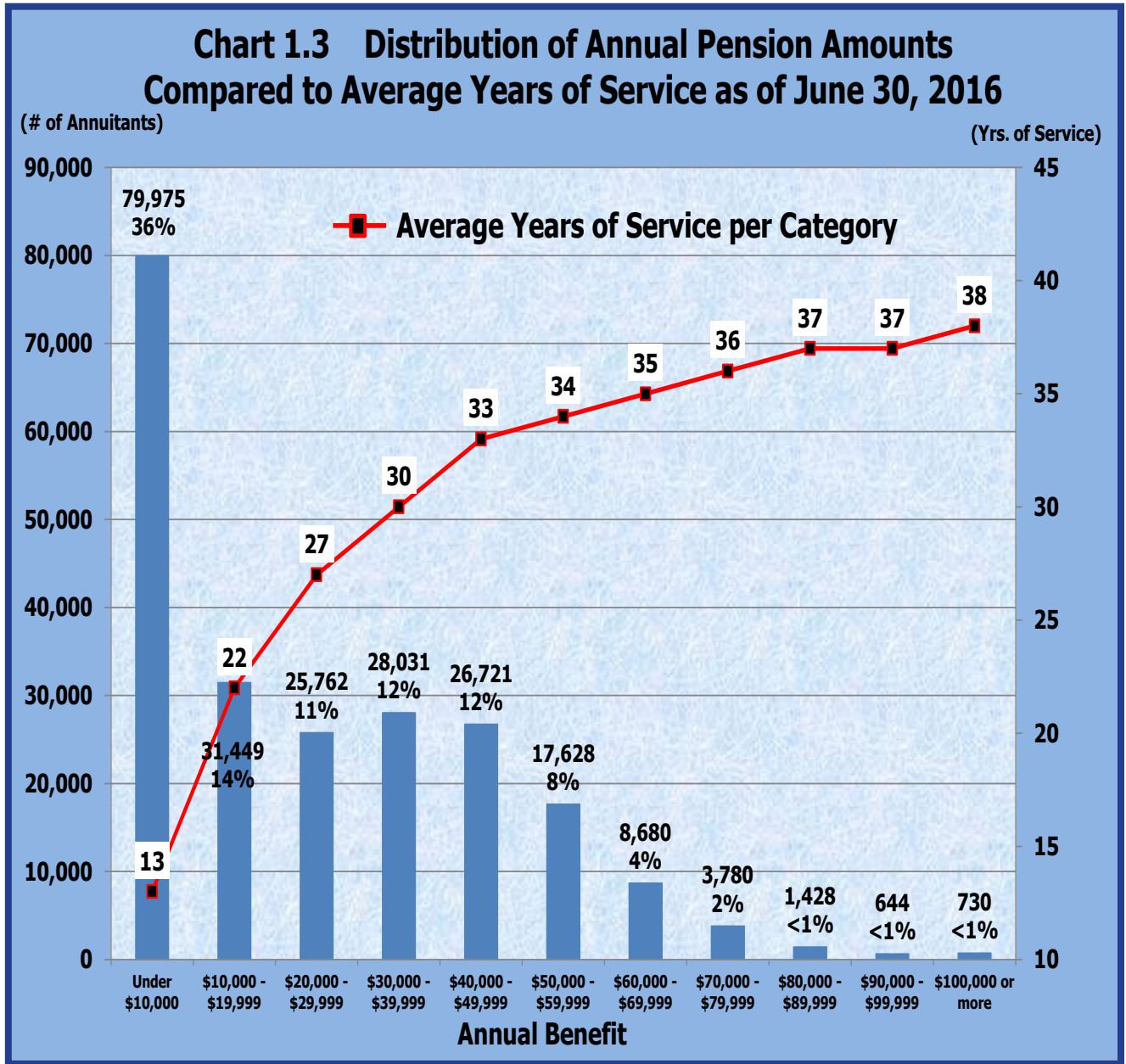
	<u>June 30, 2015</u>	<u>June 30, 2016</u>
Number of Members	41,189	48,628
Average Age	37.4	37.9
Average Years of PSERS Service	1.3	1.7
Average Annual Compensation	\$25,086	\$26,898

	<u>June 30, 2015</u>	<u>June 30, 2016</u>
Number of Members	7,280	9,293
Average Age	36.3	37.0
Average Years of PSERS Service	1.7	1.9
Average Annual Compensation	\$33,035	\$36,822



Member Demographics and Financial Information (continued)



**Benefit Summary**

The average System retiree receives \$25,203 annually, a benefit earned through a career in education.

- Approximately 75% of System retirees receive less than \$40,000 per year in benefits
- Six-figure pensions are rare, with fewer than one-half of 1% of PSERS retirees receiving an annual benefit over \$100,000. Retirees earning over six figures have spent an average of 38 years working in their careers

**Member Demographics and Financial Information (continued)**

**Table 1.7 PSERS Pension Plan Changes in Fiduciary Net Position  
10 Year Cumulative Summary-CALENDAR YEAR-PRELIMINARY  
(Dollar Amounts in Millions)**

	Cumulative 10 Year Total	
	<u>January 1, 2007 - December 31, 2016</u>	
<b>Balance of Pension Net Position (01/01/07)</b>	\$	<b>62,514</b>
Member Contributions	\$	9,612
Employer Contributions		14,912
Net Investment Income		19,672
Total Deductions - Benefits & Expenses		<u>(55,611)</u>
<b>Net Decrease</b>	\$	<b><u>(11,415)</u></b>
<b>Balance of Pension Net Position (12/31/16)</b>	\$	<b>51,099</b>



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**Member Demographics and Financial Information (continued)**

<b>Table 1.8 PSERS Pension Plan Changes in Fiduciary Net Position</b>	
<b>10 Year Cumulative Summary-FISCAL YEAR</b>	
<b>(Dollar Amounts in Millions)</b>	
	<b>Cumulative 10 Year Total</b>
	<b>July 1, 2006 - June 30, 2016</b>
<b>Balance of Net Position (07/01/06)</b>	<b>\$ 57,236</b>
Member Contributions	\$ 9,526
Employer Contributions	13,352
Net Investment Income	24,147
Total Deductions - Benefits & Expenses	<u>(54,429)</u>
<b>Net Decrease</b>	<b>\$ (7,404)</b>
<b>Balance of Net Position (6/30/16)</b>	<b>\$ 49,832</b>

<b>Table 1.9 Cash Flow</b>			
<b>Fiscal Years Ended in June 30</b>			
<b>(Dollar Amounts in Millions)</b>			
		<b>--- Projected ---</b>	
	<b>2016</b>	<b>2017</b>	<b>2018</b>
Member Contributions	\$ 989	\$ 996	\$ 1,015
Employer Contributions	<u>3,190</u>	<u>3,953</u>	<u>4,356</u>
<b>Total Contributions</b>	<b>\$ 4,179</b>	<b>\$ 4,949</b>	<b>\$ 5,371</b>
<b>Less:</b>			
Pension Benefits	<u>6,340</u>	<u>6,515</u>	<u>6,680</u>
<b>Negative Cash Flow</b>	<b>\$ -2,161</b>	<b>\$ -1,566</b>	<b>\$ -1,309</b>
<b>Beginning of Year Total Assets</b>	<b>\$ 51,586</b>	<b>\$ 49,832</b>	<b>\$ 51,746</b>
<b>Negative Cash Flow (NCF) as a % of Total Assets</b>	<b>-4.2%</b>	<b>-3.1%</b>	<b>-2.5%</b>
<b>Average NCF as a % of Total Assets (Public Funds)</b>	<b>-2.3%*</b>		

\*Based on the December 2016 Public Fund Survey prepared by NASRA.

**Negative Cash Flow (NCF)**

Using data from Table 1.8 at the top of the page, the last 10 years of contributions and benefit payments resulted in a Negative Cash Flow (NCF) of -\$31.6 billion (comprised of total deductions less member and employer contributions) during that time period. In Table 1.9, PSERS' NCF percentage is -4.2% of total assets for FY 2015-16. PSERS' projected NCF percentage of -2.5% for FY 2017-18 is approaching the public fund average due to the System receiving the actuarially required contributions. PSERS total assets are projected to grow.

Member Demographics and Financial Information (continued)

Chart 1.4 Net Increase/Decrease to Pension Fiduciary Net Position\*  
10 Year Trend (Fiscal Year Ended June 30)  
(\$ Amounts in Billions)

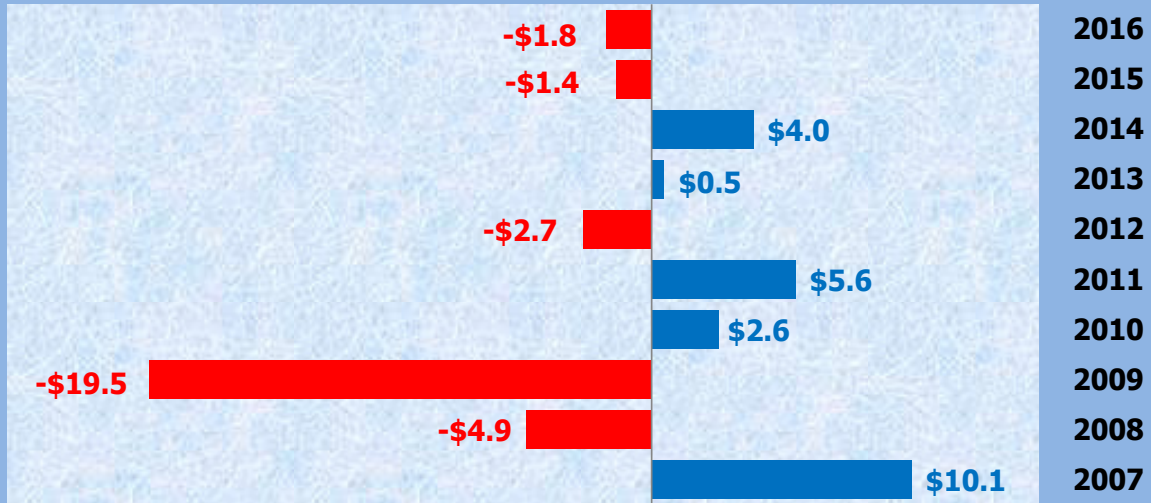
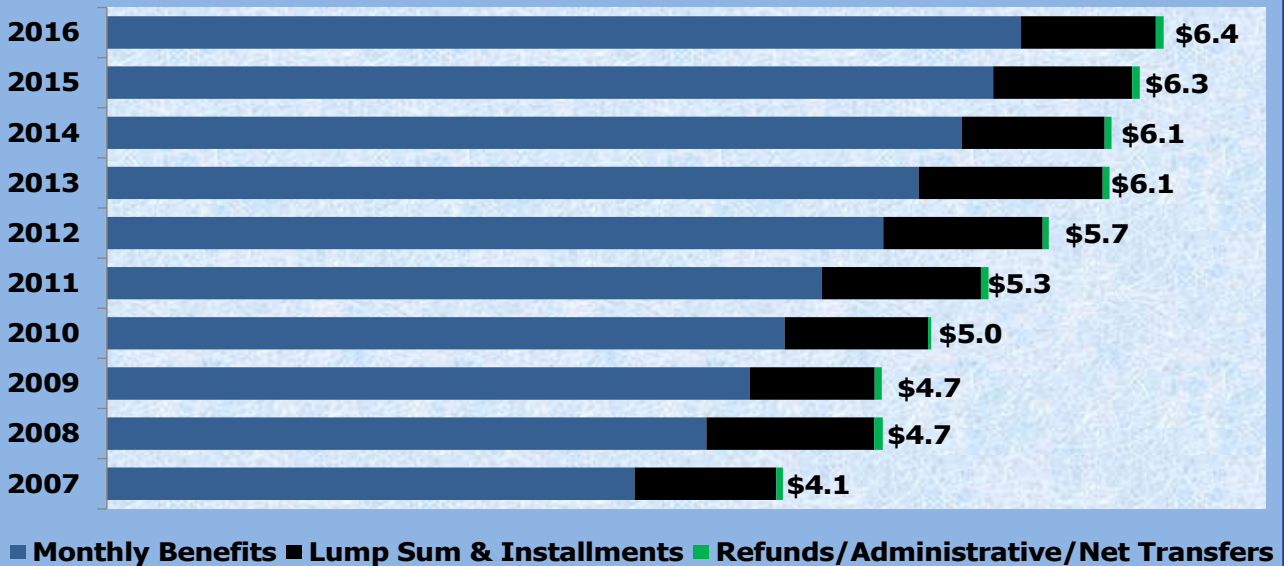


Chart 1.5 Deductions from Pension Fiduciary Net Position\*  
10 Year Trend (Fiscal Year ended June 30)  
(\$Amounts in Billions)



\*Does not include PSERS Postemployment Healthcare Plan Net Position.

## Section 1 - PSERS Overview

### Statement of Fiduciary Net Position - Preliminary and Unaudited December 31, 2016 (Dollar Amounts in Thousands)

	Postemployment Healthcare			Totals
	Pension	Premium Assistance	Health Options Program	
<b>Assets:</b>				
Receivables:				
Members	\$ 325,407	\$ 3,061	\$ 57	\$ 328,525
Employers	1,027,013	30,217	-	1,057,231
Investment income	183,107	132	48	183,287
Investment proceeds	988,846	-	-	988,846
CMS Part D and prescriptions	-	-	61,161	61,161
Interfund	-	6,420	-	6,420
Miscellaneous	245	51	-	296
<b>Total Receivables</b>	<b>2,524,619</b>	<b>39,881</b>	<b>61,265</b>	<b>2,625,765</b>
Investments, at fair value:				
Short-term	5,693,930	82,700	224,170	6,000,800
Fixed income	4,232,445	-	-	4,232,445
Common and preferred stock	10,242,471	-	-	10,242,471
Collective trust funds	12,817,234	-	-	12,817,234
Real estate	5,071,950	-	-	5,071,950
Alternative investments	11,140,556	-	-	11,140,556
<b>Total Investments</b>	<b>49,198,587</b>	<b>82,700</b>	<b>224,170</b>	<b>49,505,457</b>
Securities lending collateral pool	1,479,953	-	-	1,479,953
Capital assets (net of accumulated depreciation \$28,096)	22,972	-	-	22,972
<b>Total Assets</b>	<b>53,226,130</b>	<b>122,581</b>	<b>285,435</b>	<b>53,634,146</b>
<b>Deferred outflows of resources</b>	<b>11,324</b>	<b>-</b>	<b>-</b>	<b>11,324</b>
<b>Liabilities:</b>				
Accounts payable and accrued expenses	180,602	218	1,495	182,315
Benefits payable	191,536	-	22,444	213,981
Participant premium advances	-	-	28,186	28,186
Investment purchases and other liabilities	279,112	-	-	279,112
Obligations under securities lending	1,479,953	-	-	1,479,953
Interfund payable	6,420	-	-	6,420
<b>Total Liabilities</b>	<b>2,137,623</b>	<b>218</b>	<b>52,125</b>	<b>2,189,967</b>
<b>Deferred inflows of resources</b>	<b>1,268</b>	<b>-</b>	<b>-</b>	<b>1,268</b>
<b>Net position restricted for pension and postemployment healthcare benefits</b>	<b>\$ 51,098,563</b>	<b>\$ 122,363</b>	<b>\$ 233,310</b>	<b>\$ 51,454,236</b>

## Section 1 - PSERS Overview

### Statements of Changes in Fiduciary Net Position - Preliminary and Unaudited Six Months Ended December 31, 2016 (Dollar Amounts in Thousands)

	Postemployment Healthcare			Totals
	Pension	Premium Assistance	Health Options Program	
<b>Additions:</b>				
Contributions:				
Members	\$ 467,373	\$ -	\$ -	\$ 476,373
Employers	1,811,317	53,457	-	1,864,774
<b>Total contributions</b>	<b>2,287,690</b>	<b>53,457</b>	<b>-</b>	<b>2,341,146</b>
Participant premiums	-	-	163,551	163,551
Centers for Medicare & Medicaid Services premiums	-	-	50,906	50,906
Investment income:				
From investing activities:				
Net appreciation (depreciation) in fair value of investments	1,712,835	(209)	-	1,712,625
Short-term	40,296	524	259	41,079
Fixed income	77,142	-	-	77,142
Common and preferred stock	111,641	-	-	111,641
Collective trust funds	1,643	-	-	1,643
Real estate	99,470	-	-	99,470
Alternative investments	290,361	-	-	290,361
<b>Total investment activity income</b>	<b>2,333,389</b>	<b>314</b>	<b>259</b>	<b>2,333,962</b>
Investment expenses	(240,503)	-	-	(240,503)
<b>Net income from investing activities</b>	<b>2,092,886</b>	<b>314</b>	<b>259</b>	<b>2,093,460</b>
From securities lending activities:				
Securities lending income	8,402	-	-	8,402
Securities lending expense	(2,318)	-	-	(2,318)
<b>Net income from securities lending activities</b>	<b>6,083</b>	<b>-</b>	<b>-</b>	<b>6,083</b>
<b>Total net investment income</b>	<b>2,098,970</b>	<b>314</b>	<b>259</b>	<b>2,099,543</b>
<b>Total Additions</b>	<b>4,386,660</b>	<b>53,771</b>	<b>214,717</b>	<b>4,655,147</b>
<b>Deductions:</b>				
Benefits	3,093,178	55,008	157,033	3,305,219
Refunds of contributions	8,040	-	-	8,040
Administrative expenses	18,939	963	18,312	38,214
<b>Total Deductions</b>	<b>3,120,157</b>	<b>55,971</b>	<b>175,346</b>	<b>3,351,473</b>
<b>Net increase (decrease)</b>	<b>1,266,503</b>	<b>(2,200)</b>	<b>39,371</b>	<b>1,303,674</b>
<b>Net position restricted for pension and postemployment healthcare benefits:</b>				
<b>Balance, beginning of year</b>	<b>49,832,060</b>	<b>124,563</b>	<b>193,939</b>	<b>50,150,562</b>
<b>Balance, end of year</b>	<b>\$ 51,098,563</b>	<b>\$ 122,363</b>	<b>\$ 233,310</b>	<b>\$ 51,454,236</b>



## The Actuarial Process and Pension Plan Funding

PSERS is a defined benefit plan, meaning benefits are based on members' service and salary history. The following information highlights the actuarial process and funding for PSERS.

### Actuarial Process

The actuarial process presumes that there will be a systematic flow of contributions at a specified level to pay for plan benefits and that the flow of contributions, together with investment earnings, will be sufficient to meet all benefit and expense requirements of the plan. Actuarial cost methods for funding PSERS' pension plan are defined in the Public School Employees' Retirement Code. The actuary for the pension plan and PSERS' staff review economic and demographic experience annually and, in more depth, over five-year periods. The actuary's periodic valuations test the validity of the underlying actuarial assumptions versus the actual experience of the plan. That experience is also used as a basis for formulating actuarial assumptions about what will occur in the future with respect to salary growth, investment returns, and demographic factors such as rates of retirement and death.

Effective with the June 30, 2016 actuarial valuation, PSERS adopted several new demographic and economic assumptions as a result of the five-year Experience Study completed by PSERS' actuary. PSERS' investment rate of return assumption was changed from 7.50% to 7.25%, the salary growth assumption was changed from 5.50% to 5.00%, the inflation assumption was reduced from 3.00% to 2.75%, the rates of withdrawal, disability and retirement from employment among active members were updated and mortality rates were revised. Chart 1.6 places PSERS' 7.25% return assumption among the most conservative funds in the public pension universe.

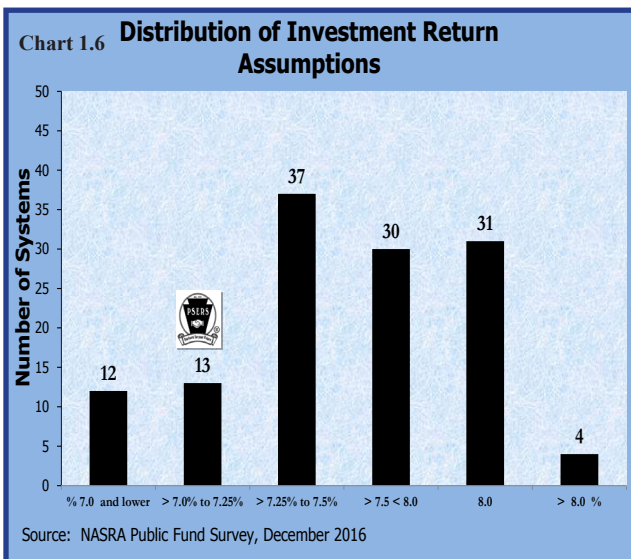
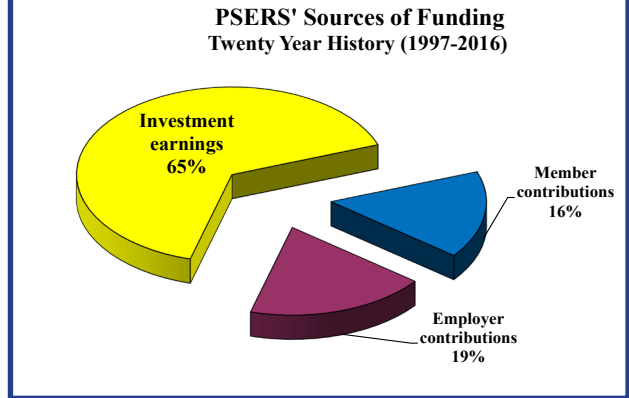


Chart 1.7



### Funding

The plan is funded through three sources: (1) employer contributions; (2) member contributions; and, (3) investment earnings. As depicted in Chart 1.7, for the twenty-year period ended June 30, 2016 investment earnings provided 65% of PSERS' funding followed by 16% from members while employers contributed 19%.

### Employer Contributions

The Retirement Code vests PSERS' Board with the authority to establish the employer contribution rate (ECR) based on the parameters in the Retirement Code. The Board, in consultation with the actuary, establishes the employer contribution rate annually, as part of the annual actuarial valuation. The employer contribution rate, which is expressed as a percentage of payroll, is composed of two items: (1) the pension contribution; and, (2) the contribution for health care premium assistance.

The total employer contribution rate for the fiscal year ended June 30, 2016 was 25.84%, including 0.84% for healthcare premium assistance. The total employer contribution rate for the fiscal year ending June 30, 2017 is 30.03%. This rate consists of a 29.20% pension rate (the Act 120 collar no longer limits the rate) plus the healthcare premium assistance contribution of 0.83%. The FY 2017-18 employer contribution rate is 32.57%. This rate consists of a 31.74% pension rate plus the healthcare premium assistance contribution of 0.83%. The Board of Trustees certified this rate, which was calculated in accordance with the provisions of Act 120 of 2010, at their December 2016 meeting. While any contribution increase is a challenge for PSERS' employers, the increase in the FY 2017-18 contribution rate is the smallest since FY 2009-10.

For the fiscal year ended June 30, 2016, PSERS' employer contributions totaled \$3.303 billion, which includes \$113 million for healthcare premium assistance. For the fiscal year ending June 30, 2017 the estimate for employer contributions is \$3.976 billion, reflective of the 30.03% contribution rate. The contribution rate for the fiscal year ending June 30, 2018 is 32.57% resulting in an employer contribution estimate of \$4.401 billion.

**The Actuarial Process and Pension Plan Funding**

**(continued)**

**Member Contributions**

Most members of the Public School Employees' Retirement System contribute between 7.5% and 10.3% of their pay depending on their class of membership to help fund their own retirement benefit. The average contribution rate payable by the members for the current year (FY2016-17) is 7.52%. This is in contrast to many non-public (private) pension plans to which members of over 90% of such plans do not contribute (Source: based on a query of private plan IRS Form 5500 filings). For these plans, the employers bear 100% of the costs of the benefit.

According to recent National Association of State Retirement Administrators (NASRA) data, PSERS member contribution rate is one of the highest among U.S. public pension plans that participate in Social Security.

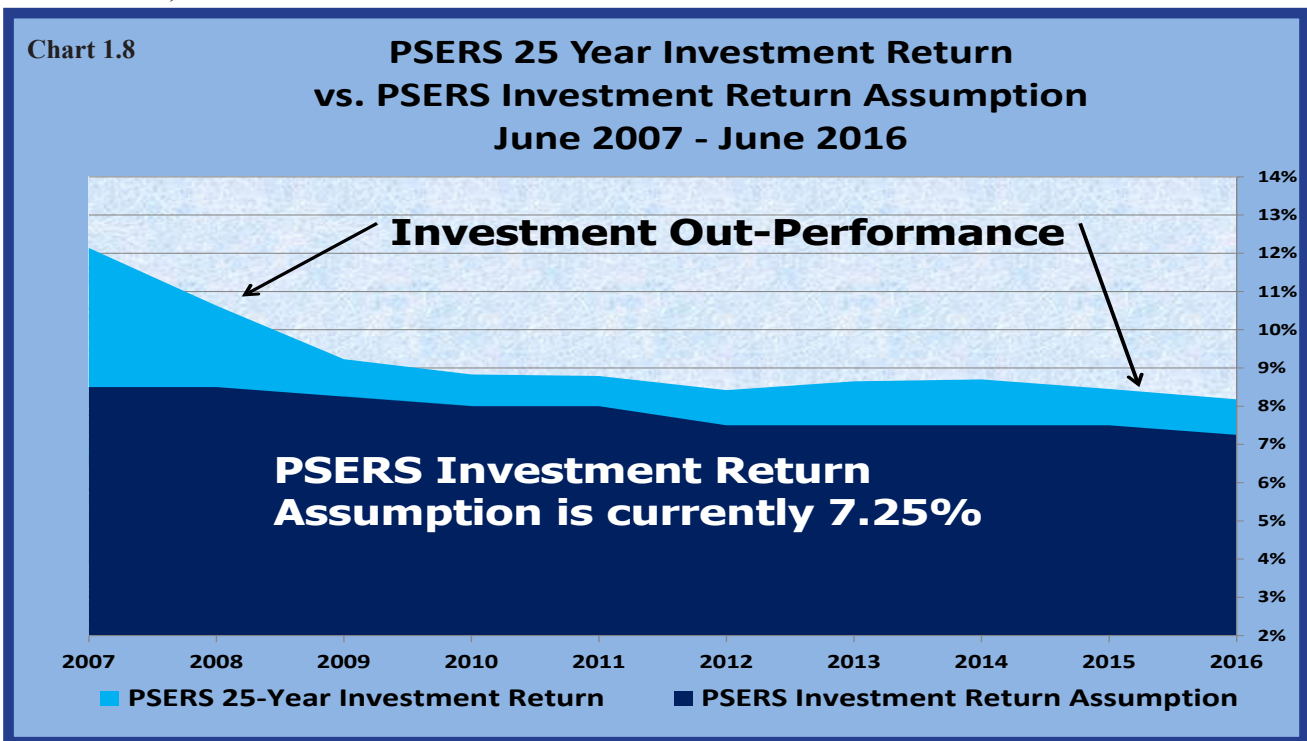
Pursuant to Act 120, Class T-E and Class T-F members are subject to a "shared risk" employee contribution rate. The member contribution rate will stay within the specified range allotted for Class T-E or Class T-F, but could increase or decrease every three years starting July 1, 2015 depending on investment performance. Members now share a portion of the investment risk of the Fund giving PSERS a defined contribution element. As a result of the Fund's 8.66% three year return through June 30, 2014 exceeding the investment performance hurdle mandated by Act 120, the member rate did not change. The next investment performance measurement period for Class T-E and T-F members will end on June 30, 2017.

PSERS' members contributed \$989 million for pension contributions for FY2016. Total member contributions are estimated to be \$996 million for the fiscal year ending June 30, 2017 and \$1.019 billion for the fiscal year ending June 30, 2018.

**Investment Returns**

PSERS' preliminary investment rate of return for the calendar year ended December 31, 2016 is 10.75%, net of fees. The investment rates of return (net of fees) for the fiscal years ended June 30, 2016 and June 30, 2015 were 1.29% and 3.04%, respectively. The annualized rates of investment return for the three, five and ten-year periods ended June 30, 2016 were 6.24%, 6.01%, and 4.94% respectively. Over the past 25 years ended June 30, 2016, the Fund earned an annualized rate of return of 8.18% which exceeded the Fund's long term investment rate of return assumption.

PSERS' 25-year return, as shown in Chart 1.8, has consistently outperformed the actuarial investment rate of return. Throughout much of the 1990s and 2000s PSERS' investment performance exceeded its investment rate of return assumption which resulted in the large cumulative outperformance in 2007. This outstanding long-term investment performance resulted in declining employer contribution rates and/or contribution rates lower than the annual normal cost of benefits for most of those two decades. Even after the Great Recession of 2008-2009, PSERS' long-term returns continued to exceed the return assumption.



## The Actuarial Process and Pension Plan Funding (continued)

### Funded Status

PSERS' funded status is measured by comparing the actuarial value of assets with the accrued liability. The accrued liability is the present value of benefits accumulated to date for both active and retired members.

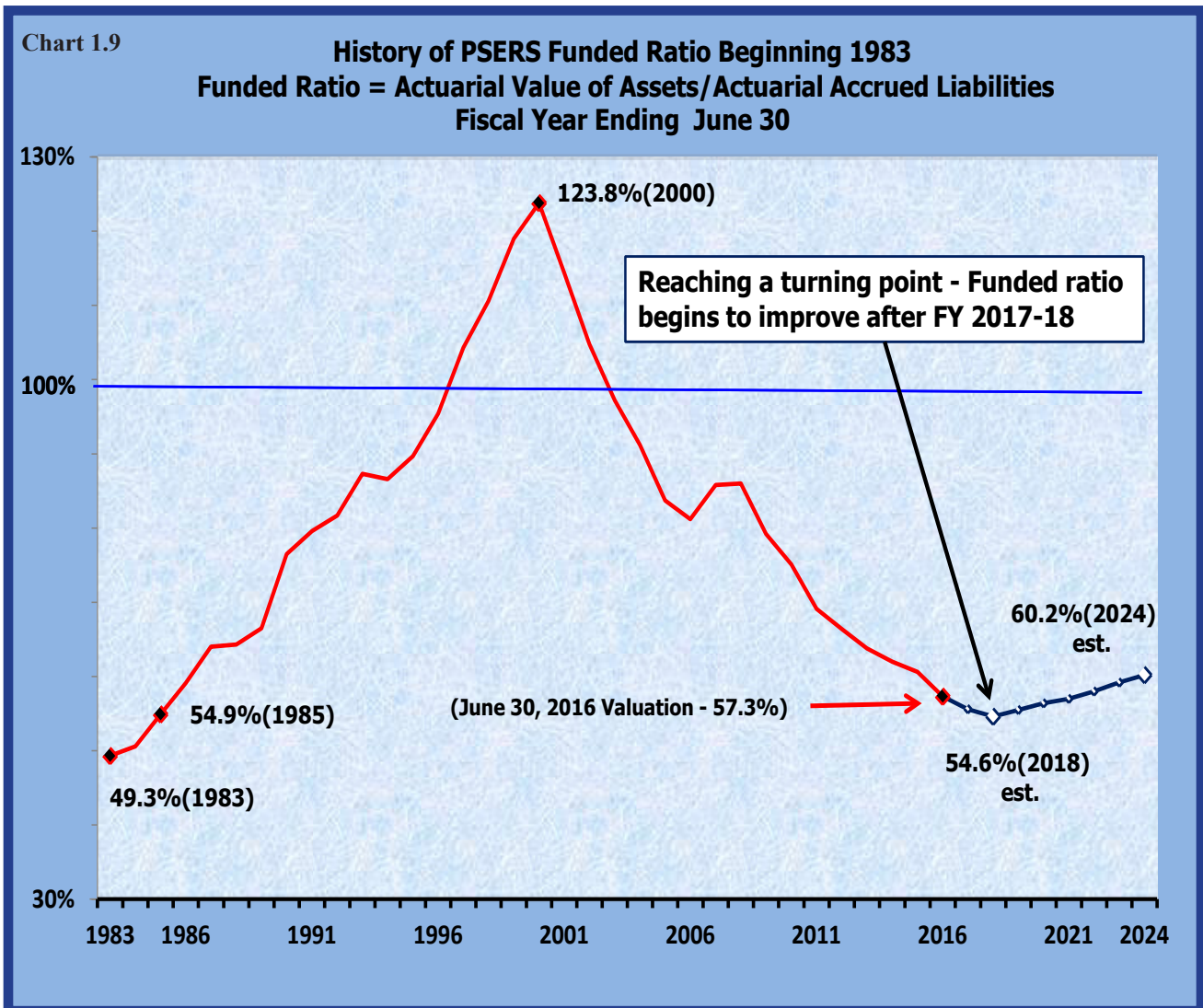
### Key Facts

- As a result of legislated contribution increases under Act 120, PSERS is reaching a turning point. After FY 2017-18 PSERS' funded ratio is projected to slowly improve after declining for many years.
- Funded Status: 57.3% as of June 30, 2016
- Funded Status: 60.6% as of June 30, 2015
- The decrease in FY2016 is primarily due to the actuarial value of assets loss that occurred during the

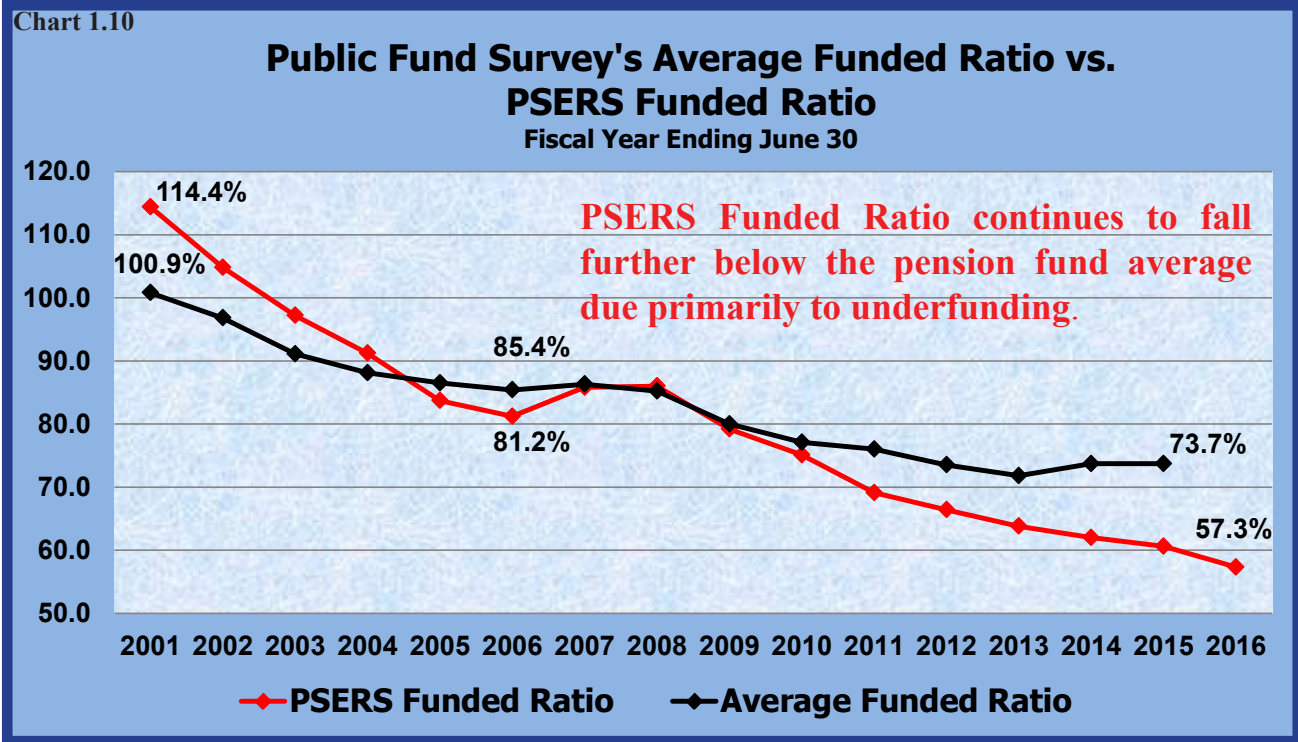
year as a result of the 10 year asset smoothing used for actuarial valuation purposes and the continued underfunding of PSERS by its employers. As a result of the rate collar provisions of Act 120, employers underfunded PSERS by \$377 million in FY2016.

- The decrease in the funded status since 2000 is the result of several factors including: the unfavorable investment markets from FY2001 to FY2003 and FY2008 to FY2009; funding changes enacted in Act 38 of 2002 and Act 40 of 2003 which resulted in employers underfunding PSERS; benefit enhancements from Act 9 and Act 38; the adoption of new demographic and economics assumptions in FY2016; funding collars in Act 120 which continued the employer underfunding of the system; and, actuarial liability losses.

A history of PSERS' funded ratio beginning in 1983 and eight-year projection of PSERS' funded status is shown in Chart 1.9. As a result of legislated contribution increases under Act 120, PSERS is reaching a turning point. In FY 2017-18 PSERS' funded ratio is projected to slowly improve after declining for many years.



The Actuarial Process and Pension Plan Funding  
(continued)



A comparison of PSERS’ funded ratio to the public fund projected weighted average funding ratio provided by the National Association of State Retirement Administrators (NASRA) is shown in Chart 1.10 above. A lower than average funded ratio is an important factor because it signifies a smaller than average asset base. A smaller asset base means a greater percentage of the investment returns are being used to pay benefits, and results in a very slow growth of assets.

Besides market performance, other factors that affect a plan’s funding level include contributions made relative to those that are required; changes in benefit levels; changes in actuarial assumptions, and rates of employee salary growth (*Public Fund Survey*, 2016).

Beginning July 1, 2016 PSERS’ employer contribution rate provides 100% of the actuarially required rate. This is the first major step needed for PSERS’ funded ratio to begin to improve. As a result of receiving 100% of the actuarially required rate, PSERS’ funded ratio is projected to improve after FY 2017-18.

**The Actuarial Process and Pension Plan Funding (continued)**

**Sources of Unfunded Liability**

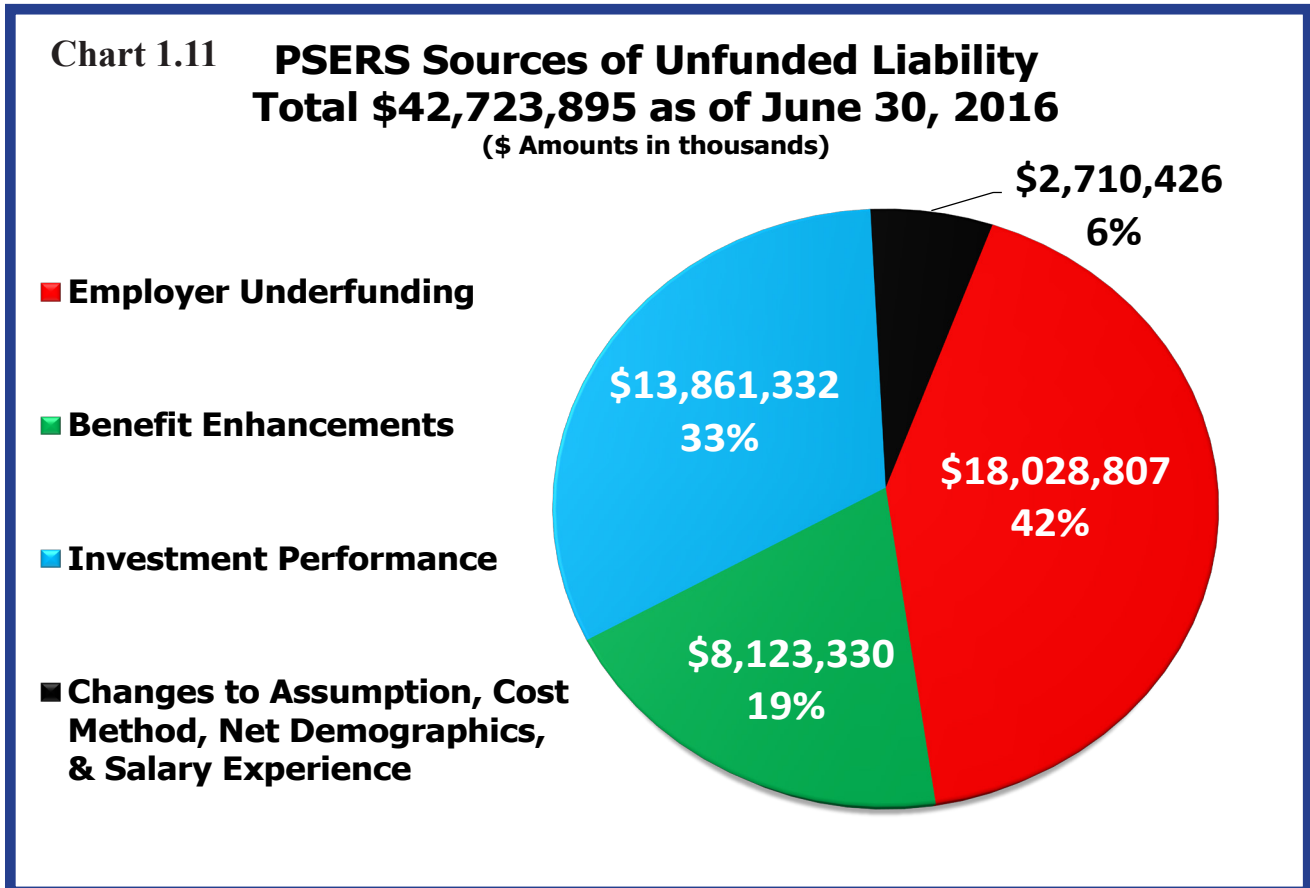
The System’s total funded ratio (for Pensions and Health Insurance combined) is 57.3% as of June 30, 2016. This funded ratio is based on an actuarial value of assets of \$57.39 billion and a total accrued liability of \$100.11 billion which equates to a \$42.72 billion unfunded liability. Chart 1.11 depicts the sources of the unfunded liability. The largest sources of unfunded liability in order of magnitude are employer funding deferrals (42%), investment performance (33%), and benefit enhancements (19%), which include Act 9, cost of living increases and early retirement incentives. The new demographic and economic assumptions adopted by the Board in June 2016 have added approximately \$2.5 billion to the unfunded liability. The additional unfunded liability will be amortized over 24 years so the impact to the FY 2017-18 employer contribution rate was small.

For many years PSERS’ outstanding investment performance compensated for unfunded benefit enhancements and employer funding deferrals. The Great Recession had a negative impact upon the System’s long-term investment performance. Without the higher investment out-performance to compensate, the employer funding deferrals and benefit enhancements

have significantly increased PSERS’ unfunded liability. Approximately sixty-one percent of PSERS’ June 30, 2016 unfunded liability is due to employer funding deferrals and benefit enhancements, both of which are not a result of the defined benefit plan design.

**GASB 68 Pension Reporting for Employers**

In June 2016, PSERS sent information to its employers to assist them in complying with the Governmental Accounting Standards Board (GASB) Statement No. 68, *Accounting and Financial Reporting for Pensions*. The information sent to employers included a memo explaining PSERS’ role, descriptions of the material provided, and the employers’ responsibilities. In addition to the memo, PSERS provided a variety of schedules audited by PSERS’ independent public accountants as well as unaudited schedules. PSERS strives to incorporate all the information necessary for employers to comply with GASB 68 reporting requirements in these audited and unaudited schedules. Additionally, PSERS continues to make itself available to assist employers and their auditors should they have any additional requests in order to comply with GASB 68.







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## Employer Contribution Rate

PSERS undergoes an annual independent actuarial valuation to calculate the actuarial assets and liabilities of the pension fund. Based on the actuarial valuation process, the actuary develops the recommended Employer Contribution Rate (ECR) that determines the employer contributions to the pension plan and healthcare premium assistance. The valuation process also measures the progress of the pension system towards funding pensions for its active and retired members.

### Employer Contribution Rate Statistics

- Highest historical ECR (FY 2016-17) 30.03%
- Lowest historical ECR (FY 2001-02) 1.09%
- Ten yr. avg. ECR (2007-08 to 2016-17) 13.75%
- Twenty yr. avg. ECR (1997-98 to 2016-17) 9.01%
- Thirty yr. avg. ECR (1987-88 to 2016-17) 11.12%
- Adopted ECR (FY 2017-18) 32.57%

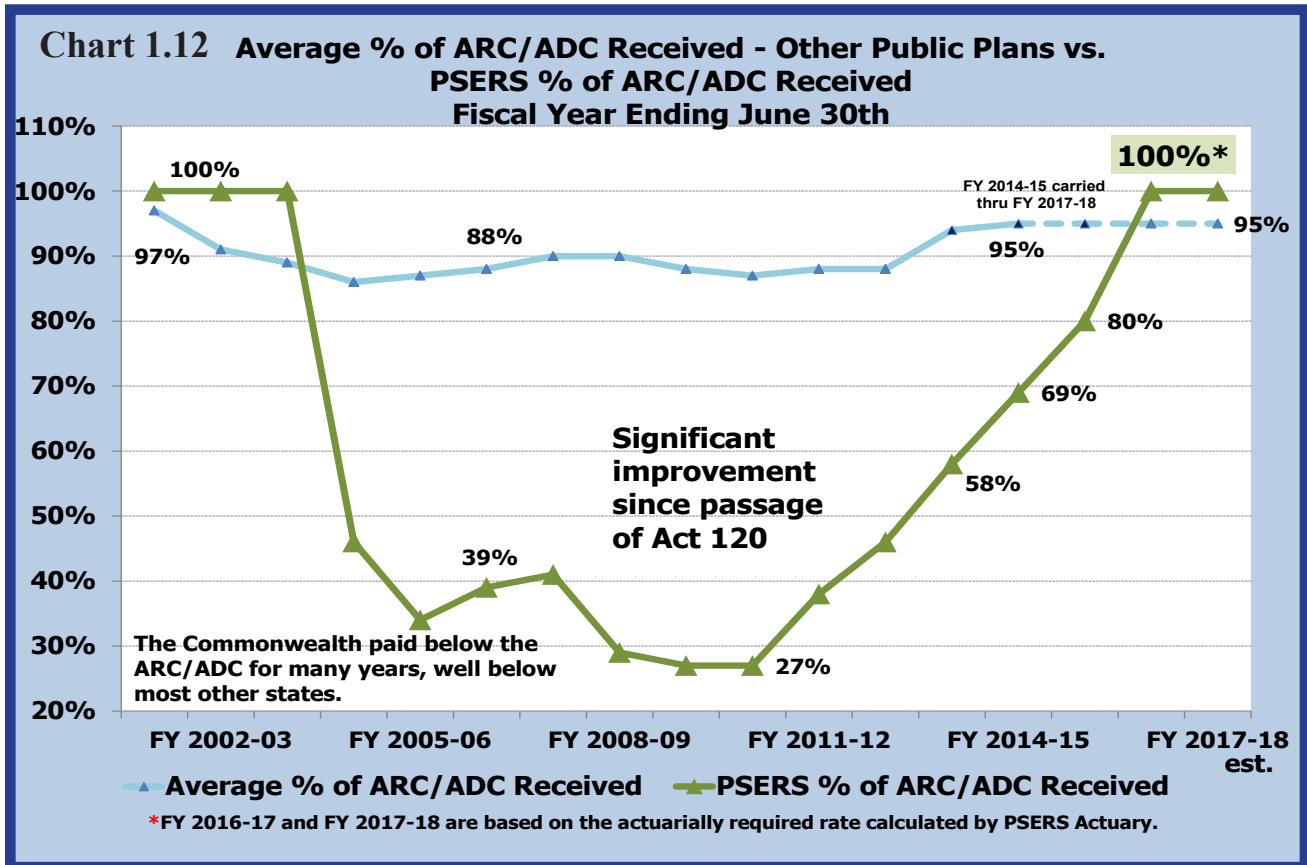
at PSERS. The legislation included actuarial and funding changes to PSERS and benefit reductions for individuals who became new members of PSERS on or after July 1, 2011.

As depicted in the Chart 1.12, the gradual rate increases under Act 120 have raised PSERS' employer contributions to the 100% annual required contribution (ARC) goal, now referred to as the actuarially determined contribution (ADC), for the first time in 15 years. An ARC includes both the employer's normal cost and the amount required to amortize the unfunded actuarial accrued liability (UAAL). PSERS' Board certified an employer contribution rate of 32.57% for FY 2017-18 in compliance with Act 120. This is the second consecutive year PSERS' contribution rate provides 100% of the actuarially required rate based on sound actuarial practices and principles and now exceeds the average ARC percentage of 95% for public funds based on the December 2016 Public Fund Survey prepared by NASRA.

## Act 120 of 2010

### Progress on Funding Issue

PSERS is now in the 6th year of a multi-year phase in of Act 120 of 2010. Act 120 provided historic pension reform and made dramatic progress toward addressing funding issues



**Employer Contribution Rate  
(continued)**

**Impact of Benefit Cuts for New Members on or after July 1, 2011**

For school employees who became new members of PSERS on or after July 1, 2011, there are two new classes; Class T-E and T-F. As of June 30, 2016, members hired since the passage of Act 120 now total approximately 58,000 and account for 23% of the total active membership.

**Class T-E**

- Pension multiplier is 2%
- Effective July 1, 2011 employee contribution base rate is 7.5% (base rate) with “shared risk” contribution levels between 7.5% and 9.5%

**Class T-F**

- Pension multiplier is 2.5%
- Effective July 1, 2011 employee contribution base rate is 10.3% (base rate) with “shared risk” contribution levels between 10.3% and 12.3%

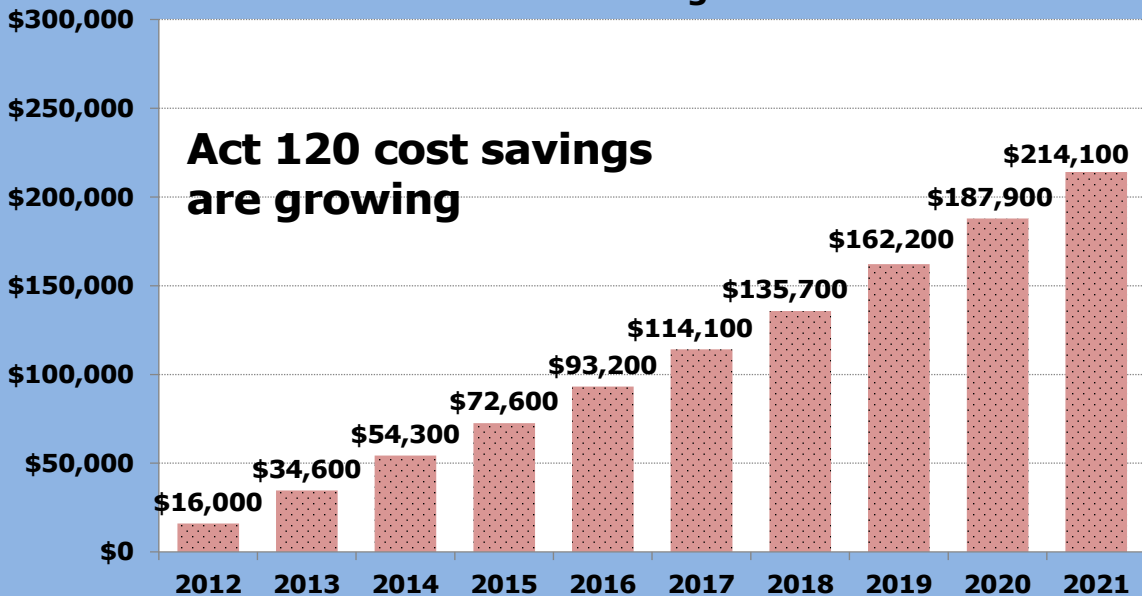
Class T-E and T-F members share some of the risk when investments underperform. As a result of the Fund’s 8.66% three year return through June 30, 2014 exceeding the investment performance hurdle mandated by Act 120, the member rate has not changed. The next three year investment performance measurement period for T-E/T-F members that could increase the member rate by .5% ends June 30, 2017.

The total estimated savings of the T-E/T-F Benefit Tiers is illustrated in Chart 1.13. As the membership grows, the annual savings from the low T-E/T-F cost structure also increases and allows a greater portion of employer contributions to go towards paying the unfunded liability. Cumulative estimated savings through June 30, 2016 were \$270.7 million. The average member benefit for Act 120 members is approximately 32% lower than the benefit for pre-Act 120 members.

As of June 30, 2016, 9,293 or 16% of new members elected Class T-F and 48,628 or 84% of new members remained in Class T-E. As indicated, Class T-F members maintain the higher 2.5% pension multiplier but contribute at a higher member contribution rate than Class T-E members.

**Chart 1.13**

**PSERS  
Act 120 Total Estimated Annual Savings from  
TE/TF Benefit Tiers (ooo's omitted)  
Fiscal Year Ending June 30**



**Employer Contribution Rate  
(continued)**

**Funding Changes - Employer Contributions**

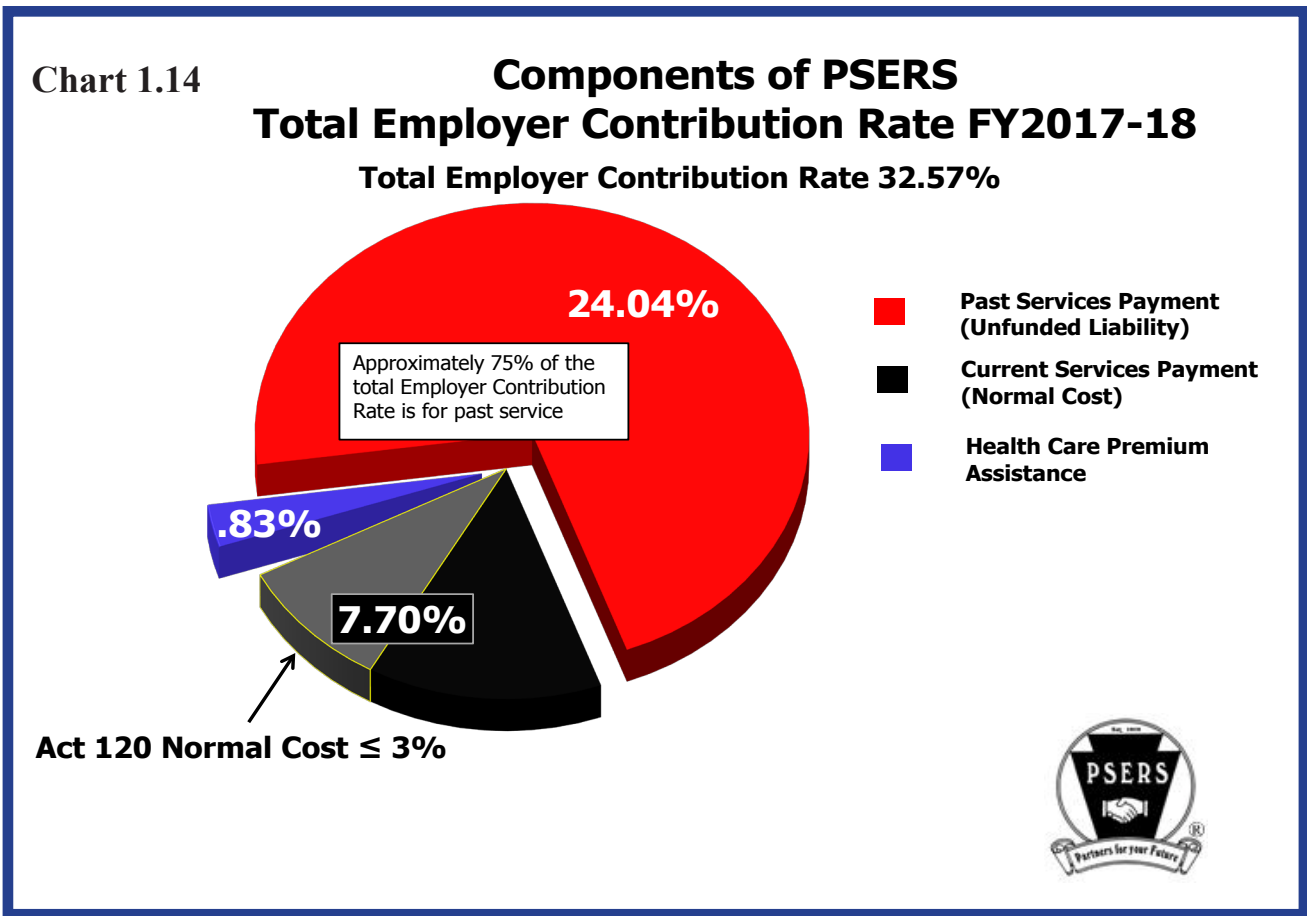
Act 120 of 2010 also suppressed the employer contribution rate by using rate caps in future years to keep the rate from rising too high, too fast for budgetary purposes.

The Act 120 rate caps limited the amount the pension component of the employer contribution rate could increase over the prior year's rates.

PSERS' Board has approved a total employer contribution rate of 32.57% comprised of a pension contribution rate of 31.74% for FY 2017-18 which represents an increase of 2.54% over the FY 2016-17 rate of 29.20% and a healthcare rate of 0.83%.

**Employer Contribution Rate**

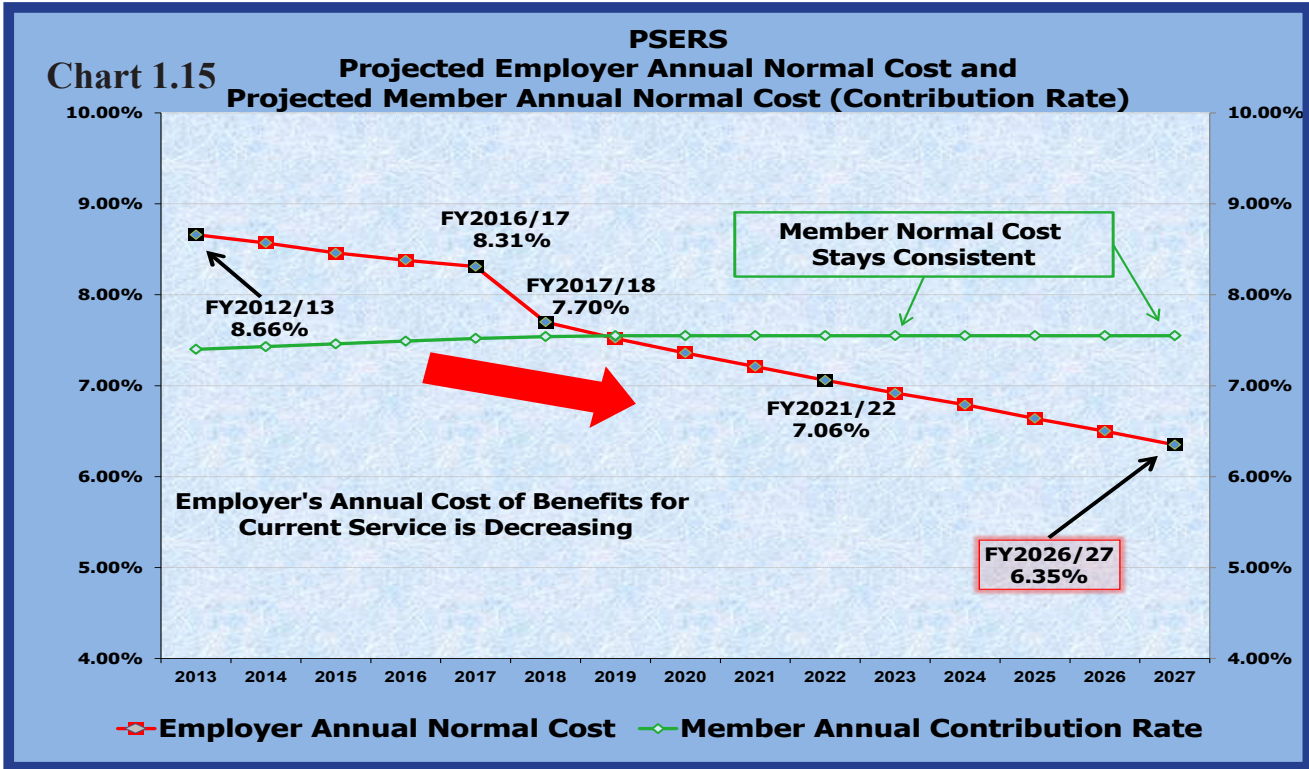
Chart 1.14 displays the components of PSERS' projected employer contribution rate of 32.57% in FY 2017-18. The majority of the rate, approximately 75%, is dedicated toward paying the cost of past service. The employers' cost for current service is a much smaller portion of the contribution rate and is projected to decrease each year as more Act 120 members join the System. The cost structure of PSERS' new members under Act 120 is low and the shared risk provisions shift a portion of the investment risk to active members giving PSERS a defined contribution element. Essentially, Act 120 provides the members with a defined benefit plan, which is both adequate and secure, and provides the employers with a low cost employee pension benefit funded in large part by the members who have also assumed some of the investment risk.



**Employer Contribution Rate**  
(continued)

**Act 120 Employer Costs**

As Chart 1.15 depicts, the employer normal cost decreases over time as Act 120 members replace retiring pre-Act 120 members. The employer normal cost of current benefits earned by Act 120 members is less than 3% of payroll which is less than 65% of the normal cost for pre-Act 120 members. This represents a significant cost reduction for the employers. Chart 1.15 projects the employer normal cost to be 6.35% in FY 2026-27 when over 50% of active employees will be Act 120 members.



**The Commonwealth’s Department of Education School Employees Retirement Appropriation**

The Commonwealth provides for its share of contributions to PSERS within the Department of Education budget. On average, the Commonwealth pays 56% of total employer contributions and employers pay for 44%. Table 1.10 illustrates the projected amounts of the Commonwealth’s Appropriation for FY 2017-18 through FY 2021-22. As depicted, the Commonwealth’s share of contributions are starting to level out as the year-over-year increases are smaller each year.

	----- Projected -----				
	<u>2017-18</u>	<u>2018-19</u>	<u>2019-20</u>	<u>2020-21</u>	<u>2021-22</u>
School Employees’ Retirement	\$ 2.304	\$ 2.514	\$ 2.683	\$ 2.803	\$ 2.911

## Employer Contribution Rate (continued)

### Legislative Pension Proposal Assistance

Throughout 2016, PSERS staff was actively engaged in providing actuarial data, legislative analyses and related technical information to members of the General Assembly and Executive Branch Officials on a range of pension policy proposals while remaining policy neutral. PSERS incurred over \$320,000 in outside actuarial services from PSERS' actuary solely for numerous pension policy proposals during 2016.

PSERS staff also spent hundreds of hours on multiple variations of pension policy proposals. The cost work performed internally by PSERS staff saved over \$100,000 in outside actuarial fees in 2016. PSERS legal staff also drafted hundreds of pages of draft legislation for numerous pension policy proposals.

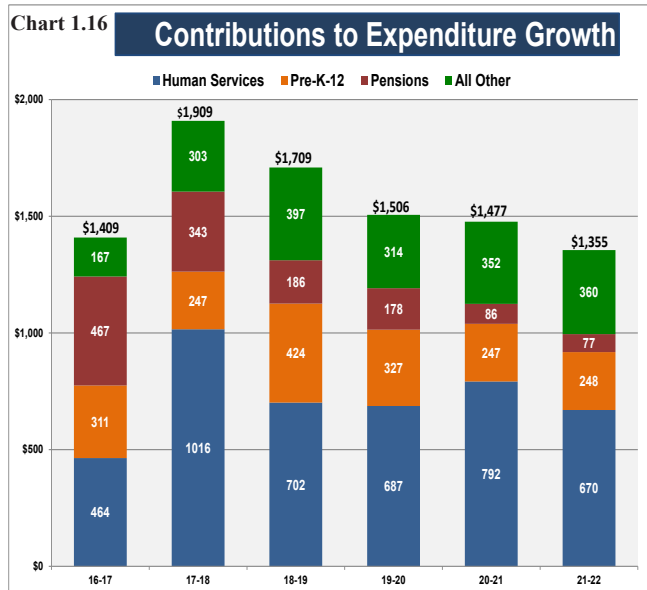
PSERS will continue to cooperate with the General Assembly in its role as a technical expert in providing fact-based information to support efforts in determining effective pension policy. As in the past, PSERS will assist in drafting technically correct provisions and providing input on funding and operational aspects of various proposals, while remaining policy neutral on plan design elements of legislative proposals.

### Recap

Act 120 reduced the employer's annual cost of benefits for members hired after June 30, 2011 by over 32% via member benefit reductions. However, a significant unfunded liability for service already rendered by pre-Act 120 members still remains to be paid. To address the underfunding which had taken place since FY 2000-01, Act 120 also included rate collars designed to systematically increase the employer contribution rate over several years to raise the funding to actuarially required levels. Now that this objective has been achieved, the rate collars no longer apply.

At its December 2016 meeting, PSERS Board of Trustees certified an annual contribution rate of 32.57% for FY 2017-18 which continues to put PSERS on the path towards full funding. For the second consecutive year, the Commonwealth's employer contribution rate provides 100% of the actuarially required rate based on sound actuarial practices and principles. After July 1, 2016, no additional pension debt will be added due to underfunding. Future contribution rates begin to level off after FY 2017-18 which will reduce budgetary pressure on the Commonwealth and school districts in FY 2018-19 and beyond. Future employer contribution rates will remain elevated for many years to compensate for 15 years of underfunding and to fully pay down the unfunded liability.

The Pennsylvania Independent Fiscal Office (IFO) has recognized the Commonwealth's progress on its pension funding issues. The IFO noted in its November 15, 2016 presentation that "Pension contribution growth decelerates dramatically after FY 2017-18." Also as shown in Chart 1.16, after FY 2017-18 pensions are no longer a major cost driver of Commonwealth expenditure growth.



### PSERS is reaching a Turning Point under Act 120

After FY 2017-18, PSERS' funded ratio is projected to slowly improve after declining steadily since FY2001. As a result of these funding improvements, bond rating agencies have noted that the pension contribution increases borne by school employers and the Commonwealth will become more manageable. This is very important to note as the bond rating agencies' outlooks impact the Commonwealth's borrowing costs. This turning point represents a major step forward in PSERS' financial recovery and, as noted by Moody's, PSERS is on a path to full pension funding.

"Moody's Investors Service has revised the Commonwealth of Pennsylvania's outlook to stable from negative...Further, the Commonwealth is on a solid (though slow) path toward full funding of its pension plans. Favorably, the most difficult phase of pension contribution ramp-ups is now in the rearview mirror, and the magnitude of annual pension contribution increases will be more manageable in the coming years."



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