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Commitment to Pennsylvania-Based Investment Managers (as of December 31, 2012)

The members of the Board and Staff are fiduciaries and must act in the interests of the members of the System and for the exclusive benefit of the System's members. In creating the investment program, the Board hires both external investment managers and internal investment managers. The Board has determined that it is in the best interest of the System to manage assets internally when (1) the System's staff has the proven ability to internally manage portfolios at least as well as the external investment managers, and (2) the cost of investing those assets is no greater than the cost that would have been incurred to have those assets externally managed. The Board will also consider the diversification benefits that may be achieved by allocating assets to external portfolio managers even when conditions (1) and (2) are met.

The Board evaluates external managers based on a variety of factors, including, (1) their expected future performance; (2) their investment philosophy and style; (3) their investment process; (4) their personnel; (5) cost; and (6) how their philosophy and style fits in with the existing investment structure. In selecting external managers, PSERS will show preference to Pennsylvania-based potential managers that demonstrate similar strengths to alternative managers without a Pennsylvania nexus.

PSERS has shown a tremendous commitment to Pennsylvania's financial services industry by having assets managed by firms based in Pennsylvania or by firms with offices in Pennsylvania. In FY 2012, investment manager fees paid to external firms managing PSERS' assets from offices located in Pennsylvania amounted to \$ 23.9 million, or 5.1% of the total external investment manager fees. The following is a list of assets either managed internally by PSERS or by external managers with headquarters or offices located in Pennsylvania, as of December 31, 2012:

Pennsylvania-Based Manager	Market Value (in millions)	Percentage of the Fund
Internal Management		
US. Equity:		
S&P 500 Index	\$ 2,973.4	6.1%
S&P 400 Index	175.0	0.4%
S&P 600 Index	176.3	0.4%
Non-U.S. Equity:		
ACW ex-U.S. Index	2,159.8	4.4%
Emerging Markets Equity	208.5	0.4%
Fixed Income:		
PSERS TIPS	1,364.6	2.8%
PSERS Active Aggregate	1,179.0	2.4%
PSERS U.S. Long Treasuries	324.5	0.7%
Cash & Cash Equivalents:		
STIF	2,673.7	5.5%
Commodities:		
PSERS Gold Swap	(5.8)	a 0.0%
Private Markets:		
Internal Program	<u>36.5</u>	0.1%
Total Internal Management	11,265.5	23.0%
External Management		
U.S. Equity:		
Conestoga Capital Advisors	48.6	0.1%
Fixed Income:		
LBC Credit Partners II, LP	250.4	0.5%

a - The Market Value represents the net payable on swap contracts.

Commitment to Pennsylvania-Based Investment Managers (as of December 31, 2012) (continued)

Pennsylvania-Based Manager	Market Value (in millions) (1)	Percentage of the Fund
Real Estate:		
BPG Investment Partnership V, L.P.		
BPG Investment Partnership VI, L.P.		
BPG Co-Investment Fund		
Charter Oak Advisors, Inc.		
Exeter Industrial Value Fund II, L.P.		
GF Management, Inc.		
Grosvenor Fund Management U.S., Inc.		
LEM Real Estate Mezzanine Fund II, L.P.		
Lubert-Adler Real Estate Fund III		
Lubert-Adler Real Estate Fund IV		
Lubert-Adler Real Estate Fund V		
Lubert-Adler Real Estate Fund VI		
Subtotal Real Estate:	\$ 451.9	0.9%
Private Equity and Debt:		
Graham Partners, LP		
Incline Equity Fund III, L.P.		
PNC Equity Partners II, L.P.		
PNC Equity Partners, L.P.		
Milestone Partners II, L.P.		
Milestone Partners III, L.P.		
Milestone Partners IV, L.P.		
Versa Capital Fund I, L.P.		
Versa Capital Fund II, L.P.		
Subtotal Private Equity and Debt:	\$ 380.5	0.8%

(1) Market values for individual Real Estate and Private Market investments are not being disclosed at this time.



Commitment to Pennsylvania-Based Investment Managers (as of December 31, 2012) (continued)

Pennsylvania-Based Manager	 ket Value illions) (1)	Percentage of the Fund
Venture Capital:		
Adams Capital Management, LP		
Co-Investment 2000 Fund, L.P.		
Co-Investment Fund II, L.P.		
Cross Atlantic Technology Fund II		
Cross Atlantic Technology Fund, L.P.		
LLR Equity Partners II, L.P.		
LLR Equity Partners III, L.P.		
LLR Equity Partners, L.P.		
NEPA Venture Fund II		
Novitas Capital , L.P.		
Novitas Capital II, L.P.		
Quaker BioVentures II, L.P.		
Quaker Bio-Ventures, L.P.		
SCP Private Equity Partners I, L.P.		
SCP Private Equity Partners II, L.P.		
TDH III, L.P.		
Subtotal Venture Capital:	\$ 485.4	1.0%
Total External Management	1,616.8	3.3%
Total Investment Portfolios Managed in PA	\$ 12,882.3	26.3%

(1) Market values for individual Real Estate and Private Market investments are not being disclosed at this time.





Summary of Investments in Pennsylvania

(as of December 31, 2012)

Where investment characteristics including yield, risk, and liquidity are equivalent, the Board's policy favors investments that have a positive impact on the economy of Pennsylvania. The Board, in managing the investment portfolio, will also be cognizant of concentration risk to any one region, including Pennsylvania. The Fund will continue to seek investments in Pennsylvania-based companies when the investment characteristics are equivalent to other favorable investments, subject to diversification considerations.

The following is a table of Pennsylvania-based investments and other statistics at December 31, 2012 (\$'s in millions):

and a Co-Investment Fund) managed by BPG Properties, Ltd., located in Philadelphia. PSERS has committed \$550 million in five funds (Lubert-Adler Funds II, III, IV, V and VI) managed by Lubert-Adler, and a \$75 million commitment in one fund (LEM Real Estate Mezzanine Fund II) managed by LEM Mezzanine Partners, both located in Philadelphia. Finally, PSERS has committed \$75 million in one fund (Exeter Industrial Value Fund II) managed by Exeter Property Group, located in Plymouth Meeting.

As of December 31, 2012, PSERS' Pennsylvania real estate portfolio contained 64.1 million square feet of office, retail, and warehouse space and 37,991 apartment, hotel and condominium units. The gross market value of the Pennsylvania real estate portfolio investments totaled \$2.6 billion, of which PSERS' ownership share was \$128.0 million. The portfolio contains numerous notable Pennsylvania real estate investments, including:

Asset Class		tal PA et Value Portion)	Mari	otal PA ket Value Invested)	# of People Employed	Payroll
U.S. Equities	\$	83.7	\$	83.7	*	\$ *
Fixed Income		27.0		27.0	*	*
Private Real Estate		128.0		2,559.0	1,530	48.4
Private Markets:						
Venture Capital		182.5		636.6	4,270	125.0
Private Equity		977.1		18,548.9	37,632	1,095.3
Private Debt		<u>86.1</u>		<u>614.8</u>	<u>4,798</u>	_125.6
Total	\$ =	1,484.4	\$ _	22,470.0	<u>48,230</u>	\$ 1,394.3

^{*} Statistics for publicly traded companies not included due to the difficulty in obtaining the information.

U.S. Equities

PSERS invests in the stock of Pennsylvania-based companies through the various U.S. Equity portfolios managed by external and internal portfolio managers. PSERS has always had substantial investments in large national firms located in Pennsylvania, a list of which is included later in this section.

Fixed Income Securities

PSERS invests in the debt of Pennsylvania-based companies through the various Fixed Income portfolios managed by external and internal portfolio managers. PSERS has always had substantial investments in large national firms located in Pennsylvania, a list of which is included later in this section.

Private Real Estate

PSERS has investments in limited partnerships that have invested in Pennsylvania real estate properties. PSERS has committed \$207.5 million in three funds (Fund V, Fund VI,

- 5 North Fifth Street PSERS owns a 100% interest in this major downtown Harrisburg, PA office building that contains 70,693 square feet of office space. The building is PSERS' headquarters and is fully occupied by PSERS.
- Brixmor Blackstone Real Estate Partners VI made an investment in a nationwide portfolio of neighborhood shopping centers, comprising over 90 million square feet of gross leasable area in 39 states. There are approximately 40 centers comprising over 6.75 million square feet of this portfolio located in Pennsylvania.
- The National at Old City This condominium complex is located in Philadelphia, PA. The National at Old City consists of 153 units and contains 208,919 square feet of condominium space. This investment was made by SilverPeak Legacy Partners II.
- Kenmawr This investment is a part of a long-term joint venture relationship between Lubert-Adler

Summary of Investments in Pennsylvania

(as of December 31, 2012) (continued)

and Philadelphia Management and Companies (PMC) that specializes in adaptive re-use of vacant buildings into stable, high quality rental apartments within and outside of Pennsylvania. The Kenmawr investment is located in Pittsburgh, PA and consists of 206 apartment units and 44 commercial units. The Kenmawr investment was made in Lubert-Adler Real Estate Funds V and VI.

- Brandywine Office Portfolio The Brandywine Office Portfolio consists of 29 properties totaling 1.6 million square feet and is located in the Lehigh Valley. This investment was made by DRA Growth and Income Fund VI.
- The Franklin The Franklin is an 18-story, mixeduse property with 125,788 square feet of medical office and retail space, in addition to 412 residential units. This investment is located in Philadelphia, PA and was made by AG Core Plus Realty Fund III.

Venture Capital

PSERS' Venture Capital program has committed \$2.6 billion to 54 partnerships since the inception of the program. In addition to the current international scope of venture capital investments, a historical objective of this program has been to target partnerships that demonstrate an ability to invest in Pennsylvania-based companies. Selected partnerships offer diversification according to geographic region and financing stage within Pennsylvania. From the inception of this program to December 31, 2012, 27 of the 54 venture capital partnerships were headquartered in Pennsylvania.

PSERS is generally the lead investor in many of the venture capital funds in which PSERS invests. As a lead investor, PSERS provides Pennsylvania with capital from numerous out-of-state investors. As of December 31, 2012, PSERS' Venture Capital partnerships invested in 156 Pennsylvania locations employing 4,270 employees with a combined payroll of \$125.0 million. The market value of these investments was \$636.6 million, of which PSERS' share was \$182.5 million.

A key objective of PSERS' venture capital program is to attract both national and regional funds into the Pennsylvania small business community. Venture capital investments serve to accelerate economic growth in both the business sector and the community due to an increase in employment and revenues within the Commonwealth. Following are a sample of Pennsylvania companies invested in by PSERS through the Venture Capital program:

- E-Duction, Inc., Blue Bell, PA E-Duction was launched to capitalize on a growing trend that has emerged in payment technology payroll deduction. In 2002, E-Duction introduced the first payroll deduction card that gives employees interest-free purchasing power, 365 days per year. Employees purchase goods and services, at no interest, everywhere credit cards are accepted. Payments are deducted over a series of paychecks. E-Duction earns income from annual card member fees, interchange fees from every transaction, and preferred merchant promotional fees. Novitas Capital made this investment.
- Garnet BioTherapeutics, Inc. (formerly Neuronyx, Inc.), Malvern, PA Garnet is a clinical state biotechnology company focused on applications with stem cells derived from adult bone marrow. Garnet uses genetically modified cells for specific applications in the development of neuroprotective agents for use in the treatment of major diseases. Garnet has developed a proprietary process for isolating and expanding adult bone marrow stem cells to provide extremely large, homogeneous populations with desirable therapeutic characteristics. Novitas Capital made this investment.
- Pet360 Inc. (formerly PetFood Direct), Montgomeryville, PA Pet360 is one of the largest online retailers of pet food and related products. With over 11,000 products and 400 brands, the Company meets the needs of pet owners by offering selection, discount prices and convenient delivery. The Company also provides value-added services for its customers, including an auto-ship program and information on pet healthcare and nutrition. LLR Equity Partners II made this investment.
- Strategic Distribution, Inc., Bristol, PA. Strategic Distribution, Inc. provides outsourced maintenance, repair and operations supply chain management services. Strategic Distribution, Inc. manages the procurement and inventory management of more than 2.0 million maintenance, repair and operations SKUs through the combination of customer integrated technology, on-site professional staff and centralized, supplier-agnostic sourcing and operations departments. LLR Equity Partners III made this investment.

Private Equity

PSERS' Private Equity program has committed \$17.1 billion to 119 partnerships since the inception of the program. PSERS is the lead investor in many of the private equity funds in which it invests. As a lead investor, PSERS provides Pennsylvania with capital from numerous out-of-state investors. As of December 31, 2012, PSERS'

Summary of Investments in Pennsylvania

(as of December 31, 2012) (continued)

Private Equity partnerships invested in 1,194 Pennsylvania locations employing 37,632 employees with a combined payroll of \$1,095.3 million. The market value of these investments was \$18.5 billion, of which PSERS' share was \$977.1 million. From the inception of this program to December 31, 2012, 8 of the 119 partnerships were headquartered in Pennsylvania. The following companies are a sample of Pennsylvania investments funded through PSERS' private equity partnerships:

- <u>AirClic</u>, Philadelphia, PA AirClic is a global provider of mobile software products that improve the performance of an organization's supply chain, logistics and field services operations. The company has more than 500 global customers across multiple vertical markets. Using AirClic-enabled wireless devices, managers and workers can easily and economically capture, exchange, and access critical data that represent people, assets and activity. AirClic is driving new levels of accountability and improved customer service for many of the world's leading companies. Edgewater Private Equity Fund III made this investment.
- CODi, Inc., Harrisburg, PA CODi, Inc. is a provider of lightweight, high-quality laptop computer cases and information technology accessories to Fortune 500 companies. CODi's accumulated knowledge dealing with the "corporate road warrior" allows the company to uniquely service corporate and consumer needs with precision. CODi uses a direct sales force to its competitive advantage, allowing a one-stop solution for customers in a market where distributors and value-added resellers are the norm. This one-stop approach allows high profitability as it captures up to three levels of contributions margins. The investment was brought about through Milestone Partners II.
- Gorell Enterprises, Indiana, PA Gorell Enterprises is a manufacturer of specially engineered, custom-manufactured vinyl windows for replacement and new-construction applications, patio doors, aluminum storm windows and doors, sunrooms, and conservatories. Gorell is well known in the industry for placing strong emphasis on designing and manufacturing strong, durable high-quality products. Gorell was the national winner of the 2006 ENERGY STAR® "Sustained Excellence" Award, given for their new window models to make homes more energy efficient as well as secure. PNC Equity Partners made this investment.

Interface Solutions, Inc., Lancaster, PA - Interface Solutions Inc. (ISI) is a leading manufacturer of fiber-based flooring felt and intermediate gasket materials and a fabricator of finished fiber, graphite and metal gaskets. Acquisitions, expansions, and capital investments in research facilities empower ISI to offer both OEM and aftermarket customers unmatched technical and design support and application testing. ISI has an extraordinary depth of experience and engineering knowledge, with roots to predecessor companies dating back over 90 years. ISI was created as an independent, private corporation in 1999, formed from the organization previously known as Armstrong Industrial Specialties Inc. (AISI). PNC Equity Partners L.P. made this investment.

Private Debt

PSERS' Private Debt program has committed \$4.5 billion to 29 partnerships since the inception of the program. PSERS is the lead investor in many of the private debt funds in which PSERS invests. PSERS has committed \$375 million to the three Pennsylvania-based Versa Capital Partners funds (formerly known as Chrysalis Capital Partners) managed by Versa Capital Management, located in Wayne, Pennsylvania. As of December 31, 2012, PSERS' private debt partnerships invested in 179 Pennsylvania locations employing 4,798 employees with a combined payroll of \$125.6 million. The market value of these investments was \$614.8 million, of which PSERS' share was \$86.1 million. From the inception of this program to December 31, 2012, 3 of the 29 private debt partnerships were headquartered in Pennsylvania.

The following companies are a sample of a Pennsylvania investments made through PSERS' Private Debt Program:

- <u>David's Bridal</u>, Ardmore, PA David's Bridal is the leading bridal gown and bridal accessory retailer in the United States operating through the David's Bridal and Priscilla's of Boston divisions. The David's Bridal division is a value-oriented provider while Priscilla's of Boston is a luxury brand that caters to the more affluent segments of the market. This investment was made through New York Life Investment Management Mezzanine Partners II.
- <u>DynaVox</u>, Pittsburgh, PA DynaVox, a former division of Sunrise Medical spun-out in May 2004, is the market leader in the alternative and augmentative communication industry, developing and selling devices and software for individuals affected by speech disabilities resulting from traumatic, congenital or degenerative conditions. This investment was made through New York Life Investment Management Mezzanine Partners I.

Summary of Investments in Pennsylvania (as of December 31, 2012) (continued)

- Simplexity (Adeptio INPC Holdings, LLC), Wayne, PA – Simplexity is the leading independent online seller of wireless services, representing all major wireless carriers and selling primarily through proprietary websites (principally its flagship site, www.wirefly.com) and partner websites (e.g. Radioshack.com, Staples.com, Overstock.com). This investment was made through Versa Capital Fund I.
- Keane & Sons Drilling Corp., Lewis Run, PA Keane & Sons Drilling provides oilfield services in the Appalachian Basin, including top hole drilling and hydraulic fracturing services to major operators in the Marcellus Shale basin and across the U.S. This investment was made through Cerberus Institutional Partners, L.P. Series Four.



Pennsylvania-Based Publicly Traded Stocks (as of December 31, 2012)

Security	Shares Outstanding	Market Value
Air Products & Chemicals, Inc.	50,306	\$ 4,226,710
Airgas, Inc.	14,204	1,296,683
Alcoa, Inc.	215,649	1,871,833
Allegheny Technologies, Inc.	38,085	1,156,261
Amerigas Partners	14,200	550,108
Amerisourcebergen Corp.	47,582	2,054,591
Comcast Corp. Class A	543,585	19,891,270
Consolidated Energy, Inc.	222,653	7,147,161
Crown Holdings, Inc.	53,506	1,969,556
Dentsply International, Inc.	28,680	1,136,015
Endo Pharmaceuticals Holdings, Inc.	35,665	935,497
EQT Corp.	59,607	3,515,621
Federated Investors, Inc. Class B	100,206	2,027,167
FMC Corp.	27,763	1,624,691
Five Below, Inc.	13,285	425,651
H.J. Heinz Company	64,795	3,737,376
Hershey Company	30,219	2,182,416
Interdigital, Inc.	177,538	7,295,036
Kulicke and Soffa Industries, Inc.	48,000	575,520
Matthews International Corp.	3,910	125,511
Mine Safety Appliances Company	4,415	188,565
Mylan Labs, Inc.	82,349	2,260,480
PNC Financial Services Group, Inc.	106,867	6,231,415
PPG Industries, Inc.	39,303	5,319,661
PPL Corp.	117,545	3,365,313
Triumph Group, Inc.	15,387	1,004,771
United States Steel Corp.	29,155	695,347
Urban Outfitters, Inc.	22,113	870,368
Total		\$ <u>83,680,594</u>

Pennsylvania-Based Bonds (as of December 31, 2012)

	Interest Rate	Maturity		
Security	(%)	Date	Par Value	Market Value
Airgas, Inc.	7.125	10/01/2018	1,920,000	\$ 2,049,658
Alcoa, Inc.	5.400	04/15/2021	430,000	447,548
Allegheny Ludlum Corp.	6.950	12/15/2025	300,000	353,817
Allegheny Technologies, Inc.	5.950	01/15/2021	690,000	764,361
Allegheny Technologies, Inc.	9.375	06/01/2019	885,000	1,125,968
Allentown PA Taxable	0.000	10/01/2024	505,000	274,806
Allentown PA Taxable	0.000	10/01/2025	3,660,000	1,860,890
Amerigas Partners	6.250	08/20/2019	1,245,000	1,332,150
Comcast Corp.	6.400	03/01/2040	302,000	391,187
Comcast Corp.	6.450	03/15/2037	180,000	230,974
Comcast Corp.	5.875	02/15/2018	200,000	241,010
Comcast Corp.	5.650	06/15/2035	40,000	46,933
Comcast Corp.	6.950	08/15/2037	30,000	40,682
Consolidated Energy, Inc.	8.000	04/01/2017	2,170,000	2,349,025
Endo Pharmaceuticals Holdings, Inc.	7.000	07/15/2019	530,000	565,113
H.J. Heinz Company	5.350	07/15/2013	2,340,000	2,399,647
Hershey Company	5.000	04/01/2013	250,000	252,818
Kennametal, Inc.	2.650	11/01/2019	1,500,000	1,502,205
Koppers, Inc.	7.875	12/01/2019	1,245,000	1,369,500
Mylan, Inc.	7.625	07/15/2017	1,175,000	1,320,547
Mylan, Inc.	7.875	07/15/2020	1,085,000	1,282,210
New Enterprise Stone & Lime Company	11.000	09/01/2018	2,180,000	1,635,000
PHEAA	0.915	04/25/2019	1,906,984	1,912,056
West Penn Power Company	5.950	12/15/2017	2,000,000	2,374,060
Wyoming PA Area School District	5.280	09/01/2014	875,000	880,819
Total				\$ <u>27,002,984</u>

Real Estate Separate Account Pennsylvania Properties (as of December 31, 2012)

Real Estate Separate Account Pennsylvania Properties				
Property	Location	Description	Manager	
5 North Fifth Street	Harrisburg	5 story office building	Grosvenor	
(PSERS headquarters)				
Total market value (unaudi	ited) of Pennsylvania-base	ed properties was \$7.5 million as of D	ecember 31, 2012.	



Pennsylvania-Based Private Equity/Venture Capital/Private Debt General Partners

(Dollar Amounts in Millions)

(Since the inception of the program as of December 31, 2012)

PSERS Maximum				
Partnership	Location	Capital Commitment		
Adams Capital Management, L.P.	Sewickley	\$ 12.5		
APA/Fostin Venture Fund I (closed)	King of Prussia	20.0		
CEO Venture Fund I (closed)	Pittsburgh	1.0		
CEO Venture Fund II (closed)	Pittsburgh	15.0		
Co-Investment 2000 Fund, L.P.	Wayne	135.0		
Co-Investment Fund II, L.P.	Wayne	135.0		
Commonwealth Venture Partners I (closed)	Philadelphia	20.0		
Commonwealth Venture Partners II (closed)	Philadelphia	10.0		
Cross Atlantic Technology Fund, L.P.	Radnor	30.1		
Cross Atlantic Technology Fund II, L.P.	Radnor	21.1		
Graham Partners Investments, L.P.	Newtown Square	56.7		
Incline Equity Partners III (PSERS), L.P.	Pittsburgh	43.3		
Keystone Minority Capital Fund (closed)	Philadelphia	0.1		
Keystone Venture Fund IV (closed)	Philadelphia	7.8		
LLR Equity Partners, L.P.	Philadelphia	62.5		
LLR Equity Partners II, L.P.	Philadelphia	75.0		
LLR Equity Partners III, L.P.	Philadelphia	187.5		
LLR Equity Partners IV, L.P.	Philadelphia	200.0		
Loyalhanna Venture Fund (closed)	Pittsburgh	15.0		
Milestone Partners II, L.P.	Rosemont	29.9		
Milestone Partners III, L.P.	Rosemont	60.0		
Milestone Partners IV, L.P.	Rosemont	24.3		
NEPA Venture Fund I (closed)	Bethlehem	1.0		
NEPA Venture Fund II	Bethlehem	5.0		
Novitas Capital I, L.P.	Wayne	30.0		
Novitas Capital II, L.P.	Wayne	75.0		
P/A Fund	King of Prussia	30.0		
PNC Equity Partners, L.P.	Pittsburgh	43.2		
PNC Equity Partners II, L.P.	Pittsburgh	68.1		
Quaker BioVentures, L.P.	Philadelphia	69.4		
Quaker BioVentures II, L.P.	Philadelphia	100.0		
SCP Private Equity Partners I, L.P.	Wayne	62.5		
SCP Private Equity Partners II, L.P.	Wayne	125.0		
TDH III, L.P.	Rosemont	7.4		
Technology Leaders, L.P. (closed)	Wayne	10.0		
TL Ventures III, L.P.	Wayne	50.0		
Versa Capital Partners, L.P. (f/k/a Chrysalis)	Wayne	75.0		
Versa Capital Partners II, L.P.	Wayne	150.0		
Versa Capital Partners III, L.P.	Wayne	<u> 150.0</u>		
Total		\$ 2,213.4		