



**pennsylvania**  
State Employees' Retirement System

## **2017 Financial Highlights**

*Service and stewardship since 1923.*

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# Changes in Fiduciary Net Position

(\$ millions)

	<u>2017</u>	<u>2016</u>	<u>Change</u>	
			<u>\$</u>	<u>%</u>
Net Position - Beginning	\$ 26,388	\$ 26,055		
Contributions	2,281	1,997	284	14%
Net Investment Income	4,066	1,587	2,479	156%
Less:				
Benefit Payments and Refunds	3,304	3,228	76	2%
Administrative Expenses	<u>26</u>	<u>23</u>	3	13%
Net Increase	<u>3,017</u>	<u>333</u>		
Net Position - End of Year	<u>\$ 29,405</u>	<u>\$ 26,388</u>		

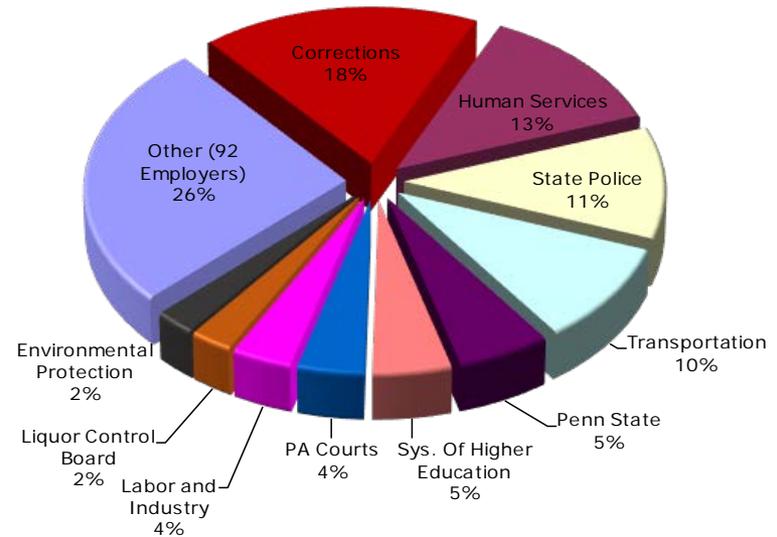
# Contribution Highlights

For the Year Ended December 31, 2017

<u>Employer</u>	<b>Employer Contributions (\$ millions)</b>	<b>Active Members<sup>1/</sup></b>
Corrections	\$ 341	<b>15,435</b>
Human Services	242	<b>16,624</b>
State Police	208	6,255
Transportation	182	<b>12,221</b>
Penn State	105	<b>6,308</b>
Sys. Of Higher Education	89	<b>4,949</b>
PA Courts	75	<b>1,874</b>
Labor and Industry	68	<b>4,103</b>
Liquor Control Board	48	4,486
Environmental Protection	46	<b>2,362</b>
Other (92 Employers)	494	<b>28,361</b>
<b>Total Employer</b>	<b>\$ 1,898</b>	<b>102,978</b>

	<b>Member Contributions (\$ millions)</b>
All 102 Employers	\$ 383
<b>Total Contributions</b>	<b>\$ 2,281</b>

**Top 10 Contributing Employers as a Percent of Total Contribution Dollars**

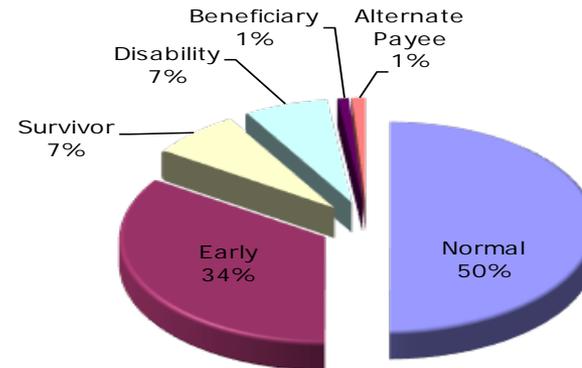


<sup>1/</sup>Bolded figures represent a decrease from prior year

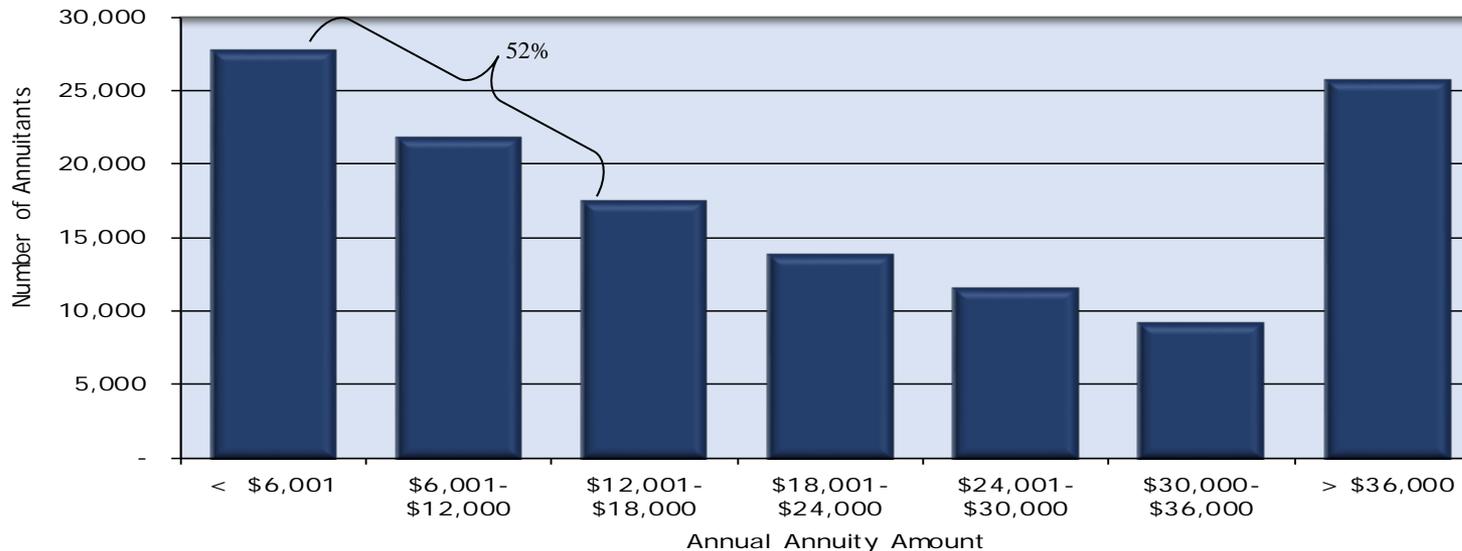
# Annuity Payroll

As of December 31, 2017

<b>Retirement Member Types</b>	<b>Number of Annuitants</b>	<b>Average Annual Annuity</b>
Normal	64,796	\$ 28,352
Early	44,288	17,747
Survivor	9,266	13,412
Disability	8,589	15,529
Beneficiary	1,124	12,370
Alternate Payee	1,410	10,350
<b>Total</b>	<b>129,473</b>	<b>22,470</b>



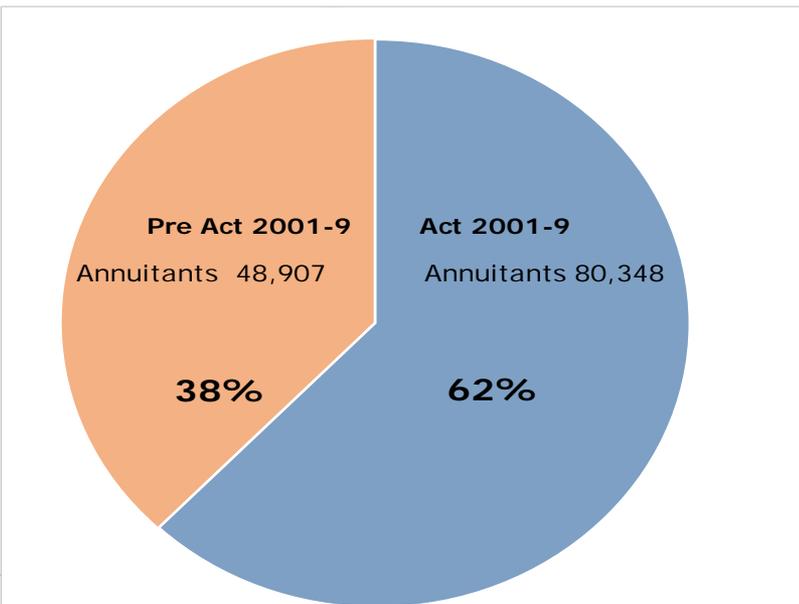
Number of Annuitants by Annual Annuity Size



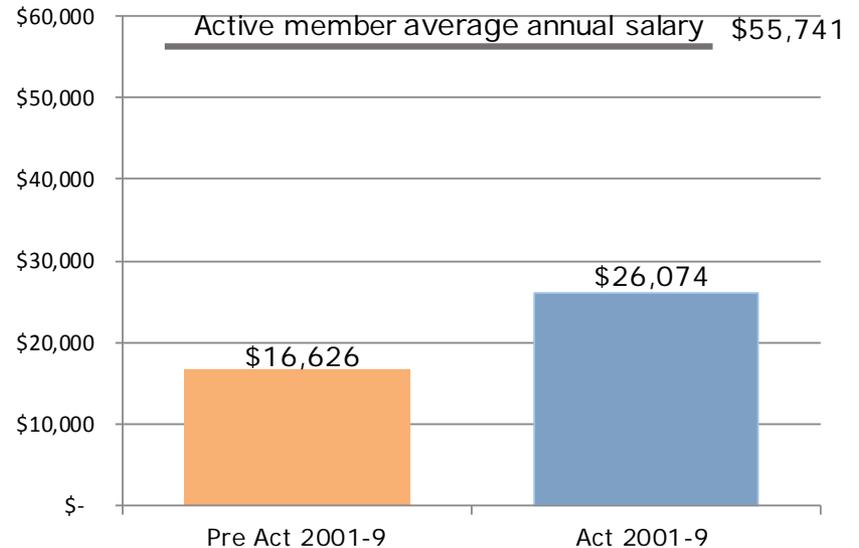
# Annuitant Profile

Number of Annuitants by Major Legislative Provision and Average Annual Pension<sup>1/</sup>

**2017 Annuitants**  
129,255



**2017 Annual Pension Amount**

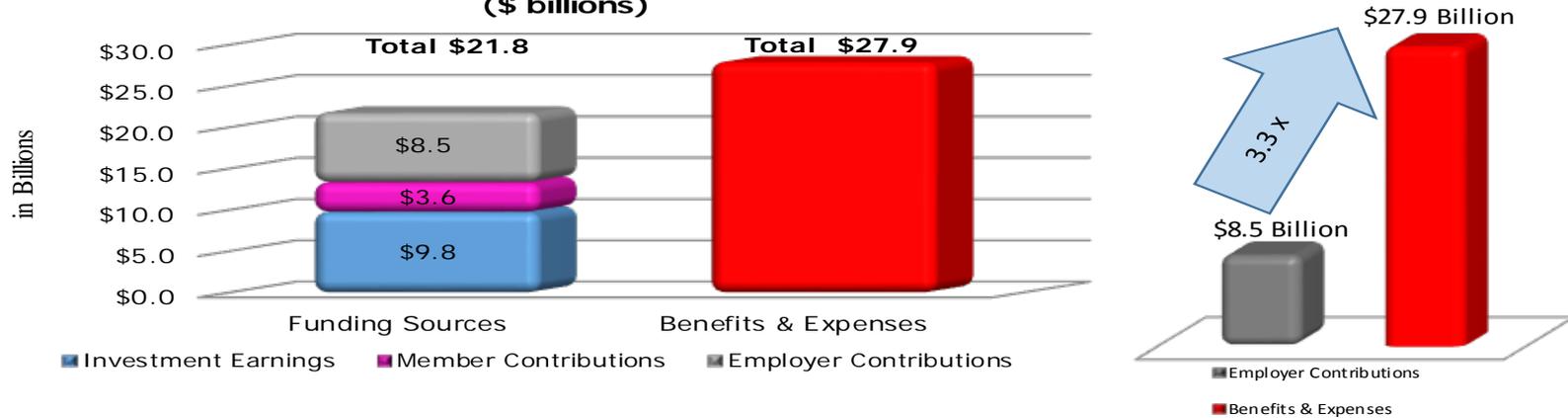


<sup>1/</sup> Does not include post Act 2010-120



# 10 Year Funding and Payment Activity

Funding by Source vs. Benefits and Expenses Paid (\$ billions)



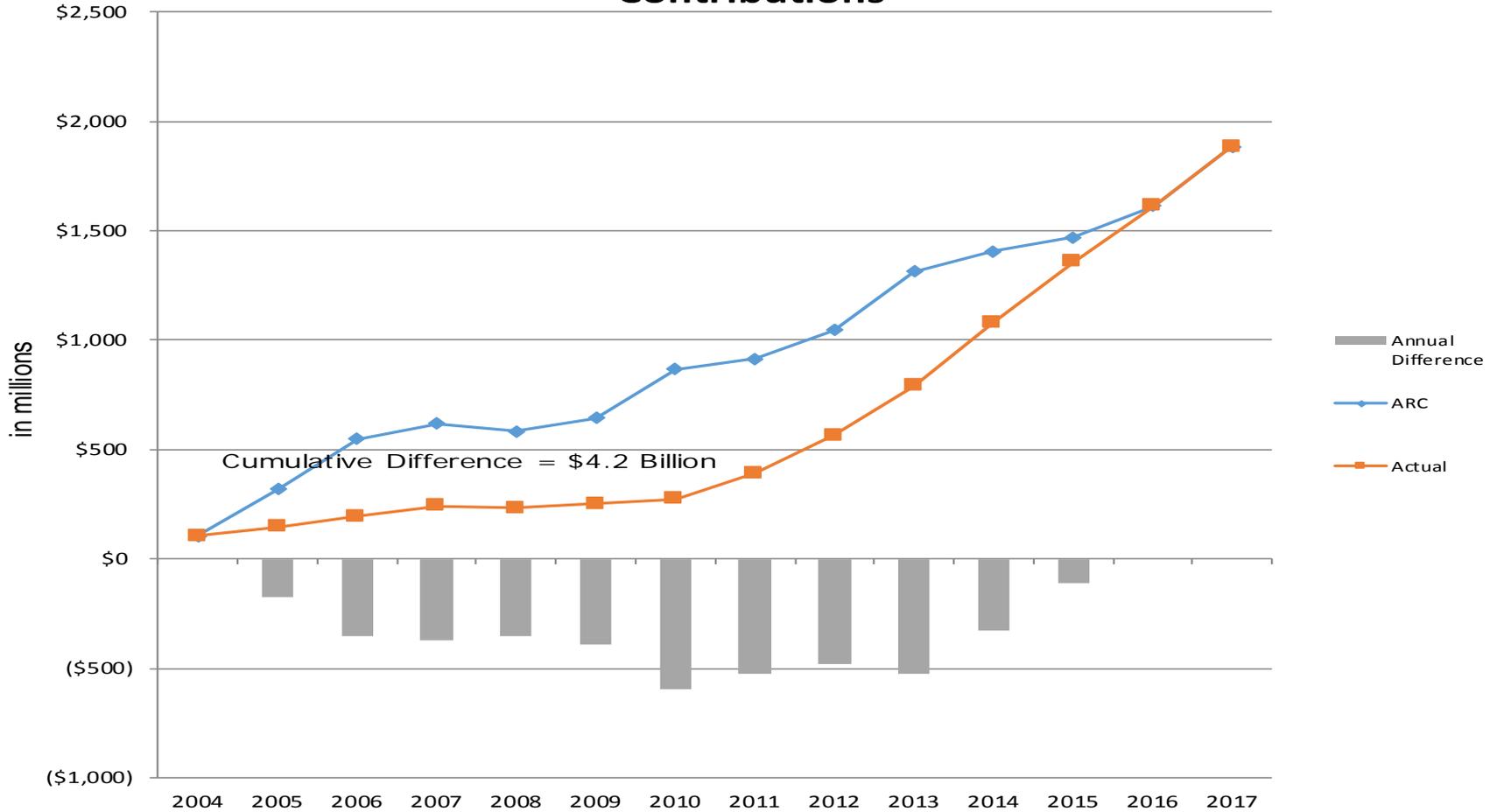
Statement of Change Activity By Year (\$ millions)

Calendar Year	Contributions			Investment Earnings	Benefits and Expenses	Fair Value
	Employer	Member	Total			
2017	\$1,898	\$383	\$2,281	\$4,066	\$(3,330)	\$29,405
2016	1,622	375	1,997	1,587	(3,251)	26,388
2015	1,360	372	1,732	88	(3,103)	26,055
2014	1,084	366	1,450	1,462	(2,968)	27,338
2013	795	352	1,147	3,724	(2,866)	27,394
2012	566	348	914	2,794	(2,696)	25,389
2011	392	351	743	480	(2,732)	24,377
2010	273	349	622	3,076	(2,474)	25,886
2009	253	349	602	3,561	(2,297)	24,662
2008	235	337	572	(11,061)	(2,231)	22,796
10 Yr. Total	\$8,478	\$3,582	\$12,060	\$9,777	(\$27,948)	

Annotations: A blue circle with '49.3% Increase' is placed between the 2008 and 2017 values for 'Benefits and Expenses'. A blue circle with '29.4% Increase' is placed between the 2008 and 2017 values for 'Fair Value'. A blue double-headed arrow with '11.3%' is between the 2017 values for 'Benefits and Expenses' and 'Fair Value'. A blue double-headed arrow with '9.8%' is between the 2008 values for 'Benefits and Expenses' and 'Fair Value'.

# Contributions

## Annual Required Contributions (ARC)<sup>1/</sup> vs. Actual Contributions



<sup>1/</sup>ARC calculation is based on methods established by General Accounting Standards Board (GASB) 25, which was superseded by GASB 67 in 2014.

# Projected Funding Levels & Contribution Rates

Projected Funding Levels and Contribution Rates<sup>1/</sup>  
(\$ millions)

Valuation Year Ended Dec 31	Funded Ratio	Fiscal Year	Funding Payroll	Employer Normal Cost Rate	Unfunded Liability Rate	Final Employer Contribution Rate <sup>3/</sup>	Employer Contribution Dollars
2017 <sup>2/</sup>	59.4	18/19	6,265	4.88	28.02	32.90	2,061
2018	57.8	19/20	6,447	1.46	30.92	32.38	2,088
2019	58.9	20/21	6,634	1.46	30.12	31.58	2,095
2020	60.8	21/22	6,826	1.46	28.86	30.32	2,070
2021 <sup>4/</sup>	68.5	22/23	7,024	9.00	21.75	30.75	2,160
2022	69.8	23/24	7,228	8.74	21.07	29.81	2,155
2023	71.0	24/25	7,437	8.49	20.43	28.92	2,151
2024	72.3	25/26	7,653	8.24	19.84	28.08	2,149
2025	73.5	26/27	7,875	8.01	19.27	27.28	2,148
2026	74.7	27/28	8,103	7.79	18.73	26.52	2,149
2027	75.9	28/29	8,338	7.58	18.19	25.77	2,149
2028	77.2	29/30	8,580	7.37	17.68	25.05	2,149

<sup>1/</sup>Other than funded ratio, rates and values are for the fiscal year beginning July 1 following the funding valuation year and do not include the Benefits Completion Plan contribution. All information on this page is based on statutory funding requirements.

<sup>2/</sup>Act 2010-120 amended the retirement code to place a permanent floor at employer normal cost after collars expire.

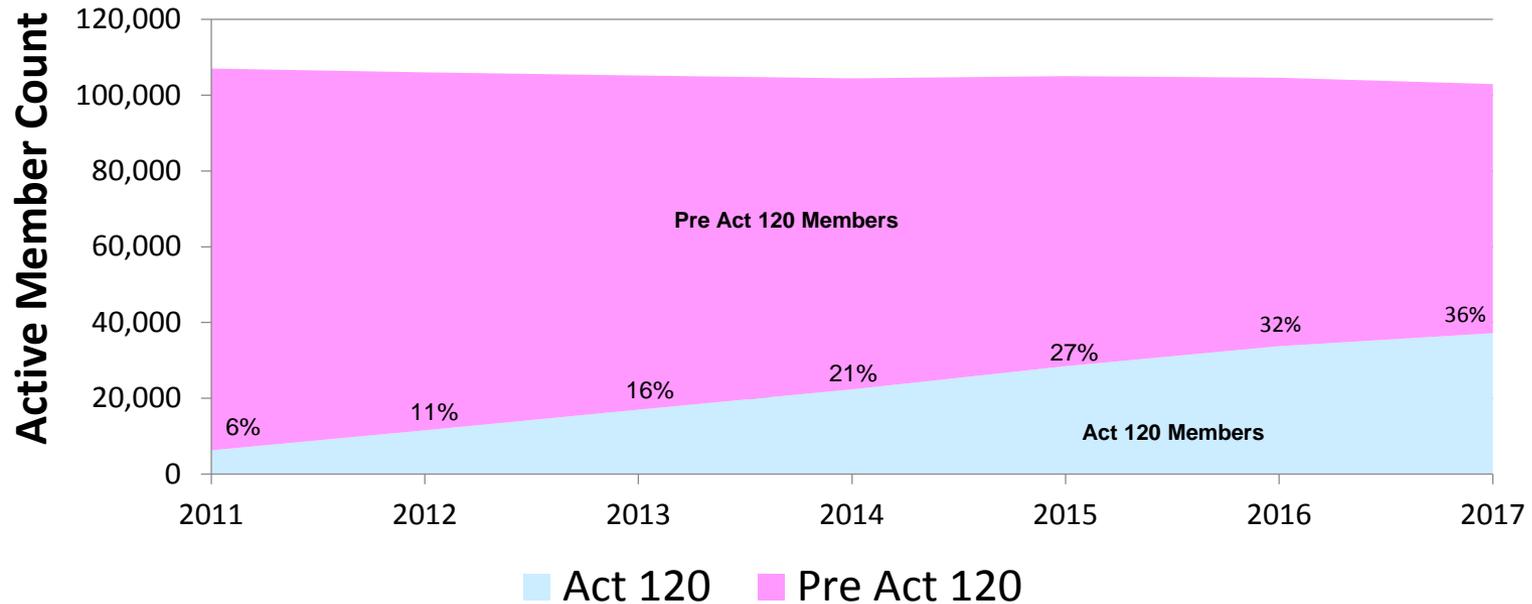
<sup>3/</sup>Includes projections for Act 2017-5.

<sup>4/</sup>Act 2017-5 amended the retirement code to change the funding method to traditional entry age.

# Active Member Profile

- As of December 31, 2017, total active membership was 102,978.
- Act 2010-120 (Act 120) membership totaled 37,155, or 36% of total active membership.
- Of the total Act 120 members, 5,100 or 14% of Act 120 membership have selected the higher 2.5% benefit accrual, or class A-4 status.

## Act 120 Members as a % of Total Membership



# GASB 67

- In 2014, SERS implemented the Governmental Accounting Standards Board (GASB) Statement No. 67
- GASB 67 significantly revised financial reporting for pension plans
- Standardized actuarial cost method to be used in calculating the total pension liability and net pension liability
- Standardized asset valuation methods and amortization periods
- Developed stricter guidelines for formulating the discount rate

<b>As of December 31, 2017</b>			
(\$ millions)			
GASB 67 - Accounting Valuation		Funding Valuation	
Total Pension Liability (TPL)	\$ 46,697	Actuarial Accrued Liability (AAL)	\$ 48,439
Fiduciary Net Position	\$ 29,405	Actuarial Value of Assets	\$ 28,777
Net Pension Liability (NPL)	<u>\$ 17,292</u>	Unfunded AAL	<u>\$ 19,662</u>
Fiduciary Net Position/TPL	63.0%	Funded Ratio	59.4%
Fiduciary Net Position/TPL (Prior Year)	57.8%	Funded Ratio (Prior Year)	58.1%

# GASB 68

- GASB issued Statement No. 68, which was effective for fiscal years ending on or after June 30, 2015
- GASB 68 revised the required pension reporting of employers who are members of the pension system
- Required employers to report their proportionate share of net pension liability, pension expense, and deferred outflows/inflows related to pensions in the employers' financial statements
- Required the development of a proportionate share or allocation percent, using a methodology consistent with the manner in which contributions are expected to be made to the plan

**Net Pension Liability and Expense  
as of December 31, 2017**  
(\$ millions)

<u>Employer</u>	<u>Net Pension Liability (NPL)</u>	<u>Pension Expense</u>	<u>Proportionate Share of NPL</u>
Corrections	\$3,125	\$438	18%
Human Services	2,253	309	13%
State Police	1,777	266	10%
Transportation	1,712	239	10%
Penn State	984	142	6%
Sys. Of Higher Education	848	115	5%
PA Courts	650	90	4%
Labor and Industry	636	76	4%
Liquor Control Board	460	64	2%
Environmental Protection	420	57	2%
Remaining Employers	4,427	616	26%
<b>Total Employer</b>	<b>\$17,292</b>	<b>\$2,412</b>	<b>100%</b>

# Changes in Net Position Available for Benefits

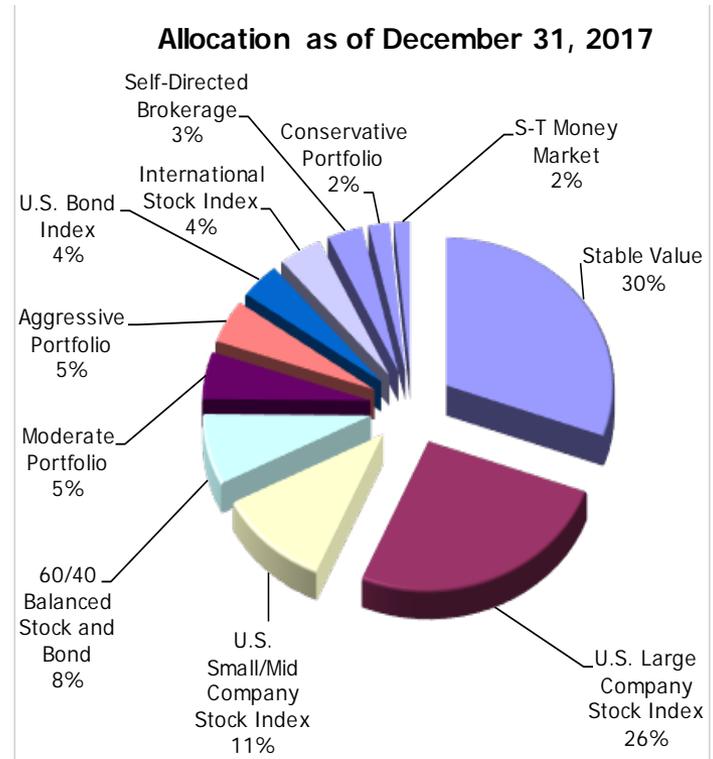
(\$ millions)

	2017	2016	Change	
			\$	%
Net Position - Beginning	\$ 3,166	\$ 2,984		
Contributions	136	136	-	0%
Net Investment Income	370	188	182	97%
Less:				
Benefits, Refunds & Transfers	172	138	34	25%
Third Party and Admin. Expenses	5	4	1	25%
Net Increase	329	182		
Net Position - End of Year	\$ 3,495	\$ 3,166		

# Fund Balances & Breakouts

## Fund Balances (\$ millions)

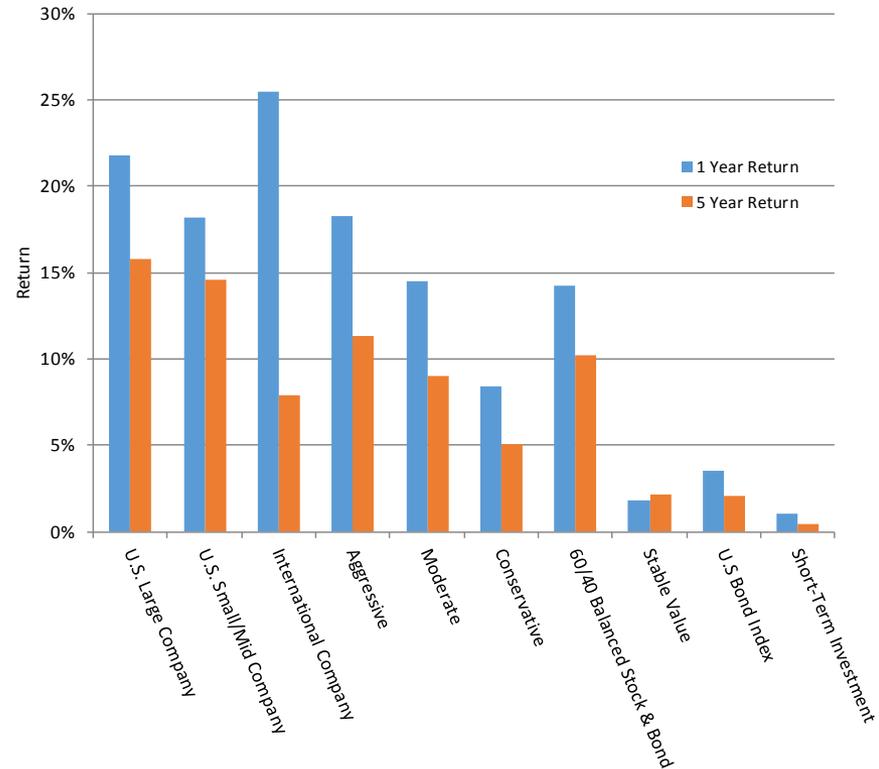
	Fund Balances		Allocation %	
	2017	2016	2017	2016
Stable Value	\$1,064	\$1,099	30%	35%
U.S. Large Company Stock Index	906	763	26%	24%
U.S. Small/Mid Company Stock Index	383	323	11%	10%
60/40 Balanced Stock and Bond	268	235	8%	7%
Moderate Portfolio	179	152	5%	5%
Aggressive Portfolio	164	131	5%	4%
International Company Stock Index	146	103	4%	3%
U.S. Bond Index	136	129	4%	4%
Self-Directed Brokerage	118	99	3%	3%
Conservative Portfolio	70	61	2%	2%
S-T Money Market	53	55	2%	2%
<b>Total</b>	<b>\$3,487</b>	<b>\$3,150</b>	<b>100%</b>	<b>100%</b>



# Fund Returns<sup>1/</sup>

As of December 31, 2017

FUND	1 Year Return	5 Year Average Return	10 Year Average Return
<b><u>EQUITY</u></b>			
U.S. Large Company Stock Index	21.8%	15.8%	8.5%
U.S. Small/Mid Company Stock Index	18.2%	14.6%	9.4%
International Company Stock Index	25.5%	7.9%	2.2%
<b><u>PROFILE</u></b>			
Aggressive Portfolio	18.3%	11.3%	6.8%
Moderate Portfolio	14.5%	9.0%	6.3%
Conservative Portfolio	8.4%	5.1%	4.6%
<b><u>ASSET ALLOCATION</u></b>			
60/40 Balanced Stock & Bond	14.3%	10.2%	7.1%
<b><u>FIXED INCOME</u></b>			
Stable Value	1.8%	2.2%	3.0%
U.S. Bond Index	3.5%	2.0%	3.9%
<b><u>CASH</u></b>			
Short-Term Investment	1.1%	0.4%	0.6%



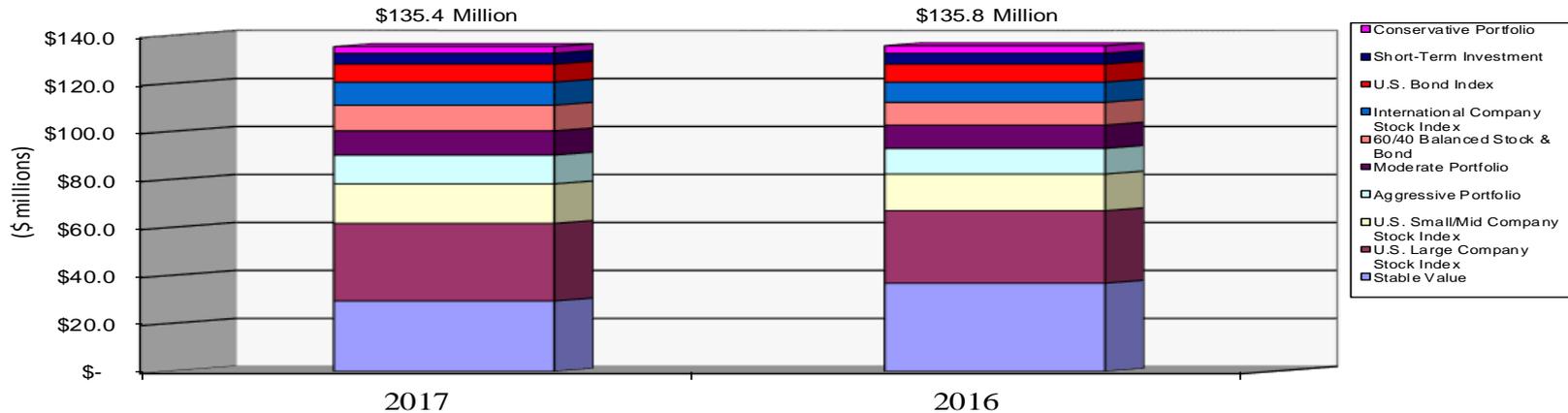
<sup>1/</sup>Returns shown on a Net-of-Fee basis

# Contributions by Fund

For the Years Ended December 31, 2017 and 2016  
(\$ millions)

Fund	2017	2016	Increase/ (Decrease)	% Change
Stable Value	\$ 29.4	\$ 36.8	\$ (7.4)	-20%
U.S. Large Company Stock Index	32.3	30.2	2.1	7%
U.S. Small/Mid Company Stock Index	16.5	15.3	1.2	8%
Aggressive Portfolio	12.0	10.7	1.3	12%
Moderate Portfolio	10.1	9.7	0.4	4%
60/40 Balanced Stock & Bond	10.7	9.5	1.2	13%
International Company Stock Index	9.6	8.4	1.2	14%
U.S. Bond Index	7.5	7.5	-	0%
Short-Term Investment	4.5	4.5	-	0%
Conservative Portfolio	2.8	3.2	(0.4)	-13%
<b>Total Contributions</b>	<b>\$ 135.4</b>	<b>\$ 135.8</b>	<b>\$ (0.4)</b>	<b>0%</b>

Annual Contributions



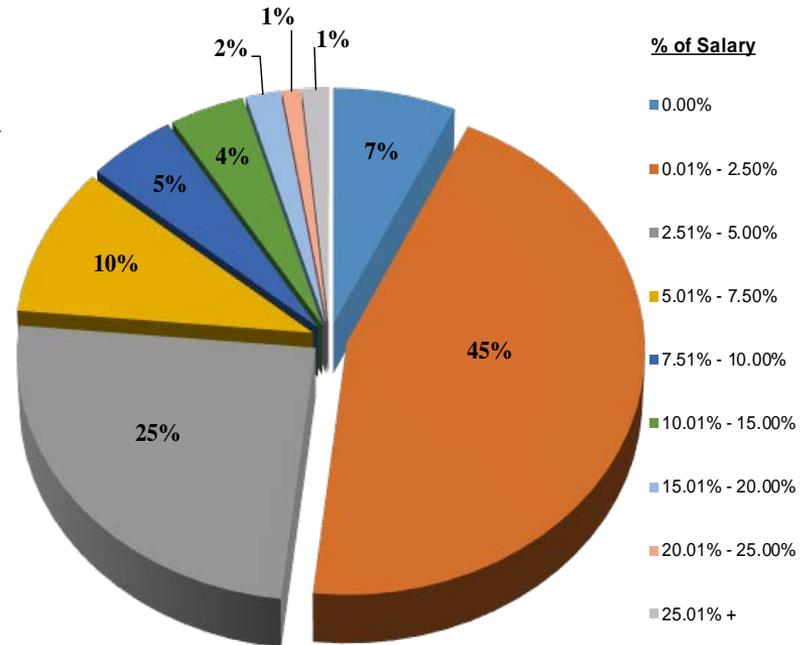
# Contribution Levels

Contribution Levels  
As of December 31, 2017

<u>% of Salary</u>	<u># of Participants</u>	<u>Percent<sup>1/</sup></u>	<u>Average Annual Contribution</u>
0.00%	2,469	6.89% ↓	\$ -
0.01% - 2.50%	16,084	44.89% ↓	528
2.51% - 5.00%	8,838	24.67% ↑	2,768
5.01% - 7.50%	3,534	9.86% ↑	4,467
7.51% - 10.00%	1,798	5.02% ↑	5,342
10.01% - 15.00%	1,507	4.21% ↑	6,782
15.01% - 20.00%	695	1.94% ↑	8,759
20.01% - 25.00%	370	1.03% ↑	8,595
25.01% +	532	1.48% ↓	18,660
<b>Total Active Participants</b>	<b>35,827</b>		

<sup>1/</sup>Arrows represent an increase or decrease from prior year

% of Participants by Contribution Levels

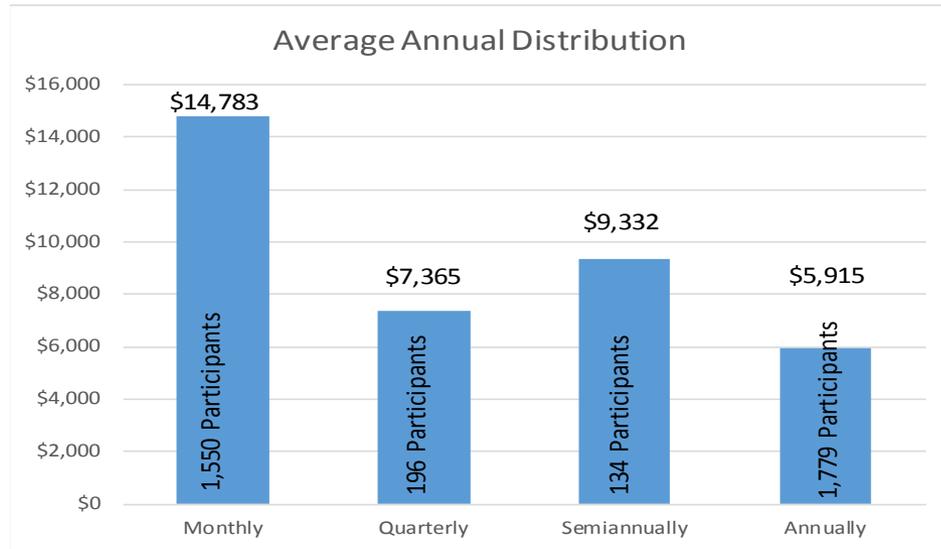


# Participant Distributions

Year Ended December 31, 2017

Distribution Frequency	Participant Count	Distribution Total <sup>1/</sup>	Average Annual Distribution
Monthly	1,550	\$ 22,913,392	\$ 14,783
Quarterly	196	1,443,538	7,365
Semiannually	134	1,250,458	9,332
Annually	1,779	10,521,955	5,915
<b>Total</b>	<b>3,659</b>	<b>\$ 36,129,343</b>	<b>\$ 9,874</b>

34.8% increase to the average defined benefit



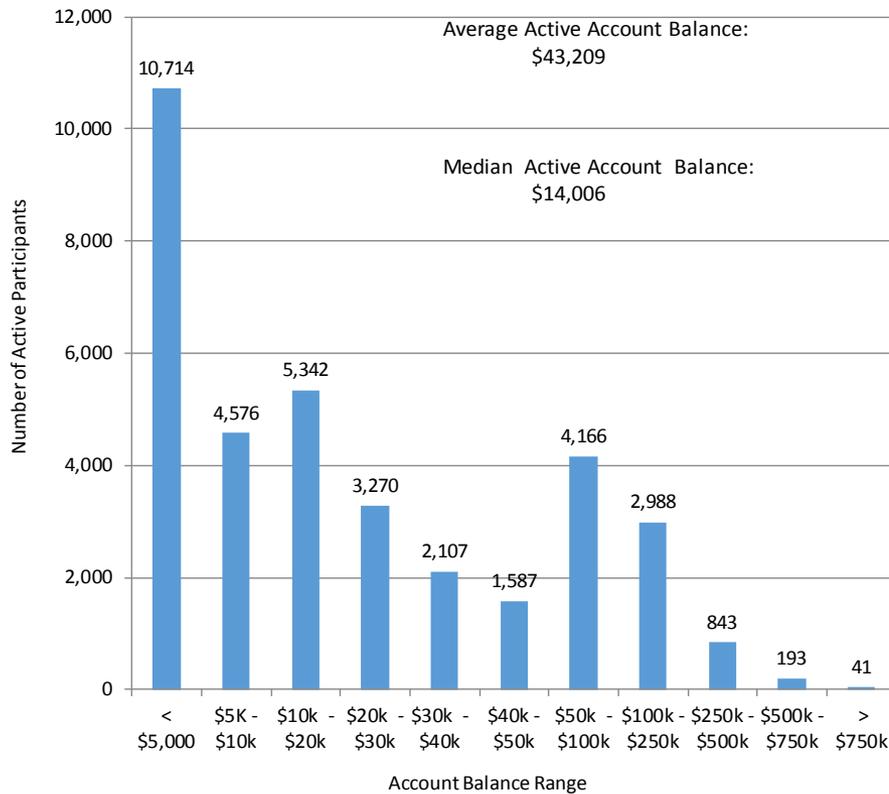
Benefit Plan	Average Total Benefit
Avg. Defined Benefit	\$ 28,352
Avg. 457 Plan	\$ 9,874
<b>Total</b>	<b>\$ 38,226</b>

<sup>1/</sup>Does not reflect \$199M in rollovers out of the 457 Deferred Compensation Plan (457 Plan).

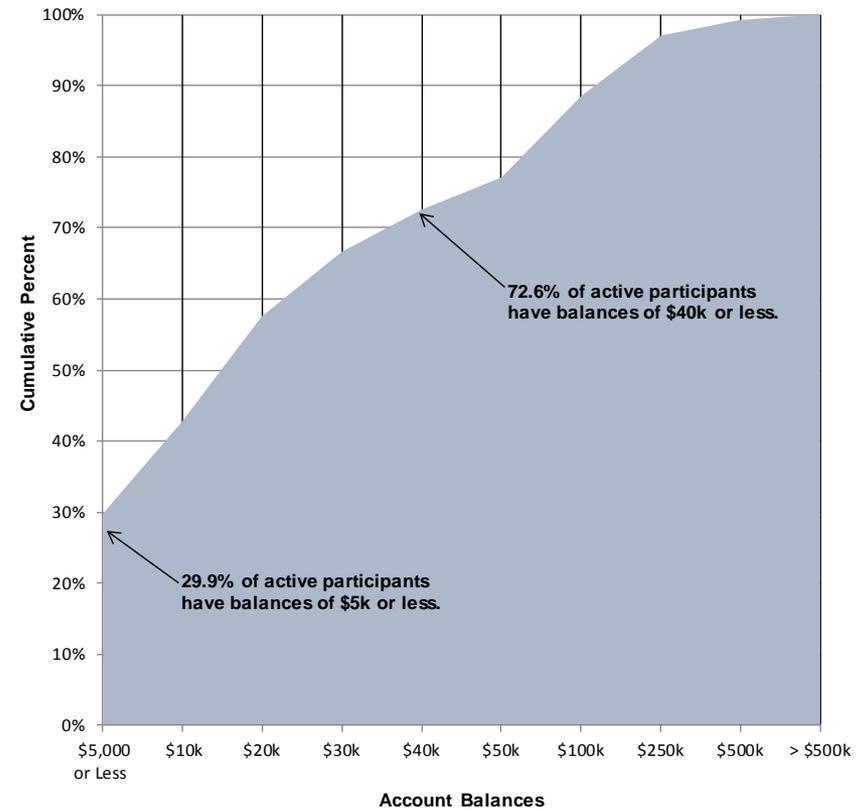
# Participant Account Balance Demographics

as of December 31, 2017

Number of Active Participants by Account Balance Ranges

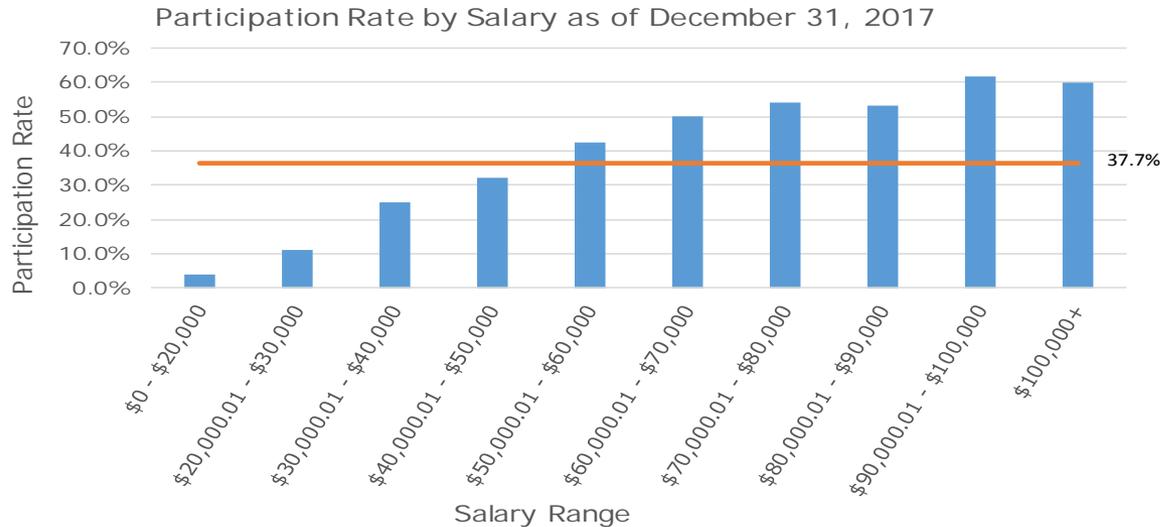


Cumulative Active Participant Population by Balance Threshold



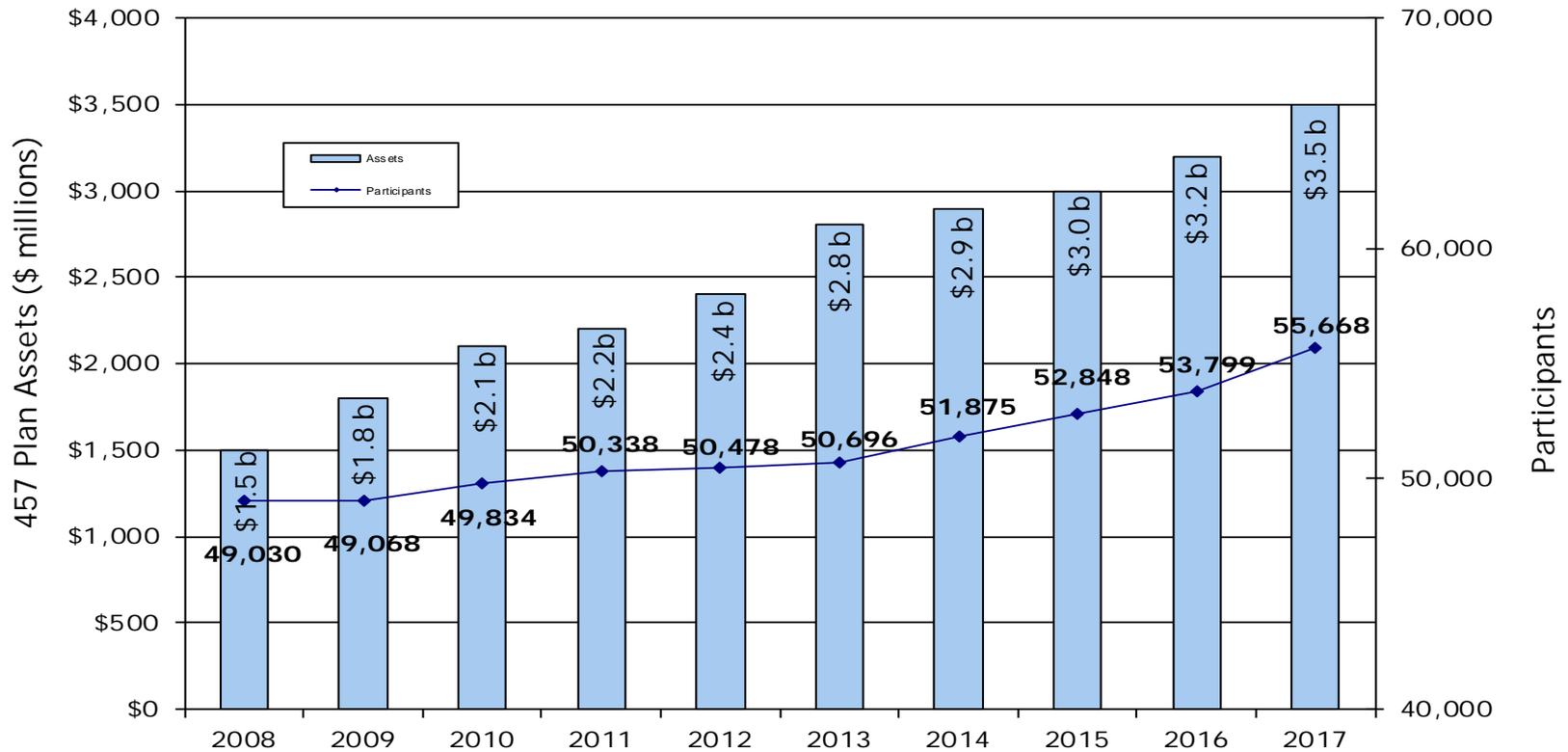
# Participation Rate by Salary Range

<u>Salary Range</u>		<u>SERS Active Member Count<sup>1/</sup></u>	<u>457 Plan Active Participant Count</u>	<u>Participation Rate</u>
	≤ \$ 20,000.00	7,118	281	3.9%
\$	20,000.01 - \$ 30,000.00	5,362	597	11.1%
\$	30,000.01 - \$ 40,000.00	13,229	3,283	24.8%
\$	40,000.01 - \$ 50,000.00	19,248	6,201	32.2%
\$	50,000.01 - \$ 60,000.00	15,223	6,482	42.6%
\$	60,000.01 - \$ 70,000.00	10,539	5,273	50.0%
\$	70,000.01 - \$ 80,000.00	8,592	4,631	53.9%
\$	80,000.01 - \$ 90,000.00	6,024	3,211	53.3%
\$	90,000.01 - \$ 100,000.00	3,568	2,203	61.7%
\$	100,000.01 +	6,103	3,665	60.1%
<b>Total</b>		<b>95,006</b>	<b>35,827</b>	<b>37.7%</b>



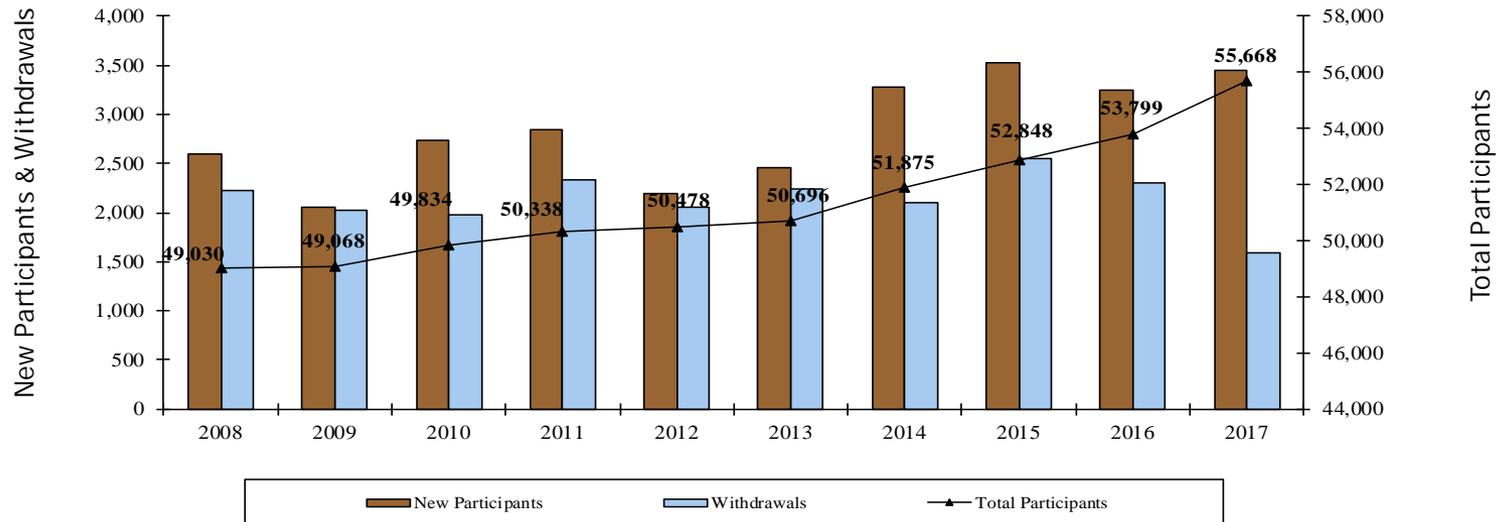
<sup>1/</sup>Does not include non-participating employers

# 10 Year Growth of the 457 Plan



# Participant Count

Year	New		Total
	Participants	Withdrawals	Participants
2008	2,593	2,219	49,030
2009	2,059	2,021	49,068
2010	2,743	1,977	49,834
2011	2,845	2,341	50,338
2012	2,196	2,056	50,478
2013	2,456	2,238	50,696
2014	3,273	2,094	51,875
2015	3,527	2,554	52,848
2016	3,249	2,298	53,799
2017	3,457	1,588	55,668



# Roth Option<sup>1/</sup>

In August 2012, the 457 Plan began offering a Roth option. This option allowed participants to make post tax contributions to a Roth account. In 2014 the program was amended again to allow members to make in-plan conversions of assets to Roth Assets. Roth participant data as of:

## December 31, 2017

- 6,590 Participants
- Average Participant age: 43
- Average Balance: \$6,264
- Total Roth Balance: \$41,279,953
- 100 Total Conversions to Roth

## December 31, 2016

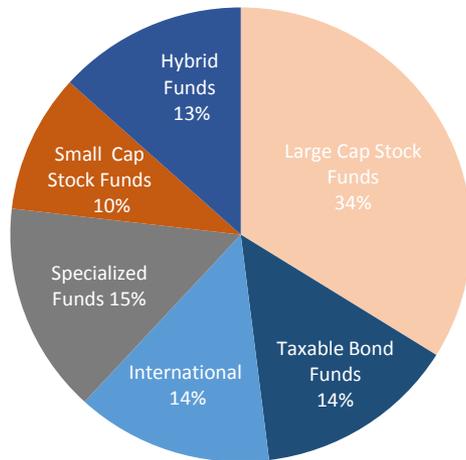
- 5,190 Participants
- Average Participant age: 42
- Average Balance: \$5,114
- Total Roth Balance: \$26,543,317
- 25 Total Conversions to Roth

<sup>1/</sup>According to the 2017 National Association of Government Defined Contribution Administrators' Perspectives in Practice Survey Report of 52 government defined contribution plans, 64% offer Roth accounts.

# Self-Directed Brokerage Account

In 2004, the 457 Plan began offering the Self-Directed Brokerage Account (SDBA) through Charles Schwab. Participants have access to over 8,000 mutual funds through the SDBA. As of December 31, 2017, total asset value for the SDBA was \$118.1 million comprised of 922 different mutual funds. There are 1,407 participants invested in the SDBA, and the average account balance was \$83,969.

## Market Value Allocation



Source: Charles Schwab & Co., Inc.

Top 10 Mutual Fund (MF) Holdings	\$ MF Assets	% MF Assets
GLENMEDE LARGE CAPITAL CORE ADV	\$4,364,248	3.88
EDGEWOOD GROWTH RETAIL	\$4,278,893	3.80
PIMCO INCM CL D	\$3,580,933	3.18
MORGAN STANLEY INST GBL OPPTY PORT CL A	\$3,368,968	3.00
BOSTON PARTNERS ALL CAP VAL INV	\$3,123,580	2.78
RISKPRO PFG EQUITY 30 PLUS FD CL R	\$2,906,751	2.58
PRIMECAP ODYSSEY STOCK	\$2,881,902	2.56
WASATCH EMRG INDIA FD INV	\$2,856,470	2.54
RISKPRO PFG AGGRESSIVE 30 PLUS FD CL R	\$2,479,086	2.20
RMB MENDON FINANCIAL SERVICES A	\$2,442,070	2.17

# Other Data

As of December 31, 2017

Defined Benefit Plan		457 Deferred Compensation Plan	
Avg. Active Member Credited Service	11.4	Total Active Participant	35,827
Avg. Active Member Annual Salary	\$ 58,113	Total Non-Active Participants	19,841
Avg. Age at Retirement for 2017 Retirees	60	Total Participant Count	55,668
Avg. Annual Pension for New Retirees	\$ 28,135	Avg. 457 Plan Participant Account Balance	\$ 63,713
Avg. Ann. Pen. for Ret. Removed from Rolls	\$ 15,127	Avg. Surveyed DC Account Balance <sup>1/</sup>	\$ 48,416
Ten Yr. Active Member Decrease (110,866 to 102,978)	-7.11%	Largest Account Balance	\$ 1,600,029
Ten Yr. Retired Member Increase (108,146 to 129,473)	19.72%	Avg. 457 Plan Participant Ann. Contribution	\$ 3,673
Total Option 4 Withdrawal Payouts	\$ 322 Million	Avg. Surveyed DC Ann. Contribution <sup>1/</sup>	\$ 4,764
Avg. Option 4 Payout	\$78,051	Avg. Number of Investment Options Held	2.92

<sup>1/</sup>2017 National Association of Government Defined Contribution Administrators' Perspectives in Practice Survey Report of 52 individual plans.