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PERA

Public Employees
Retirement Association
of New Mexico

INVESTED IN TOMORROW.

**Public Employees Retirement Association (PERA)
of New Mexico
Annual Actuarial Valuation
as of June 30, 2015**





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

October 29, 2015

The Retirement Board
Public Employees Retirement Association
Santa Fe, New Mexico

Members of the Board:

We have conducted the annual actuarial valuation of the Public Employees Retirement Association (PERA) of New Mexico as of June 30, 2015; the results of the valuation are contained in the following report. The annual valuation is used to determine the sufficiency of the statutory contribution rates and, if necessary, the amount required to fund the annual normal cost and amortize the unfunded actuarial accrued liability over a 30-year period. The results of this valuation apply to the fiscal year beginning July 1, 2015 and ending June 30, 2016 (FY 2016). Information contained in our report for plan years prior to June 30, 2010 is based upon valuations performed by the association's prior actuary.

In performing the valuation, we relied on data supplied by the Public Employees Retirement Association (PERA) and performed limited tests on the data for consistency and reasonableness. In determining the Fund's liabilities, future events, such as investment returns, deaths, retirements, etc., are anticipated based upon the set of actuarial assumptions as approved by the Board.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: fund experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This is to certify that the undersigned are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Fund.

Respectfully submitted,

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

Jonathan T. Craven, ASA, EA, FCA, MAAA
Senior Actuary

Section VI: Accounting Information

Table VI-2: Solvency Test by Division
State General

Valuation Date	Aggregate Accrued Liabilities For				Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)			(1)	(2)	(3)
6/30/2015	\$ 849,806,169	\$ 5,646,053,464	\$ 1,705,146,120	\$ 5,549,137,149	100.00%	83.23%	0.00%	
6/30/2014	826,785,813	5,390,816,297	1,568,388,787	5,334,025,804	100.00	83.61	0.00	
6/30/2013	841,174,061	5,064,595,209	1,617,991,066	4,996,425,681	100.00	82.05	0.00	
6/30/2012	787,435,758	5,117,428,346	1,914,051,334	4,724,562,943	100.00	76.94	0.00	
6/30/2011	796,011,595	4,725,622,520	1,961,725,462	4,883,299,367	100.00	86.49	0.00	

State Police/Corrections

Valuation Date	Aggregate Accrued Liabilities For				Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)			(1)	(2)	(3)
6/30/2015	\$ 58,543,902	\$ 595,623,306	\$ 236,967,557	\$ 1,075,204,637	100.00%	100.00%	100.00%	
6/30/2014	57,705,918	569,659,307	222,557,567	1,016,533,008	100.00	100.00	100.00	
6/30/2013	58,260,570	525,211,454	246,248,914	926,108,695	100.00	100.00	100.00	
6/30/2012	54,156,044	561,452,471	278,404,119	851,976,386	100.00	100.00	84.90	
6/30/2011	53,270,846	522,073,854	271,764,015	862,058,143	100.00	100.00	100.00	



Section VI: Accounting Information

Municipal General

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2015	\$1,033,953,619	\$ 3,756,083,836	\$ 1,069,558,300	\$ 4,696,871,223	100.00%	97.52%	0.00%
6/30/2014	1,023,202,668	3,548,792,552	965,182,192	4,515,120,417	100.00	98.40	0.00
6/30/2013	1,000,561,795	3,309,385,678	1,005,890,251	4,108,957,408	100.00	93.93	0.00
6/30/2012	949,311,379	3,336,286,064	1,192,111,747	3,808,143,673	100.00	85.69	0.00
6/30/2011	926,331,337	3,086,715,812	1,107,402,880	3,845,662,093	100.00	94.58	0.00

Municipal Police

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2015	\$ 258,992,011	\$ 1,649,950,363	\$ 493,438,566	\$ 1,865,190,859	100.00%	97.35%	0.00%
6/30/2014	249,816,375	1,551,716,281	462,032,152	1,772,210,104	100.00	98.11	0.00
6/30/2013	247,882,167	1,413,249,313	485,163,146	1,627,455,783	100.00	97.62	0.00
6/30/2012	231,924,646	1,488,001,979	566,994,541	1,504,516,513	100.00	85.52	0.00
6/30/2011	231,902,509	1,374,649,843	540,837,909	1,527,062,745	100.00	94.22	0.00

Municipal Fire

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Actuarial Value of Assets	(1)	(2)	(3)
6/30/2015	\$ 171,569,805	\$ 934,914,512	\$ 325,885,020	\$ 888,515,174	100.00%	76.69%	0.00%
6/30/2014	162,999,130	893,055,155	291,666,492	844,926,189	100.00	76.36	0.00
6/30/2013	163,287,521	822,738,793	255,740,084	779,204,098	100.00	74.86	0.00
6/30/2012	147,973,606	875,612,944	286,898,869	722,847,504	100.00	65.65	0.00
6/30/2011	146,327,512	816,875,672	264,880,643	737,135,025	100.00	72.33	0.00



Section VI: Accounting Information

Table VI-2: Solvency Test for All PERA Divisions

PERA Totals

Valuation Date	Aggregate Accrued Liabilities For				Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)			(1)	(2)	(3)
6/30/2015	\$2,372,865,506	\$ 12,582,625,481	\$ 3,830,995,563	\$ 14,074,919,042	100.00%	93.00%	0.00%	
6/30/2014	2,320,509,904	11,954,039,592	3,509,827,190	13,482,815,522	100.00	93.38	0.00	
6/30/2013	2,311,166,114	11,135,180,447	3,611,033,461	12,438,151,665	100.00	90.95	0.00	
6/30/2012	2,170,801,433	11,378,781,804	4,238,460,610	11,612,047,019	100.00	82.97	0.00	
6/30/2011	2,153,843,799	10,525,937,701	4,146,610,909	11,855,217,373	100.00	92.17	0.00	



Section VI: Accounting Information

**Table VI-3: Schedule of Retirants Added to and Removed from Rolls by Division
State General**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2015	1,499	\$32,859,803	418	\$ 8,741,632	17,170	\$462,341,335	5.50%	\$ 26,927
6/30/2014	1,150	37,217,020	379	7,574,003	16,089	438,223,164	7.26	27,237
6/30/2013	1,285	43,656,998	358	7,006,726	15,318	408,580,147	9.85	26,673
6/30/2012	1,075	35,697,983	323	5,911,795	14,391	371,929,875	8.71	25,845
6/30/2011	1,005	34,914,890	347	6,179,881	13,639	342,143,687	9.17	25,086

State Police/Corrections

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2015	108	\$ 3,301,453	40	\$ 1,047,237	1,470	\$45,004,922	5.27%	\$ 30,616
6/30/2014	110	4,049,560	34	937,729	1,402	42,750,706	7.85	30,493
6/30/2013	60	2,706,075	23	725,085	1,326	39,638,875	5.26	29,894
6/30/2012	83	3,323,294	21	561,598	1,289	37,657,885	7.91	29,215
6/30/2011	90	3,480,618	20	507,415	1,227	34,896,189	9.31	28,440



Section VI: Accounting Information

Municipal General

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2015	1,066	\$24,563,648	331	\$ 6,177,685	12,027	\$298,866,663	6.56%	\$ 24,850
6/30/2014	849	24,476,772	268	4,923,518	11,292	280,480,700	7.49	24,839
6/30/2013	933	29,438,538	281	4,828,481	10,711	260,927,446	10.41	24,361
6/30/2012	761	23,166,131	240	3,984,904	10,059	236,317,389	8.83	23,493
6/30/2011	767	23,981,216	269	3,952,559	9,538	217,136,162	10.16	22,765

Municipal Police

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2015	204	\$ 8,516,186	37	\$ 994,098	3,210	\$118,640,584	6.77%	\$ 36,960
6/30/2014	222	10,277,993	34	988,805	3,043	111,118,496	9.12	36,516
6/30/2013	177	8,276,701	46	1,276,954	2,855	101,829,308	7.38	35,667
6/30/2012	183	8,670,002	33	967,953	2,724	94,829,561	8.84	34,813
6/30/2011	166	8,033,315	30	821,737	2,574	87,127,512	9.02	33,849

Municipal Fire

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2015	93	\$ 4,762,883	34	\$ 1,134,858	1,795	\$69,877,719	5.48%	\$ 38,929
6/30/2014	112	5,738,384	29	946,274	1,736	66,249,694	7.80	38,162
6/30/2013	70	4,239,651	20	590,379	1,653	61,457,584	6.31	37,179
6/30/2012	86	4,861,646	31	901,384	1,603	57,808,312	7.35	36,063
6/30/2011	98	5,203,080	23	617,946	1,548	53,848,050	9.31	34,786



Section VI: Accounting Information

Table VI-3: Schedule of Retirants Added to and Removed from Rolls for All PERA Divisions

PERA Totals

Valuation Date	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number	Annual Allowances		
6/30/2015	2,970	\$74,003,973	860	\$18,095,510	35,672	\$ 994,731,223	5.96%	\$ 27,885
6/30/2014	2,443	81,759,729	744	15,370,329	33,562	938,822,760	7.61	27,973
6/30/2013	2,525	88,317,963	728	14,427,625	31,863	872,433,360	9.25	27,381
6/30/2012	2,188	75,719,056	648	12,327,634	30,066	798,543,022	8.62	26,560
6/30/2011	2,126	75,613,119	689	12,079,538	28,526	735,151,600	9.46	25,771

Table VI-4: Summary of Actuarial Methods and Assumptions

Valuation date	June 30, 2015
Actuarial cost method	Entry Age Normal
Amortization method	Level Percent of Payroll, Open
Payroll growth rate	3.50%
Remaining amortization period	30 years
Asset valuation method	4-year Smoothed Market
Actuarial assumptions:	
Investment rate of return*	7.75%
Administrative expenses	0.45% of payroll
Projected salary increases*	4.00% – 14.25%
Post-retirement benefit increases	2.00% compounded annually (2.50% for certain retirees and disabled participants with annual benefits less than \$20,000)

* Includes inflation at 3.00%



Appendix A: Additional Membership Data

Table A-1: Schedule of Active Participant Data as of June 30, 2015 by Division

State General

Nearest Age	Completed Years of Service								Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+			
Under 20	35							35	\$ 971,285	
20 to 24	503	5						508	14,503,777	
25 to 29	1,328	255	6					1,589	55,735,888	
30 to 34	1,322	717	240	6				2,285	91,924,714	
35 to 39	1,014	667	503	209	4			2,397	108,071,645	
40 to 44	900	525	571	481	179			2,656	127,087,167	
45 to 49	951	524	548	439	459	39		2,960	145,105,081	
50 to 54	760	547	548	406	500	81	5	2,847	139,408,258	
55 to 59	609	522	483	416	412	78	9	2,529	126,348,813	
60	96	102	103	99	74	17	7	498	25,692,570	
61	91	84	85	77	50	14	1	402	19,992,079	
62	69	64	91	52	35	13	3	327	16,759,294	
63	84	64	77	43	39	21	4	332	18,798,204	
64	58	54	50	38	24	5	2	231	12,482,791	
65	36	34	32	25	24	6	4	161	8,610,723	
66	32	29	24	14	15	5	2	121	6,599,756	
67	19	28	16	16	9	4		92	4,783,454	
68	17	16	21	9	3	2		68	3,965,909	
69	12	15	10	6	5	2	1	51	2,728,359	
70	12	10	6	4	1	1	1	35	1,829,733	
71	7	8	4	6				25	1,682,199	
72	11	6	7	5	2	2		33	1,578,867	
73	2	3	10	1	1	2		19	827,885	
74	4	4	2	2	1		1	14	646,655	
75	4	2	3		1			10	557,414	
76	2	1	1	2				6	373,587	
77	2	2	1	2		1	1	9	472,991	
78	2	2		2				6	379,759	
79								0		
80 & Over	2	1	1	1	1		1	7	249,922	
Total	7,984	4,291	3,443	2,361	1,839	293	42	20,253	\$ 938,168,776	

Average Age: 45.19

Average Service: 8.93



Appendix A: Additional Membership Data

State Police/Corrections

Nearest Age	Completed Years of Service								Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	
Under 20	6							6	\$ 213,965
20 to 24	209	6	1					216	8,911,395
25 to 29	228	91	13					332	15,275,549
30 to 34	124	75	96	27				322	16,267,914
35 to 39	68	65	70	74	15			292	15,959,497
40 to 44	33	41	44	80	63	2		263	15,979,531
45 to 49	33	31	35	40	49	12	1	201	11,638,514
50 to 54	19	20	22	26	22	8	4	121	6,089,682
55 to 59	13	13	18	22	11	2	3	82	4,565,175
60	1		2	4	3		1	11	683,611
61	3	2	2	2	2		1	12	582,522
62	3		1		1			5	268,395
63	1					1		2	98,865
64		1	1	3		2		7	368,759
65			1				1	2	124,355
66	1							1	59,320
67			1	2				3	173,705
68									
69									
70									
71	1							1	41,190
72									
73									
74						1		1	50,973
75									
76									
77									
78									
79									
80 & Over									
Total	743	345	307	280	166	28	11	1,880	\$ 97,352,917

Average Age: 36.80

Average Service: 9.38



Appendix A: Additional Membership Data

Municipal General

Nearest Age	Completed Years of Service							Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+		
Under 20	164							164	\$ 4,817,248
20 to 24	1,112	12						1,124	32,024,939
25 to 29	1,499	443	15					1,957	64,517,700
30 to 34	1,168	715	254	11				2,148	78,481,254
35 to 39	1,044	680	463	192	10			2,389	94,864,718
40 to 44	1,072	710	461	360	220	2		2,825	119,569,652
45 to 49	839	549	467	419	354	58	2	2,688	118,446,980
50 to 54	807	605	476	403	341	111	14	2,757	120,964,453
55 to 59	676	606	457	397	369	115	27	2,647	116,160,846
60	109	103	83	59	53	15	3	425	18,782,224
61	108	81	82	63	41	15	6	396	17,055,720
62	96	83	68	52	37	12	6	354	14,735,999
63	67	71	69	44	19	6	3	279	12,414,121
64	57	62	56	27	20	10	4	236	10,914,581
65	41	51	34	26	17	4	2	175	7,800,001
66	44	40	24	18	10	5	2	143	6,342,026
67	43	27	23	12	6	8	2	121	5,231,636
68	33	19	22	9	6	4	1	94	3,738,330
69	26	12	10	3	8	3		62	2,542,502
70	21	9	5	3				38	1,137,495
71	15	9	10	7	3		2	46	1,805,744
72	10	11	5	2	1	3		32	1,163,998
73	5	6	4	3	3	1		22	743,622
74	12	5	4		1			22	774,450
75	2	4	3	1	2			12	410,130
76	3	3	1	3				10	286,617
77	5		1	1				7	115,172
78	1	3	2	1				7	193,720
79	4	3	1					8	275,126
80 & Over	12	7	4		4	2		29	932,237
Total	9,095	4,929	3,104	2,116	1,525	374	74	21,217	\$ 857,243,239

Average Age: 44.26

Average Service: 8.25



Appendix A: Additional Membership Data

Municipal Police

Nearest Age	Completed Years of Service							Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+		
Under 20	4							4	\$ 162,145
20 to 24	202	2						204	8,884,599
25 to 29	457	163	2					622	32,282,542
30 to 34	231	315	118					664	39,748,555
35 to 39	148	190	240	95	1	0	0	674	43,300,787
40 to 44	79	104	163	243	35	1		625	42,517,435
45 to 49	51	66	105	158	56	8		444	29,586,296
50 to 54	29	36	53	73	32	9		232	15,184,896
55 to 59	16	18	28	26	8	4	1	101	5,983,780
60	1	4	4	4	1			14	763,335
61	1	5	4	4	3	2		19	1,170,898
62	3		1	2	2	1		9	555,977
63	3	5		1	2	1		12	716,953
64	1			3			1	5	278,271
65				4			1	5	378,954
66				1			2	3	202,851
67	1							1	46,154
68	3		2					5	181,808
69	2							2	98,842
70									
71									
72									
73									
74									
75									
76									
77									
78	1							1	32,940
79									
80 & Over				1				1	7,800
Total	1,233	908	720	615	140	26	5	3,647	\$ 222,085,818

Average Age: 37.65

Average Service: 9.01



Appendix A: Additional Membership Data

Municipal Fire

Nearest Age	Completed Years of Service								Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+			
Under 20	1								1	\$ 24,352
20 to 24	106	3							109	4,366,656
25 to 29	222	107	2						331	16,054,901
30 to 34	153	242	84	1					480	28,031,149
35 to 39	93	166	184	58					501	31,100,733
40 to 44	27	67	109	131	21				355	24,369,997
45 to 49	14	32	59	97	27	3			232	16,482,774
50 to 54	2	8	18	48	19	4	2		101	7,972,333
55 to 59	1	7	6	23	6	3			46	3,502,381
60	1	1	1	2	1		1		7	456,631
61						1			1	115,949
62			1	2			1		4	351,969
63					1		1		2	146,731
64			1						1	64,701
65						1			1	109,565
66	1	1	1						3	187,196
67										
68										
69										
70										
71										
72										
73										
74										
75			1						1	65,510
76										
77										
78										
79										
80 & Over										
Total	621	634	467	362	75	12	5	2,176	\$ 133,403,526	

Average Age: 36.88
 Average Service: 9.45



Appendix A: Additional Membership Data

All PERA Divisions

Neearest Age	Completed Years of Service								Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+			
Under 20	210							210	\$ 6,188,995	
20 to 24	2,132	28	1					2,161	68,691,365	
25 to 29	3,734	1,059	38					4,831	183,866,580	
30 to 34	2,998	2,064	792	45				5,899	254,453,587	
35 to 39	2,367	1,768	1,460	628	30			6,253	293,297,380	
40 to 44	2,111	1,447	1,348	1,295	518	5		6,724	329,523,781	
45 to 49	1,888	1,202	1,214	1,153	945	120	3	6,525	321,259,645	
50 to 54	1,617	1,216	1,117	956	914	213	25	6,058	289,619,622	
55 to 59	1,315	1,166	992	884	806	202	40	5,405	256,560,995	
60	208	210	193	168	132	32	12	955	46,378,371	
61	203	172	173	146	96	32	8	830	38,917,169	
62	171	147	162	108	75	26	10	699	32,671,633	
63	155	140	146	88	61	29	8	627	32,174,873	
64	116	117	108	71	44	17	7	480	24,109,103	
65	77	85	67	55	41	11	8	344	17,023,598	
66	78	70	49	33	25	10	6	271	13,391,149	
67	63	55	40	30	15	12	2	217	10,234,949	
68	53	35	45	18	9	6	1	167	7,886,046	
69	40	27	20	9	13	5	1	115	5,369,703	
70	33	19	11	7	1	1	1	73	2,967,227	
71	23	17	14	13	3		2	72	3,529,133	
72	21	17	12	7	3	5		65	2,742,865	
73	7	9	14	4	4	3		41	1,571,506	
74	16	9	6	2	2	1	1	37	1,472,077	
75	6	6	7	1	3			23	1,033,053	
76	5	4	2	5				16	660,205	
77	7	2	2	3		1	1	16	588,162	
78	4	5	2	3				14	606,418	
79	4	3	1					8	275,126	
80 & Over	14	8	5	2	5	2	1	37	1,189,959	
Total	19,676	11,107	8,041	5,734	3,745	733	137	49,173	\$ 2,248,254,276	

Average Age: 43.54

Average Service: 8.69



Appendix A: Additional Membership Data

Table A-2: Number of Annual Retirement Allowances of Benefit Recipients as of June 30, 2015

Type of Pension	Number	Total Annual Benefits	Average Annual Pension
Service Retirement Pensions			
Single Life Pension Terminating Upon Death*	13,185	\$ 381,744,341	\$ 28,953
Two Life 100% Survivor Pension			
Retired Member Recipient*	12,238	366,050,578	29,911
Survivor Recipient	2,161	46,382,478	21,463
Two Life 50% Survivor Pension			
Retired Member Recipient*	4,512	141,380,112	31,334
Survivor Recipient	848	10,619,586	12,523
Single Life with Temporary Child Survivor Pension			
Retired Member Recipient*	225	8,547,358	37,988
Child Recipient	4	123,956	30,989
Total Service Retirement Pensions	33,173	\$ 954,848,409	\$ 28,784
Disability Retirement Pensions			
Single Life Pension Terminating Upon Death*	350	\$ 5,704,449	\$ 16,298
Two Life 100% Survivor Pension			
Retired Member Recipient*	669	10,794,391	16,135
Survivor Recipient	181	2,689,461	14,859
Two Life 50% Survivor Pension			
Retired Member Recipient*	136	2,424,552	17,828
Survivor Recipient	21	176,171	8,389
Single Life with Temporary Child Survivor Pension			
Retired Member Recipient*	10	163,592	16,359
Child Recipient	3	54,193	18,064
Total Disability Retirement Pensions	1,370	\$ 22,006,809	\$ 16,063
Pre-Retirement Survivor Pensions			
Spouse Recipient	1,080	\$ 17,400,214	16,111
Child Recipient	49	475,791	9,710
Total Pre-Retirement Survivor Pensions	1,129	\$ 17,876,005	\$ 15,833
Total Pensions Being Paid	35,672	\$ 994,731,223	\$ 27,885

* Includes Co-Payees



Appendix A: Additional Membership Data

Table A-3: Distribution of Participants Receiving Benefits as of June 30, 2015

Attained Age	Retired Member		Disabled Member		Survivor Beneficiaries		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
Under 40	15	\$ 362,564	41	\$ 644,240	245	\$ 3,540,231	301	\$ 4,547,035
40 to 44	296	11,351,174	69	1,237,551	110	1,752,829	475	14,341,554
45 to 49	1,274	48,081,048	129	2,690,782	153	2,480,224	1,556	53,252,054
50 to 54	2,758	103,696,140	222	4,073,076	224	4,005,111	3,204	111,774,327
55 to 59	3,507	128,707,155	304	5,078,651	337	6,321,337	4,148	140,107,143
60 to 64	4,880	162,712,431	301	4,534,253	460	9,262,449	5,641	176,509,133
65 to 69	6,725	187,656,463	74	655,483	526	10,538,083	7,325	198,850,029
70 to 74	4,480	114,963,958	2	48,615	578	11,613,184	5,060	126,625,757
75 to 79	3,044	72,893,485			569	10,136,488	3,613	83,029,973
80 to 84	1,813	40,751,281			516	9,047,946	2,329	49,799,227
85 to 89	944	19,221,777			359	5,838,723	1,303	25,060,500
90 to 94	339	6,253,549			199	2,586,836	538	8,840,385
95 to 99	82	954,886			57	691,965	139	1,646,851
100 & Over	26	240,811			14	106,444	40	347,255
Total	30,183	\$897,846,722	1,142	\$ 18,962,651	4,347	\$ 77,921,850	35,672	\$ 994,731,223



Appendix A: Additional Membership Data

**Table A-4: Distribution of Retirees by Years of Service at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

Division	Years of Credited Service at Retirement							Total
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	
State General								
Average Monthly Benefit*	\$ 605	\$ 899	\$ 1,420	\$ 2,012	\$ 2,738	\$ 3,194	\$3,132	\$2,431
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	520	1,484	1,605	1,593	2,147	5,734	677	13,760
State Police/Corrections								
Average Monthly Benefit*	\$ 1,205	\$1,717	\$ 1,579	\$ 2,251	\$ 2,845	\$ 3,305	\$3,822	\$2,855
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	33	59	64	83	226	434	62	961
Municipal General								
Average Monthly Benefit*	\$ 854	\$ 736	\$ 1,189	\$ 1,839	\$ 2,619	\$ 3,078	\$3,145	\$2,270
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	278	1,078	1,189	1,195	1,485	3,724	363	9,312
Municipal Police								
Average Monthly Benefit*	\$ 2,054	\$1,589	\$ 2,080	\$ 3,167	\$ 3,584	\$ 3,925	\$3,657	\$3,413
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	42	49	81	467	1,702	133	35	2,509
Municipal Fire								
Average Monthly Benefit*	\$ 2,229	\$2,032	\$ 2,767	\$ 3,247	\$ 3,692	\$ 3,694	\$3,400	\$3,547
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	10	23	48	220	1,027	57	35	1,420
Totals for All Divisions								
Average Monthly Benefit*	\$ 793	\$ 874	\$ 1,371	\$ 2,187	\$ 3,082	\$ 3,169	\$3,196	\$2,536
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	883	2,693	2,987	3,558	6,587	10,082	1,172	27,962

* Does not include the following number of retirees with missing years of service at retirement

- State General – 488
- State Police/Corrections – 202
- Municipal General – 319
- Municipal Police – 136
- Municipal Fire – 54



Appendix A: Additional Membership Data

**Table A-5: Distribution of Recent Retiree Ages at Retirement
(not including Disabled Members, Beneficiaries, and Co-Payees)**

Division	2010-11 Retirees	2011-12 Retirees	2012-13 Retirees	2013-14 Retirees	2014-15 Retirees	All Current Retirees
State General						
Number	773	833	932	897	781	14,248
Average Monthly Benefit at Retirement	\$ 2,429	\$ 2,291	\$ 2,357	\$ 2,341	\$ 2,306	\$ 1,952
Average Age at Retirement	59.36	59.85	59.48	59.05	60.11	57.32
State Police/Corrections						
Number	67	64	56	69	58	1,163
Average Monthly Benefit at Retirement	\$ 2,733	\$ 2,618	\$ 2,655	\$ 2,878	\$ 2,748	\$ 2,300
Average Age at Retirement	52.28	52.61	52.32	50.52	50.41	51.20
Municipal General						
Number	575	559	645	702	631	9,631
Average Monthly Benefit at Retirement	\$ 2,322	\$ 2,150	\$ 2,165	\$ 2,198	\$ 2,132	\$ 1,875
Average Age at Retirement	58.72	59.36	59.78	59.64	60.11	57.65
Municipal Police						
Number	129	143	149	161	146	2,645
Average Monthly Benefit at Retirement	\$ 3,333	\$ 3,336	\$ 3,306	\$ 3,612	\$ 3,396	\$ 2,761
Average Age at Retirement	49.53	47.64	48.49	48.62	49.09	47.59
Municipal Fire						
Number	77	62	59	87	60	1,474
Average Monthly Benefit at Retirement	\$ 3,720	\$ 3,944	\$ 3,609	\$ 3,831	\$ 4,162	\$ 2,801
Average Age at Retirement	49.41	48.70	48.58	48.87	50.36	47.82
Totals for All Current Retirees						
Number	1,621	1,661	1,841	1,916	1,676	29,161
Average Monthly Benefit at Retirement	\$ 2,537	\$ 2,408	\$ 2,416	\$ 2,482	\$ 2,417	\$ 2,057
Average Age at Retirement	57.59	57.94	58.13	57.62	58.46	55.82



Appendix B: Summary of Actuarial Assumptions & Methods

Actuarial Cost Methods Used for the Valuation

An actuarial cost method is a procedure for allocating the actuarial present value of benefits and expenses to time periods. The method used for this valuation is known as the individual entry-age actuarial cost method and has the following characteristics:

- (i) The annual normal costs for each individual active member are sufficient to accumulate the value of the member's pension at the time of retirement.
- (ii) Each annual normal cost is a constant percentage of the member's year-by-year projected compensation.

The individual entry-age actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's compensation between the entry-age of the member and the expected exit ages. The expected annual administrative expenses are included in the determination of the actuarially determined contributions.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future costs is called the actuarial accrued liability. Deducting actuarial value of assets from the actuarial accrued liability determines the unfunded actuarial accrued liability. Unfunded actuarial accrued liability was amortized as a level percent of payroll over 30 years to determine the actuarial determined contribution. This period is consistent with the policy established by the Retirement Board in October 1996.

Active member payroll was projected to increase 3.5% per year (4.0% prior to the June 30, 2014 valuation) for the purpose of determining the contribution needed to amortize the unfunded actuarial accrued liability. This estimate is consistent with the base rate of increase in salaries used to calculate actuarial present values.

The actuarial value of assets used for funding purposes is derived as follows: prior year actuarial value of assets is increased by contributions and expected investment income and reduced by refunds, benefit payments and expenses. To this amount 25% of the difference between expected and actual investment income for each of the previous four years is added.



Appendix B: Summary of Actuarial Assumptions & Methods

Actuarial Assumptions Used for the Valuation (effective with June 30, 2014 Valuation)

Assumed Rate of Investment Return. 7.75% per annum net of investment expenses.

Administrative Expenses. 0.45% of payroll.

Price Inflation. 3.0% per annum, compounded annually.

Real Investment Return. 4.75% over price inflation (4.25% over wage growth). This is the expected rate of return (net of investment expenses) above the rate of price inflation.

Salary Increases. Salary increases occur in recognition of (i) individual merit and longevity, (ii) inflation-related depreciation of the purchasing power of salaries, and (iii) other factors such as productivity gains and competition from other employers for personnel. Sample rates follow:

Attributable to:	Annual Rates of Salary Increase for Sample Years of Service				
	1	5	10	15	20
General Increase in Wage Level Due to:					
Inflation	3.00%	3.00%	3.00%	3.00%	3.00%
Other Factors	0.50	0.50	0.50	0.50	0.50
Increase Due to Merit/Longevity:					
State General	7.75	1.75	0.50	0.50	0.50
State Police	10.75	6.25	1.75	1.75	1.75
State Corrections	9.75	2.75	1.75	1.75	1.75
Municipal General*	2.25	1.75	0.50	0.50	0.50
Municipal Police	8.25	3.25	2.00	1.25	1.25
Municipal Fire	8.25	3.25	2.00	2.00	2.00

* Includes Municipal Detention Officers



Appendix B: Summary of Actuarial Assumptions & Methods

In the following schedules, State Corrections includes Adult Corrections Officers, Juvenile Corrections Officers and Municipal Detention Officers unless otherwise noted.

Mortality Assumption. The mortality assumptions are based on the RP-2000 Mortality Tables (Combined table for healthy post-retirement, Employee table for active members, and Disabled table for disabled retirees before retirement age) with projection to 2018 using Scale AA.

Rates are shown for sample ages in the following schedule. Note that sex distinct mortality rates are used solely for determining the funded status and contribution rate adequacy. All benefit amounts are based on merged gender mortality rates.

Sample Mortality Rates								
Pre-Retirement			Post-Retirement			Disabled		
Age	Male	Female	Age	Male	Female	Age	Male	Female
25	0.03%	0.02%	45	0.12%	0.08%	45	1.78%	0.56%
30	0.04	0.02	50	0.15	0.12	50	2.09	0.85
35	0.07	0.04	55	0.26	0.24	55	2.51	1.43
40	0.09	0.05	60	0.50	0.46	60	3.14	2.00
45	0.12	0.08	65	0.99	0.89	65	Uses healthy post-retirement rates upon surviving to normal retirement age.	
50	0.15	0.12	70	1.69	1.53	70		
55	0.21	0.22	75	2.94	2.43	75		
60	0.36	0.36	80	5.37	4.04	80		
65	0.59	0.53	85	9.76	6.95	85		



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Retirement.

First Eligibility Rates: These rates are used to measure the probability of members retiring in the first year eligible for retirement at the indicated ages.

Sample Percent Retiring at First Eligibility by Age								
Ages	State General		State	State	Municipal General		Municipal	Municipal
	Male	Female	Police	Corrections	Male	Female	Police	Fire
40	55%	60%	60%	60%	55%	55%	60%	45%
45	55	60	60	60	55	55	50	35
50	55	60	50	50	55	55	50	30
55	55	60	50	50	55	55	50	50
60	35	40	50	50	30	30	50	50
65	25	30	100	50	30	35	50	50
70	25	30		100	25	25	100	100
75	25	30			25	25		
80	100	100			100	100		

Subsequent Eligibility Rates: These rates are used to measure the probability of members retiring after the first year eligible for retirement at the indicated ages.

Sample Percent Retiring After First Eligibility by Age								
Ages	State General		State	State	Municipal General		Municipal	Municipal
	Male	Female	Police	Corrections	Male	Female	Police	Fire
40	40%	35%	40%	50%	35%	35%	30%	40%
45	40	35	40	50	35	35	30	35
50	40	35	50	50	40	40	30	30
55	40	35	35	50	30	25	30	30
60	30	40	35	50	30	30	30	20
65	30	35	100	40	35	35	50	50
70	25	30		100	25	25	100	100
75	25	25			25	25		
80	100	100			100	100		



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Withdrawal from Active Membership. The rates are used to measure probabilities of active members terminating for a reason other than disability or death. The rates do not apply to members who are within the retirement rate range. Assumptions for State General and Municipal General are gender distinct and both based on age and service. Assumptions for all other plans are not gender distinct and are service related only. These rates do not vary by age.

State General Males					
Rates of Active Members Terminating During Year					
Sample Ages	Sample Service (Yr):				
	2	4	6	8	10+
20	18.76%	10.86%	8.21%	7.78%	5.11%
25	17.72	11.06	8.10	7.07	4.65
30	16.45	11.27	7.97	6.18	4.13
35	15.31	10.81	7.59	5.58	3.89
40	14.30	9.97	7.08	5.40	3.86
45	13.55	9.06	6.63	5.40	3.86
50	13.26	8.45	6.49	5.40	3.86
55	13.26	8.37	6.49	5.40	3.86
60	13.26	8.37	6.49	5.40	3.86
65	13.26	8.37			
70	13.26	8.37			

State General Females					
Rates of Active Members Terminating During Year					
Sample Ages	Sample Service (Yr):				
	2	4	6	8	10+
20	18.13%	11.95%	8.22%	6.05%	4.83%
25	17.76	11.95	8.02	5.81	4.25
30	17.28	11.89	7.81	5.54	3.55
35	16.34	11.23	7.45	5.28	3.46
40	15.22	10.24	6.99	5.06	3.46
45	14.19	9.20	6.58	4.95	3.46
50	13.52	8.55	6.45	4.80	3.46
55	13.37	8.50	6.45	4.70	3.46
60	13.37	8.50	6.45	4.70	3.46
65	13.37	8.50			
70	13.37	8.50			



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Withdrawal from Active Membership (cont.)

Municipal General Males					
Rates of Active Members Terminating During Year					
Sample Ages	Sample Service (Yr):				
	2	4	6	8	10+
20	21.70%	14.59%	11.29%	8.93%	8.54%
25	20.00	13.52	10.26	8.05	7.32
30	17.73	12.04	8.96	6.94	5.69
35	15.77	10.65	8.01	6.20	4.61
40	14.06	9.37	7.29	5.73	3.92
45	12.80	8.39	6.87	5.58	3.65
50	12.20	8.01	6.79	5.58	3.65
55	12.18	8.01	6.79	5.58	3.65
60	12.18	8.01	6.79	5.58	3.65
65	12.18	8.01			
70	12.18	8.01			

Municipal General Females					
Rates of Active Members Terminating During Year					
Sample Ages	Sample Service (Yr):				
	2	4	6	8	10+
20	24.40%	17.77%	14.41%	11.94%	7.51%
25	21.96	16.06	12.80	10.32	6.38
30	18.85	13.77	10.63	8.16	4.94
35	16.69	11.96	9.08	6.70	4.09
40	15.16	10.49	7.84	5.74	3.67
45	14.28	9.49	6.50	5.31	3.62
50	14.01	9.14	6.50	5.30	3.62
55	14.01	9.14	6.50	5.30	3.62
60	14.01	9.14	6.50	5.30	3.62
65	14.01	9.14			
70	14.01	9.14			



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Withdrawal from Active Membership (cont.)

Service Based Rates of Active Members Terminating During Year					
All Ages	Sample Service (Yr):				
	1	3	5	7	10+
State Police	8.00%	7.00%	4.00%	4.00%	4.00%
State Corrections	20.00	16.00	9.00	8.00	6.00
Municipal Detention	22.00	16.00	10.00	10.00	6.00
Municipal Police	14.00	9.50	6.80	5.15	3.80
Municipal Fire	10.00	7.50	5.00	3.30	3.00

Rates of Disability. The rates are used to measure the probabilities of active members becoming disabled. Rates for sample ages follow. For non-public safety groups, 25% disabilities are assumed to be duty related and 35% are assumed to be duty-related for public safety groups.

Rates Becoming Disabled at Indicated Ages (State Division)					
Sample Ages	State General		State	State	
	Male	Female	Police	Corrections	
25	0.02%	0.02%	0.05%	0.14%	
30	0.04	0.03	0.09	0.16	
35	0.08	0.06	0.14	0.21	
40	0.13	0.12	0.35	0.27	
45	0.24	0.20	0.42	0.46	
50	0.41	0.39	0.69	0.90	
55	0.57	0.61	1.59	1.40	
60	0.74	0.73	2.31	1.88	
65	0.75	0.73	2.31	1.88	

Rates Becoming Disabled at Indicated Ages (Municipal Division)					
Sample Ages	Municipal General		Municipal	Municipal	Municipal
	Male	Female	Detention	Police	Fire
25	0.05%	0.04%	0.06%	0.07%	0.02%
30	0.08	0.04	0.10	0.08	0.02
35	0.12	0.04	0.15	0.12	0.02
40	0.17	0.06	0.22	0.17	0.08
45	0.25	0.14	0.32	0.26	0.08
50	0.40	0.25	0.51	0.42	0.33
55	0.65	0.39	0.85	0.73	0.33
60	0.80	0.51	1.04	1.22	1.17
65	0.82	0.59	1.07	1.22	1.17



Appendix B: Summary of Actuarial Assumptions & Methods

Miscellaneous and Technical Assumptions

Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	Beginning of plan year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	All decrements are assumed to occur at the beginning of the plan year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Neither disability nor withdrawal decrements operate during retirement eligibility.
Loads:	Retiree liabilities were increased by 1% to account for the pop-up provision.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report and the actual payroll payable at the time contributions are made.
Normal Form of Benefit:	A straight life payment is the assumed normal form of benefit.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.
Data Changes:	For missing dates of birth for active members, we assumed to enter the system at the average entry age. For retiree records with a joint and survivor option and a missing beneficiary date of birth, the beneficiary was assumed to be 3 years younger if the member was male and 3 years older if the member was female.



Appendix B: Summary of Actuarial Assumptions & Methods

Definitions of Technical Terms

Actuarial Accrued Liability. The difference between the actuarial present value of future benefits payments and the actuarial present value of future normal costs.

Actuarial Cost Method. A mathematical procedure for allocating the dollar amount of the “actuarial present value of future benefit payments” between future normal cost and actuarial accrued liability.

Actuarial Present Value. The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.

Amortization. Paying off an interest-discounted amount with periodic payments of interest and principal – as opposed to paying off with a lump sum payment.

Experience Gain (Loss). The difference between actual actuarial costs and anticipated actuarial costs – during the period between two valuation dates.

Normal Cost. The actuarial cost allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and the actuarial value of assets. Sometimes referred to as “unfunded accrued liability.”



Appendix C: Summary of Plan Provisions

Benefit Tier

Effective July 1, 2013, Senate Bill 27 establishes two tiers of benefits under each PERA coverage plan:

Tier 1

- Current active members employed by a PERA affiliate on June 30, 2013
- Inactive members who did not receive a refund and have employee contributions on account on June 30, 2013
- Currently retired or will retire on or before June 30, 2013

Note: State and Municipal General members hired between July 1, 2010 and June 30, 2013 are grandfathered into Tier 1 coverage plans.

Tier 2

- Active members first hired on or after July 1, 2013
- Members who received a refund of employee contributions on or before June 30, 2013 and return to work for a PERA affiliate on or after July 1, 2013

Normal Retirement Eligibility Conditions

Tier 1

Applicable to all members:

- Any age with 25 or more years of credited service; or
- Age 60 or older with 20 or more years of credited service; or
- Age 61 or older with 17 or more years of credited service; or
- Age 62 or older with 14 or more years of credited service; or
- Age 63 or older with 11 or more years of credited services or
- Age 64 or older with 8 or more years of credited service; or
- Age 65 or older with 5 or more years of credited service.

Applicable to Municipal Police (Plans 3, 4, & 5) and Municipal Fire (Plans 3, 4, & 5) members:

- Any age with 20 or more years of credited service



Appendix C: Summary of Plan Provisions

Contributions by Members and Employers

Contributions by members and affiliated public employers are at the following rates shown below.

Coverage Plan	Percent of Salary Member*	Contribution Rate Employer
State General Member Coverage Plan 3	8.92%	16.99%
State Police Member and Adult Correctional Officer Member Coverage Plan 1	9.10	25.50
Hazardous Duty (Juvenile Corrections) Member Coverage Plan 2	6.28	26.12
Municipal General Member Coverage Plan 1	8.50	7.40
Municipal General Member Coverage Plan 2	10.65	9.55
Municipal General Member Coverage Plan 3	14.65	9.55
Municipal General Member Coverage Plan 4	17.15	12.05
Municipal Detention Officer Member Coverage Plan 1	18.15	17.05
Municipal Police Member Coverage Plan 1	8.50	10.40
Municipal Police Member Coverage Plan 2	8.50	15.40
Municipal Police Member Coverage Plan 3	8.50	18.90
Municipal Police Member Coverage Plan 4	13.85	18.90
Municipal Police Member Coverage Plan 5	17.80	18.90
Municipal Fire Member Coverage Plan 1	9.50	11.40
Municipal Fire Member Coverage Plan 2	9.50	17.90
Municipal Fire Member Coverage Plan 3	9.50	21.65
Municipal Fire Member Coverage Plan 4	14.30	21.65
Municipal Fire Member Coverage Plan 5	17.70	21.65

Interest is credited to member contributions on each June 30 at the rates set annually by the Retirement Board. Effective July 1, 2012, the interest crediting rate for member contributions is 2%.

* For employees whose annual salary is \$20,000 or less, the employee contribution rates shown above are reduced by 1.5%