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**Public Employees Retirement Association (PERA)
of New Mexico
Annual Actuarial Valuation
as of June 30, 2011**





Cavanaugh Macdonald

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The experience and dedication you deserve

October 27, 2011

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, 2011; 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, 2011 and ending June 30, 2012 (FY 2012). 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. Based on a recent study of the economic assumptions used in the valuation, the investment rate of return was decreased from 8.00% to 7.75% for the June 30, 2011 valuation. The valuation results also include the following changes in plan provisions since the previous valuation was completed:

- Employee contribution rates will be increased by 3.25% for State Employees earning more than \$20,000 in accordance with HB 668. The contribution rate changes are as follows:
 - Extends the 1.5% contribution shift from employer to employee (implemented for FY 2010 and FY 2011) for another two years;
 - Adds an additional 1.75% contribution shift for FY 2012 and FY 2013; and
 - Adds a temporary provision to allow the FY 2013 shift to sunset contingent on two general fund revenue forecasts at mid-year FY 2012 being met.

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- For State General and Municipal General Members first hired on or after July 1, 2010, normal retirement age and service requirements were changed as follows:
 - Any age with 30 or more years of service credit;
 - Age 67 with 5 or more years of service credit; or
 - Any age if the sum of the member's age and years of service credit equals at least 80.

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,

A handwritten signature in blue ink, appearing to read 'John J. Garrett'.

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

A handwritten signature in blue ink, appearing to read 'Jonathan T. Craven'.

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



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Section I: Board Summary

The table below summarizes the results of the June 30, 2011 actuarial valuation as compared with the prior year.

Table I-1(a): Comparative Summary of Principal Results (All PERA Divisions)

Valuation Date	June 30, 2011	June 30, 2010
Total Annual Payroll	\$ 1,935,013,761	\$ 1,993,516,921
Total Valuation Payroll	\$ 2,012,414,311	\$ 2,083,225,182
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 6,593,750,922	\$ 6,453,015,574
Retired Members and Survivors	<u>10,232,641,487</u>	<u>9,148,445,886</u>
Total	\$ 16,826,392,409	\$ 15,601,461,460
Actuarial Value of Assets	\$ 11,855,217,373	\$ 12,243,712,850
Funded Ratio	70.5 %	78.5 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - Actuarial Value of Assets)	\$ 4,971,175,036	\$ 3,357,748,610
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	13.13 %	13.95 %
Member Contribution Rate	<u>11.98 %</u>	<u>11.11 %</u>
Total	25.11 %	25.06 %
Less Normal Cost:		
Retirement	16.11 %	16.06 %
Termination	3.64 %	3.50 %
Pre-Retirement Survivors	0.51 %	0.50 %
Disability	<u>0.59 %</u>	<u>0.59 %</u>
Total Normal Cost	20.85 %	20.65 %
Amount Remaining to Amortize UAAL	4.26 %	4.41 %
Amortization Period	Infinite	Infinite
Increase in Statutory Rate Necessary to Amortize UAAL over 30 Years	9.38 %	4.24 %



Section I: Board Summary

Summary of Key Findings – PERA

An objective of the Board's funding policy is to maximize the stability in the statutory contribution rates while maintaining the adequacy of funding necessary for the actuarial soundness of each Division in the Fund. The Board has set forth criteria for measuring actuarial soundness and making recommendations for adjustments to the statutory rates of each Division. The funding method for PERA determines the sufficiency of statutorily required contribution rates to fund the annual normal cost plus an amount to fully amortize the unfunded actuarial accrued liability (UAAL) over 30 years for each Division.

The investment earnings of PERA is allocated on the basis of each Divisions' share of the total PERA Fund balance as of the valuation date. Therefore, each Division shares in the asset experience of the total Fund.

- The total PERA Fund experienced a gain on the market value of assets of approximately \$2.2 billion as a result of the 22.46% investment return. The actuarial value of assets smooth the unexpected portion of the market return over a four year period. The return on the actuarial value of assets was -1.18% due to the recognition of approximately \$1.5 billion in combined investment losses deferred from the 2008 and 2009 plan years. As of June 30, 2011, the actuarial value of assets is 99.0% of market value. Table III-4 provides the development of the actuarial value of assets.
- The total actuarial loss due to the investment experience of the total PERA Fund is \$1,109 million. This loss was partially offset by non-investment related gains that total \$73 million. The net loss due to the plan's experience was \$1,036 million. As a result of the Board's adoption of changes to the economic assumptions, the actuarial liabilities increased by \$392 million.
- The total increase to the UAAL of PERA is \$1,614 million and reflects a decrease to the funded ratio from 78.5% to 70.5%. The funded ratio was expected to decline to 77.0%.

The summary of results and discussion of key findings for each Division begins on the following page.

Section I: Board Summary



Table I-1(b): Comparative Summary of Principal Results (State General Division)

Valuation Date	June 30, 2011	June 30, 2010
Total Annual Payroll	\$ 818,428,532	\$ 866,094,897
Total Valuation Payroll	\$ 851,165,673	\$ 905,069,167
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 2,932,035,088	\$ 2,900,892,204
Retired Members and Survivors	<u>4,551,324,489</u>	<u>4,086,348,920</u>
Total	\$ 7,483,359,577	\$ 6,987,241,124
Actuarial Value of Assets	\$ 4,883,299,367	\$ 5,053,620,284
Funded Ratio	65.3 %	72.3 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - Actuarial Value of Assets)	\$ 2,600,060,210	\$ 1,933,620,840
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	13.34 %	15.09 %
Member Contribution Rate	<u>10.67 %</u>	<u>8.92 %</u>
Total	24.01 %	24.01 %
Less Normal Cost:		
Retirement	14.52 %	14.63 %
Termination	3.75 %	3.60 %
Pre-Retirement Survivors	0.40 %	0.40 %
Disability	<u>0.59 %</u>	<u>0.59 %</u>
Total Normal Cost	19.26 %	19.22 %
Amount Remaining to Amortize UAAL	4.75 %	4.79 %
Amortization Period	Infinite	Infinite
Increase in Statutory Rate Necessary to Amortize UAAL over 30 Years	12.11 %	6.67 %



Section I: Board Summary

Summary of Key Findings – State General Division

The UAAL increased from \$1,934 million to \$2,600 million and results in a 5.44% of payroll increase to the annual amount necessary to amortize the UAAL over a 30-year period. The funded ratio was expected to decrease from 72.3% to 72.2% over the plan year but due to the net actuarial experience loss, the ratio has decreased to 65.3%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The State General Division experienced a net actuarial loss of \$383.5 million and a 5.4% decrease to the expected funded ratio during the plan year ended June 30, 2011. The loss is primarily comprised of a \$431.4 million investment related loss which was partially offset by a \$47.9 million gain due to non-investment related experience. The changes to the economic assumptions resulted in an additional increase in actuarial liabilities of \$165.7 million and a decrease of 1.5% to the funded ratio. Table IV-4 provides the detailed information on the sources and magnitude of actuarial gains and losses.
- The financing period for the unfunded liability based upon the statutory contribution rates is an infinite period for the third consecutive year and therefore does not satisfy the Board's funding objectives. In accordance with the Board's Funding and Contribution Policies, a recommendation to increase the State General Division statutory rates is necessary.
- We recommend the Board consider a 2% annual increase in the statutory rates for each year over a four-year period which is the maximum allowed for consideration under the Board's policies.

Section I: Board Summary



Table I-1(c): Comparative Summary of Principal Results (State Police/Corrections Division)

Valuation Date	June 30, 2011	June 30, 2010
Total Annual Payroll	\$ 83,759,230	\$ 87,783,090
Total Valuation Payroll	\$ 87,109,599	\$ 91,733,329
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 329,911,283	\$ 321,145,060
Retired Members and Survivors	<u>517,197,432</u>	<u>462,301,606</u>
Total	\$ 847,108,715	\$ 783,446,666
Actuarial Value of Assets	\$ 862,058,143	\$ 889,169,394
Funded Ratio	101.8 %	113.5 %
Unfunded Actuarial Accrued Liability (UAAL) <i>(AAL - Actuarial Value of Assets)</i>	\$ (14,949,428)	\$ (105,722,728)
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	21.93 %	23.68 %
Member Contribution Rate	<u>10.48 %</u>	<u>8.72 %</u>
Total	32.41 %	32.40 %
Less Normal Cost:		
Retirement	26.75 %	26.09 %
Termination	3.16 %	2.99 %
Pre-Retirement Survivors	0.94 %	0.92 %
Disability	<u>1.28 %</u>	<u>1.26 %</u>
Total Normal Cost	32.13 %	31.26 %
Amount Remaining to Amortize UAAL	0.28 %	1.14 %
Amortization Period	0	0



Section I: Board Summary

Summary of Key Findings – State Police/Corrections Division

The current actuarial value of assets in excess of liabilities decreased from \$105.7 million to \$14.9 million. The normal cost rate increased from 31.26% to 32.13% which in turn decreased the margin in the statutory rates to 0.28% of payroll. The funded ratio was expected to decline slightly from 113.5% to 112.7% over the plan year but due to a net actuarial experience loss the ratio has decreased further to 101.8%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The State Police/Corrections Division experienced a net actuarial loss of \$67.9 million and a decrease of 8.0% in the expected funded ratio during the plan year ended June 30, 2011. The loss is comprised of an \$83.8 million investment related loss which was partially offset by a \$15.9 million gain due to non-investment related experience. The changes to the economic assumptions resulted in an additional increase in actuarial liabilities of \$23.5 million and a decrease of 2.9% to the funded ratio. Table IV-4 provides the detailed information on the sources and magnitude of actuarial gains and losses for the State Divisions.
- This Division does not meet the criteria to recommend adjusting the statutory rates.

Section I: Board Summary



Table I-1(d): Comparative Summary of Principal Results (Municipal General Division)

Valuation Date	June 30, 2011	June 30, 2010
Total Annual Payroll	\$ 736,339,828	\$ 747,207,121
Total Valuation Payroll	\$ 765,793,421	\$ 780,831,441
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 2,133,411,017	\$ 2,087,490,185
Retired Members and Survivors	<u>2,987,039,012</u>	<u>2,650,849,435</u>
Total	\$ 5,120,450,029	\$ 4,738,339,620
Actuarial Value of Assets	\$ 3,845,662,093	\$ 3,960,653,469
Funded Ratio	75.1 %	83.6 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - Actuarial Value of Assets)	\$ 1,274,787,936	\$ 777,686,151
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	9.43 %	9.42 %
Member Contribution Rate	<u>12.07 %</u>	<u>12.10 %</u>
Total	21.50 %	21.52 %
Less Normal Cost:		
Retirement	12.05 %	12.14 %
Termination	4.08 %	3.93 %
Pre-Retirement Survivors	0.60 %	0.59 %
Disability	<u>0.53 %</u>	<u>0.52 %</u>
Total Normal Cost	17.26 %	17.18 %
Amount Remaining to Amortize UAAL	4.24 %	4.34 %
Amortization Period	Infinite	44 years
Increase in Statutory Rate Necessary to Amortize UAAL over 30 Years	4.95 %	1.00 %



Section I: Board Summary

Summary of Key Findings – Municipal General Division

The UAAL increased from \$778 million to \$1,275 million and results in an increase to the amortization period from 44 years to an infinite period. As of the June 30, 2011 valuation, the current statutory contribution rates would require a 4.95% of payroll increase in order to amortize the UAAL over a 30-year period. The funded ratio was expected to increase from 83.6% to 84.1% over the plan year but due to the net actuarial experience loss, the ratio has decreased to 75.1%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The Municipal General Division experienced a net actuarial loss of \$365.0 million and a 7.3% decrease to the expected funded ratio during the plan year ended June 30, 2011. The loss is comprised of a \$372.7 million investment related loss which was partially offset by a \$7.7 million gain due to non-investment related experience. The changes to the economic assumptions resulted in an additional increase in actuarial liabilities of \$112.8 million and a decrease of 1.7% to the funded ratio. Table IV-5 provides the detailed information on the sources and magnitude of actuarial gains and losses.
- The financing period for the unfunded liability based upon the statutory contribution rates exceeds the 30-year period of the Board's funding objectives for the second year but only exceeds the 30 year period by at least 15 years for one year. In accordance with the Board's Funding and Contribution Policies, this Division does not meet the criteria to recommend adjusting the statutory rates. However, we project that under current statutory rates, the criteria will be established next year and the funded position of this Division is expected to deteriorate long-term without increases to the statutory rates.
- We recommend the Board consider a 2% annual increase in the statutory rates for each year over a four-year period which is the maximum allowed for consideration under the Board's policies.

Section I: Board Summary



Table I-1(e): Comparative Summary of Principal Results (Municipal Police Division)

Valuation Date	June 30, 2011	June 30, 2010
Total Annual Payroll	\$ 188,010,463	\$ 186,026,978
Total Valuation Payroll	\$ 195,530,882	\$ 194,398,192
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 783,106,941	\$ 744,069,303
Retired Members and Survivors	<u>1,364,283,320</u>	<u>1,222,836,589</u>
Total	\$ 2,147,390,261	\$ 1,966,905,892
Actuarial Value of Assets	\$ 1,527,062,745	\$ 1,575,381,241
Funded Ratio	71.1 %	80.1 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - Actuarial Value of Assets)	\$ 620,327,516	\$ 391,524,651
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	18.20 %	18.19 %
Member Contribution Rate	<u>15.67 %</u>	<u>15.62 %</u>
Total	33.87 %	33.81 %
Less Normal Cost:		
Retirement	27.29 %	26.97 %
Termination	2.58 %	2.47 %
Pre-Retirement Survivors	0.43 %	0.42 %
Disability	<u>0.65 %</u>	<u>0.64 %</u>
Total Normal Cost	30.95 %	30.50 %
Amount Remaining to Amortize UAAL	2.92 %	3.31 %
Amortization Period	Infinite	Infinite
Increase in Statutory Rate Necessary to Amortize UAAL over 30 Years	14.59 %	7.49 %



Section I: Board Summary

Summary of Key Findings – Municipal Police Division

The UAAL increased from \$391.5 million to \$620.3 million and results in a 7.10% of payroll increase to the annual amount necessary to amortize the UAAL over a 30-year period. The funded ratio was expected to remain at 80.1% over the plan year but due to the net actuarial experience loss, the ratio has further decreased to 71.1%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The Municipal Police Division experienced a net actuarial loss of \$145.2 million and a 7.0% decrease to the expected funded ratio during the plan year ended June 30, 2011. The loss is comprised of a \$148.6 million investment related loss which was partially offset by a \$3.4 million gain due to non-investment related experience. The changes to the economic assumptions resulted in an additional increase in actuarial liabilities of \$58.0 million and a decrease of 2.0% to the funded ratio. Table IV-5 provides the detailed information on the sources and magnitude of actuarial gains and losses.
- The financing period for the unfunded liability based upon the statutory contribution rates is an infinite period for the third consecutive year and therefore does not satisfy the Board's funding objectives. In accordance with the Board's Funding and Contribution Policies, a recommendation to increase the Municipal Police Division statutory rates is necessary.
- We recommend the Board consider a 2% annual increase in the statutory rates for each year over a four-year period which is the maximum allowed for consideration under the Board's policies.

Section I: Board Summary



Table I-1(f): Comparative Summary of Principal Results (Municipal Fire Division)

Valuation Date	June 30, 2011	June 30, 2010
Total Annual Payroll	\$ 108,475,708	\$ 106,404,835
Total Valuation Payroll	\$ 112,814,736	\$ 111,193,053
Actuarial Accrued Liability (AAL)		
Active and Deferred Vested Members	\$ 415,286,593	\$ 399,418,822
Retired Members and Survivors	<u>812,797,234</u>	<u>726,109,336</u>
Total	\$ 1,228,083,827	\$ 1,125,528,158
Actuarial Value of Assets	\$ 737,135,025	\$ 764,888,462
Funded Ratio	60.0 %	68.0 %
Unfunded Actuarial Accrued Liability (UAAL) (AAL - Actuarial Value of Assets)	\$ 490,948,802	\$ 360,639,696
Calculation of Required Contribution		
Statutory Contribution Rate		
Employer Contribution Rate	21.06 %	21.05 %
Member Contribution Rate	<u>16.00 %</u>	<u>15.99 %</u>
Total	37.06 %	37.04 %
Less Normal Cost:		
Retirement	28.17 %	27.95 %
Termination	1.97 %	1.88 %
Pre-Retirement Survivors	0.49 %	0.48 %
Disability	<u>0.38 %</u>	<u>0.37 %</u>
Total Normal Cost	31.01 %	30.68 %
Amount Remaining to Amortize UAAL	6.05 %	6.36 %
Amortization Period	Infinite	Infinite
Increase in Statutory Rate Necessary to Amortize UAAL over 30 Years	17.97 %	11.04 %



Section I: Board Summary

Summary of Key Findings – Municipal Fire Division

The UAAL increased from \$360.6 million to \$490.9 million and results in a 6.93% of payroll increase to the annual amount necessary to amortize the UAAL over a 30-year period. The funded ratio was expected to decline from 68.0% to 67.8% over the plan year but due to the net actuarial experience loss, the ratio has decreased further to 60.0%. Table IV-3 provides the reconciliation of the UAAL. In the course of preparing the valuation report, we note the following key findings:

- The Municipal Fire Division experienced a net actuarial loss of \$74.5 million and a 6.2% decrease to the expected funded ratio during the plan year ended June 30, 2011. The loss is comprised of a \$72.8 million investment related loss and a \$1.7 million loss due to non-investment related experience. The changes to the economic assumptions resulted in an additional increase in actuarial liabilities of \$31.4 million and a decrease of 1.6% to the funded ratio. Table IV-5 provides the detailed information on the sources and magnitude of actuarial gains and losses.
- The financing period for the unfunded liability based upon the statutory contribution rates is an infinite period for the third consecutive year and therefore does not satisfy the Board's funding objectives. In accordance with the Board's Funding and Contribution Policies, a recommendation to increase the Municipal Fire Division statutory rates is necessary.
- We recommend the Board consider a 2% annual increase in the statutory rates for each year over a four-year period which is the maximum allowed for consideration under the Board's policies.

Section II of the report provides summarized information on the membership data used in the valuation. Section III covers the Fund's assets and Section IV covers the Fund's liabilities. The results of the valuation are provided in Section V and the accounting information is in Section VI. The appendices provide additional information on A) the Fund members; B) the actuarial assumptions and methods; and C) the summary of the benefit provisions of the Fund. It is important to note that all information contained in this report for periods prior to June 30, 2010 were produced by a prior actuarial consulting firm.



Section II: Membership Data

Data regarding the membership of the Fund for use in the valuation were furnished by PERA. The following tables summarize the membership data as of June 30, 2011.

Table II-1: Summary of Membership Data as of June 30, 2011

Group	Count					Totals
	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire	
Total Active Members	19,614	1,881	20,848	3,603	2,111	48,057
Inactive Members						
Deferred Vested	2,251	101	1,492	123	62	4,029
Other	1,917	190	2,721	222	84	5,134
Total Inactive Members	4,168	291	4,213	345	146	9,163
Retirees						
Service*	11,507	1,051	7,802	2,300	1,386	24,046
Disabled	434	28	316	28	14	820
Beneficiaries	1,698	148	1,420	246	148	3,660
Total Retirees	13,639	1,227	9,538	2,574	1,548	28,526
Totals	37,421	3,399	34,599	6,522	3,805	85,746

* Counts include Co-Payees as follows:

State General—193

State Police—60

Municipal General—219

Municipal Police—219

Municipal Fire—102

Section II: Membership Data



Table II-2: Summary of Active Membership Valuation Data

Division	Number		Total Payroll		Average Salary	
	2011	2010	2011	2010	2011	2010
State Division						
General	19,614	20,867	\$ 818,428,532	\$ 866,094,898	\$41,727	\$41,505
Police	492	533	29,653,012	31,353,041	60,270	58,824
Adult Corrections	1,089	1,154	43,140,450	44,572,837	39,615	38,625
Juvenile Corrections	300	314	10,965,768	11,857,211	36,553	37,762
Total State Division	21,495	22,868	\$ 902,187,762	\$ 953,877,987	\$41,972	\$41,712
Municipal Division						
General Coverage Plans						
Plan 1	1,351	1,369	\$ 30,747,862	\$ 33,590,030	\$22,759	\$24,536
Plan 2	5,875	5,467	190,261,713	184,287,446	32,385	33,709
Plan 3	12,300	12,431	463,763,684	477,293,179	37,704	38,395
Plan 4	682	702	22,262,166	23,551,389	32,642	33,549
Detention Officers Plan 1	640	615	29,304,403	28,485,077	45,788	46,317
Total General	20,848	20,584	\$ 736,339,828	\$ 747,207,121	\$35,319	\$36,300
Police Coverage Plans						
Plan 1	148	143	\$ 5,587,977	\$ 5,581,898	\$37,757	\$39,034
Plan 2	78	87	2,549,522	3,017,489	32,686	34,684
Plan 3	51	56	2,155,296	2,263,197	42,261	40,414
Plan 4	131	141	5,829,428	6,551,633	44,499	46,465
Plan 5	3,195	3,154	171,888,240	168,612,761	53,799	53,460
Total Police	3,603	3,581	\$ 188,010,463	\$ 186,026,978	\$52,182	\$51,948
Fire Coverage Plans						
Plan 1	58	51	\$ 1,904,385	\$ 1,953,665	\$32,834	\$38,307
Plan 2	10	9	367,015	326,139	36,702	36,238
Plan 3	4	6	166,684	279,480	41,671	46,580
Plan 4	13	14	511,048	548,654	39,311	39,190
Plan 5	2,026	1,984	105,526,576	103,296,897	52,086	52,065
Total Fire	2,111	2,064	\$ 108,475,708	\$ 106,404,835	\$51,386	\$51,553
Total Municipal Division	26,562	26,229	\$1,032,825,999	\$1,039,638,934	\$38,884	\$39,637
Total PERA	48,057	49,097	\$1,935,013,761	\$1,993,516,921	\$40,265	\$40,604

Section II: Membership Data



Table II-3: Summary of Deferred Vested Members as of June 30, 2011

Division	Number	Average Age	Average Service	Average Annual Benefit
State Division				
General	2,251	52.06	9.05	\$ 11,098
Police/Hazardous Duty	<u>101</u>	<u>48.08</u>	<u>9.45</u>	<u>9,024</u>
Total State Division	2,352	51.89	9.07	\$ 11,009
Municipal Division				
General	1,492	52.23	9.17	\$ 8,691
Police	123	45.58	8.63	10,639
Fire	<u>62</u>	<u>43.87</u>	<u>6.93</u>	<u>10,310</u>
Total Municipal Division	1,677	51.43	9.05	\$ 8,894
PERA Totals	4,029	51.70	9.06	\$ 10,128



Section II: Membership Data

Table II-4: Summary of Retirees and Survivors as of June 30, 2011

Type of Retirement	Division					Total
	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire	
Service						
Number	11,507	1,051	7,802	2,300	1,386	24,046
Total Annual Benefits	\$310,658,444	\$ 31,657,390	\$193,180,102	\$81,555,711	\$49,818,700	\$666,870,346
Avg Annual Benefit	\$ 26,997	\$ 30,121	\$ 24,760	\$ 35,459	\$ 35,944	\$ 27,733
Avg Age	67.96	61.52	67.01	58.06	59.89	65.96
Disability						
Number	434	28	316	28	14	820
Total Annual Benefits	\$ 6,368,534	\$ 404,121	\$ 4,368,091	\$ 539,057	\$ 309,846	\$ 11,989,648
Avg Annual Benefit	\$ 14,674	\$ 14,433	\$ 13,823	\$ 19,252	\$ 22,132	\$ 14,622
Avg Age	54.57	54.03	54.28	47.64	50.55	54.13
Survivors						
Number	1,698	148	1,420	246	148	3,660
Total Annual Benefits	\$ 25,116,709	\$ 2,834,678	\$ 19,587,970	\$ 5,032,745	\$ 3,719,504	\$ 56,291,606
Avg Annual Benefit	\$ 14,792	\$ 19,153	\$ 13,794	\$ 20,458	\$ 25,132	\$ 15,380
Avg Age	69.74	61.08	68.75	63.20	68.38	68.51
Total						
Number	13,639	1,227	9,538	2,574	1,548	28,526
Total Annual Benefits	\$342,143,687	\$ 34,896,189	\$217,136,162	\$87,127,512	\$53,848,050	\$735,151,600
Avg Annual Benefit	\$ 25,086	\$ 28,440	\$ 22,765	\$ 33,849	\$ 34,786	\$ 25,771
Avg Age	67.76	61.30	66.85	58.44	60.62	65.95

Section II: Membership Data



Table II-5: Summary of Historical Valuation Data by Division

Valuation Date	Number	Annual Payroll	Average Annual Pay	% Change In Average Pay
State General Division				
6/30/2011	19,614	\$ 818,428,532	\$ 41,727	0.53 %
6/30/2010	20,867	866,094,897	41,505	(0.31)%
6/30/2009	22,479	935,865,642	41,633	3.48 %
6/30/2008	22,237	894,630,779	40,232	2.61 %
6/30/2007	21,783	854,098,264	39,209	13.80 %
State Police/Corrections Division				
6/30/2011	1,881	\$ 83,759,230	\$ 44,529	1.50 %
6/30/2010	2,001	87,783,090	43,870	(3.83)%
6/30/2009	2,087	95,202,963	45,617	(0.01)%
6/30/2008	1,973	90,011,901	45,622	4.02 %
6/30/2007	1,903	83,460,844	43,858	39.31 %
Municipal General Division				
6/30/2011	20,848	\$ 736,339,828	\$ 35,319	(2.70)%
6/30/2010	20,584	747,207,121	36,300	11.61 %
6/30/2009	23,448	762,628,387	32,524	3.06 %
6/30/2008	22,632	714,264,532	31,560	0.06 %
6/30/2007	22,375	705,762,180	31,542	0.22 %
Municipal Police Division				
6/30/2011	3,603	\$ 188,010,463	\$ 52,182	0.45 %
6/30/2010	3,581	186,026,978	51,948	3.65 %
6/30/2009	3,701	185,497,931	50,121	4.00 %
6/30/2008	3,581	172,583,579	48,194	(1.09)%
6/30/2007	3,524	171,701,392	48,723	5.36 %
Municipal Fire Division				
6/30/2011	2,111	\$ 108,475,708	\$ 51,386	(0.32)%
6/30/2010	2,064	106,404,835	51,553	3.39 %
6/30/2009	2,047	102,064,575	49,861	5.40 %
6/30/2008	1,978	93,573,369	47,307	(0.73)%
6/30/2007	1,962	93,496,935	47,654	(1.28)%

Table II-6: Summary of Historical Valuation Data for All Divisions

Valuation Date	Number	Annual Payroll	Average Annual Pay	% Change In Average Pay
6/30/2011	48,057	\$ 1,935,013,761	\$ 40,265	(0.83)%
6/30/2010	49,097	1,993,516,921	40,604	4.89 %
6/30/2009	53,762	2,081,259,498	38,712	3.23 %
6/30/2008	52,401	1,965,064,160	37,501	1.28 %
6/30/2007	51,547	1,908,519,615	37,025	7.65 %



Section III: PERA Assets

The following tables provide a summary of PERA's market value and actuarial value of assets (excluding Legislative Division) as of June 30, 2011.

Table III-1: Market Value Summary as of June 30, 2011

Division	June 30, 2011	June 30, 2010
State General	\$ 4,930,875,175	\$ 4,126,638,822
State Police/Corrections	870,456,791	726,069,775
Municipal General	3,883,128,663	3,234,154,022
Municipal Police	1,541,940,236	1,286,410,340
Municipal Fire	<u>744,316,603</u>	<u>624,585,593</u>
Total Market Value of Assets	\$ 11,970,717,468	\$ 9,997,858,552

Table III-2: Actuarial Value Summary as of June 30, 2011

Division	June 30, 2011	June 30, 2010
State General	\$ 4,883,299,367	\$ 5,053,620,284
State Police/Corrections	862,058,143	889,169,394
Municipal General	3,845,662,093	3,960,653,469
Municipal Police	1,527,062,745	1,575,381,241
Municipal Fire	<u>737,135,025</u>	<u>764,888,462</u>
Total Actuarial Value of Assets	\$ 11,855,217,373	\$ 12,243,712,850

Section III: PERA Assets



The following tables provide information on the PERA's assets at market value and cash flow.

Table III-3: Market Value Reconciliation (Total PERA with Legislature)

	June 30, 2011	June 30, 2010
Beginning of Year Market Value	\$ 10,015,925,839	\$ 8,795,819,080
Audit Adjustment	-	3,523,053
Revised Beginning of Year Market Value	\$ 10,015,925,839	\$ 8,799,342,133
Revenues:		
a. Member Contributions	216,940,922	224,330,056
b. Employer Contributions	283,376,830	291,117,878
c. Purchases of Service	15,525,391	6,185,738
d. Investment Income		
1. Adjustments of investments to market value	1,573,881,319	854,033,811
2. Interest, dividends, etc.	240,372,230	251,031,884
3. Realized gains (losses)	417,019,522	158,891,910
4. Security lending	(21,840,202)	147,575,251
e. Other Income	46,881,672	201,793
f. Total Revenues	\$ 2,772,157,684	\$ 1,933,368,321
Expenditures:		
a. Benefit Payments	716,679,792	653,727,922
b. Refunds of Member Contributions	43,107,776	32,734,673
c. Administrative and Investment Expenses	33,841,256	30,322,020
d. Total Expenditures	\$ 793,628,824	\$ 716,784,615
End of Year Market Value	\$ 11,994,454,699	\$ 10,015,925,839

The market value rate of return for the plan year is 22.46%. PERA's cash flow is -2.52% as a percentage of average market value. A mature system such as PERA is expected to exhibit negative net cash flow as the number of members receiving benefit payments becomes a larger portion of total membership. There are 1.68 contributing active members for each member receiving a benefit as of June 30, 2011. We expect this measure to decline over future years and result in an increase in the percentage of negative cash flow.



Section III: PERA Assets

The actuarial value of assets represents a "smoothed" value developed with the purpose of dampening the impact of market volatility on the assets used in determining valuation results. The actuarial value of assets has been calculated by spreading the recognition of excess investment income over four years. The amount of excess investment income in each year is the difference between expected actuarial value investment income and actual market value investment income. Table III-4 provides the calculation of the amount of the current year excess investment income to be phased-in as well as the amount of deferred investment income from the prior years.

**Table III-4: Development of Actuarial Value of Assets as of June 30, 2011
(Total PERA with Legislative Division)**

A. Actuarial Value Beginning of Year		\$	12,265,838,656
B. Market Value End of Year			11,994,454,699
C. Market Value Beginning of Year			10,015,925,839
D. Cash Flow			
D1. Contributions		\$	500,317,752
D2. Service Purchases			15,525,391
D3. Benefit Payments and Refunds			(759,787,568)
D4. Net		\$	(243,944,425)
E. Investment Income			
E1. Market Total (B - C - D4)		\$	2,222,473,285
E2. Assumed Rate			8.00%
E3. Amount for Immediate Recognition			971,509,315
E4. Amount for Phased-In Recognition			1,250,963,970
F. Phased-In Recognition of Investment Income			
F1. Current Year: 0.25 *E4		\$	312,740,993
F2. First Prior Year (2009/2010)	\$ 381,994,416 x 25%		95,498,604
F3. Second Prior Year (2008/2009)	(4,053,964,235) x 25%		(1,013,491,059)
F4. Third Prior Year (2007/2008)	(2,037,706,040) x 25%		(509,426,510)
F5. Total Recognized Investment Gain		\$	(1,114,677,972)
G. Audit Adjustment		\$	-
H. Actuarial Value End of Year			\$ 11,878,725,574
(A + D4 + E3 + F5 + G)			
I. Difference Between Market & Actuarial Values		\$	115,729,125
J. Rate of Return on Actuarial Value			(1.18)%
K. Actuarial Value as a Percentage of Market Value			99.0 %



Table III-5: Allocation of Actuarial Value by Division as of June 30, 2011

	State Division		PERA Totals w/o Legislative
	General	Police	
Member Contribution Fund	\$ 796,011,595	\$ 53,270,846	\$ 2,153,843,799
Employer Contribution Fund	1,536,228,209	403,697,721	3,646,628,982
Retirement Reserve Fund	2,598,635,371	413,488,224	6,170,244,687
Total Fund Balances	\$ 4,930,875,175	\$ 870,456,791	\$ 11,970,717,468
Approximate % of Total Fund Balance*	41.19%	7.27%	100%
Actuarial Value Adjustment*	(47,575,808)	(8,398,648)	(115,500,095)
Total Actuarial Value of Assets	\$ 4,883,299,367	\$ 862,058,143	\$ 11,855,217,373

	Municipal Division			PERA Totals w/o Legislative
	General	Police	Fire	
Member Contribution Fund	\$ 926,331,337	\$ 231,902,509	\$ 146,327,512	\$ 2,153,843,799
Employer Contribution Fund	1,099,196,144	463,654,875	143,852,033	3,646,628,982
Retirement Reserve Fund	1,857,601,182	846,382,852	454,137,058	6,170,244,687
Total Fund Balances	\$ 3,883,128,663	\$ 1,541,940,236	\$ 744,316,603	\$ 11,970,717,468
Approximate % of Total Fund Balance*	32.44%	12.88%	6.22%	100.00%
Actuarial Value Adjustment*	(37,466,570)	(14,877,491)	(7,181,578)	(115,500,095)
Total Actuarial Value of Assets	\$ 3,845,662,093	\$ 1,527,062,745	\$ 737,135,025	\$ 11,855,217,373

* The actuarial value adjustment is the difference between the actuarial value of assets derived in Table III-4 and the total fund balance at market value. It was allocated to each group in proportion to the Total PERA Fund Balance. Please note that the Legislature Division accounted for approximately 0.20% of the Total PERA Fund Balance and is detailed in a separate report.



Section III: PERA Assets

The actuarial valuation assumes the rate of investment return on the assets of the Fund is 7.75% annually beginning with the June 30, 2011 valuation; the assumed rate of return was 8.00% for the prior valuation. This assumption is based upon the reasonable long-term expected return on the assets. In each year, the Fund will experience actuarial gains and losses due to the actual investment return of the assets. Table III-6 provides the calculation of the gain or loss due to the investment experience on the actuarial value of assets for the year ending June 30, 2011.

Table III-6: Actuarial Investment Gain (Loss) for the Year Ending June 30, 2011
(Dollar Amounts in Millions)

	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire	Total
1. Beginning of Year Actuarial Value of Assets (AVA)	\$ 5,053.6	\$ 889.2	\$ 3,960.7	\$ 1,575.4	\$ 764.9	\$12,243.7
2. Employee and Employer Contributions	210.1	21.1	175.3	64.8	38.4	509.7
3. Benefit Payments	(347.8)	(35.0)	(232.2)	(89.6)	(53.9)	(758.5)
4. Interest [1 x 8.00% + (2 + 3) x 8.00% x 0.5]	398.8	70.6	314.6	125.0	60.6	969.5
5. Expected End of Year AVA (1 + 2 + 3 + 4)	\$ 5,314.7	\$ 945.9	\$ 4,218.4	\$ 1,675.6	\$ 810.0	\$12,964.4
6. Actual End of Year AVA	4,883.3	862.1	3,845.7	1,527.1	737.1	11,855.2
7. Actuarial Investment Gain (Loss) (6 - 5)	\$ (431.4)	\$ (83.8)	\$ (372.7)	\$ (148.5)	\$ (72.9)	\$ (1,109.2)



Statutory Reserve Transfers

Each year following receipt of the report of the annual actuarial valuation, the excess, if any, of the actuarial present value of pensions and refunds being paid or likely to be paid to members and survivors over the balance in the retirement reserve fund (RRF) shall be transferred to the retirement reserve fund from the employers accumulation fund (EAF). Table III-7 shows the necessary transfer amounts.

Table III-7: Statutory Reserve Transfers as of June 30, 2011

Division	Reported Fund Balances	Actuarial Present Value of Pensions Being Paid	Transfer
State General			
Members Contribution Fund	\$ 796,011,595		
Employers Accumulation Fund	1,536,228,209		\$ (1,952,689,118)
Retirement Reserve Fund	2,598,635,371	\$ 4,551,324,489	1,952,689,118
State Police/Corrections			
Members Contribution Fund	53,270,846		
Employers Accumulation Fund	403,697,721		(103,709,208)
Retirement Reserve Fund	413,488,224	517,197,432	103,709,208
Municipal General			
Members Contribution Fund	926,331,337		
Employers Accumulation Fund	1,099,196,144		(1,129,437,830)
Retirement Reserve Fund	1,857,601,182	2,987,039,012	1,129,437,830
Municipal Police			
Members Contribution Fund	231,902,509		
Employers Accumulation Fund	463,654,875		(517,900,468)
Retirement Reserve Fund	846,382,852	1,364,283,320	517,900,468
Municipal Fire			
Members Contribution Fund	146,327,512		
Employers Accumulation Fund	143,852,033		(358,660,176)
Retirement Reserve Fund	454,137,058	812,797,234	358,660,176
Total End of Year Market Value	\$ 11,970,717,468		



Section IV: PERA Liabilities

The total actuarial present value of benefits is the value as of the valuation date of all future benefits expected to be paid to current members of the Fund. An actuarial cost method allocates each individual's present value of benefits to past and future years of service. The actuarial accrued liability includes the portion of the active member present value of benefits allocated to past service as well as the entire present value of benefits for retirees, beneficiaries and inactive members. The portion of the actuarial present value allocated to the future service of active members is called the present value of future normal costs. Table IV-1 presents the calculation and allocation of the actuarial present value of benefits.

Table IV-1: Calculation and Allocation of the Actuarial Present Value as of June 30, 2011

	Actuarial Accrued Liability	Present Value of Future Normal Cost	Total Actuarial Present Value
Active Members			
Service Retirement	\$ 5,896,528,545	\$ 2,661,426,996	\$ 8,557,955,541
Termination Benefits	216,211,373	582,616,500	798,827,873
Survivor Benefits	98,696,328	80,347,346	179,043,674
Disability Retirement	89,018,462	98,506,587	187,525,049
Total for Active Members	\$ 6,300,454,708	\$ 3,422,897,429	\$ 9,723,352,137
Inactive Members	\$ 293,296,213		\$ 293,296,213
Retirees and Beneficiaries			
Service Retirements	\$ 9,386,152,339		\$ 9,386,152,339
Beneficiaries	658,953,033		658,953,033
Disability Retirements	187,536,116		187,536,116
Total for Retirees and Beneficiaries	\$ 10,232,641,488		\$ 10,232,641,488
Total	\$ 16,826,392,409	\$ 3,422,897,429	\$ 20,249,289,838

Under the valuation funding method, an unfunded actuarial accrued liability (UAAL) exists to the extent that the actuarial accrued liability exceeds the actuarial value of assets as presented in Section III. The calculation of the UAAL by Division as of the valuation date is shown in Table IV-2 on the following page.



Section IV: PERA Liabilities

**Table IV-2: Calculation of the Unfunded Actuarial Accrued Liability and Funded Ratio
(Dollar Amounts in Millions)**

	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire
1. Actuarial Accrued Liability	\$ 7,483.4	\$ 847.1	\$ 5,120.5	\$ 2,147.4	\$ 1,228.0
2. Actuarial Value of Assets	4,883.3	862.0	3,845.7	1,527.1	737.2
3. Unfunded Actuarial Accrued Liability (1-2)	2,600.1	(14.9)	1,274.8	620.3	490.9
Funded Ratio (2 / 1)	65.3%	101.8%	75.1%	71.1%	60.0%

Although the terminology used to describe the excess of PERA’s actuarial accrued liability over the actuarial value of assets is call the “unfunded” actuarial accrued liability, the calculated annual contribution rates in the valuation include an annual amortization payment required to fully amortize the UAAL within 30 years. In some cases, the current statutory rates are less than these calculated rates.

The funded ratio is the ratio of the actuarial value of assets (Table III-2) divided by the actuarial accrued liability (Table IV-1) as of the valuation date. As of June 30, 2011, the funded ratio of PERA is 70.46% as compared to a ratio of 78.48% as of June 30, 2010. Due to the recognition of the investment losses from the 2008 and 2009 plan years, there has been a general decline in the funded ratio across all divisions. The ratio is a commonly used measure of the funding progress and can be useful in reviewing the historical trend of a Fund’s funding progress. Such a review should also consider the impact to this measure over the historical period due to changes to fund benefits, changes to the actuarial assumptions and methods, and the significant impact that investment experience can have on the ratio over short-term periods. We caution that no single “point in time” measure can provide a universal basis for comparing one plan’s funded status to another.



Section IV: PERA Liabilities

The calculation of PERA’s actuarial assets and liabilities requires the use of several assumptions concerning the future experience of PERA and its members. In each annual valuation, the latest year of actual experience is compared to that expected by the prior valuation. The differences are actuarial gains and losses which decrease or increase the UAAL. Table IV-3 provides the reconciliation of the UAAL.

Table IV-3: Reconciliation of the UAAL
(Dollar Amounts in Millions)

	State General	State Police/ Corrections	Municipal General	Municipal Police	Municipal Fire
1) Beginning of Year UAAL	\$ 1,933.6	\$ (105.7)	\$ 777.7	\$ 391.5	\$ 360.6
2) Normal Cost	174.0	28.7	134.1	59.3	34.1
3) Contributions	(210.1)	(21.1)	(175.3)	(64.8)	(38.4)
4) Interest [1 x 8.00% + (2 + 3) x 8.00% x 0.5]	153.2	(8.2)	60.6	31.1	28.7
5) Expected UAAL before changes (1 + 2 + 3 + 4)	2,050.7	(106.3)	797.1	417.1	385.0
6) Assumption Changes	165.7	23.5	112.8	58.0	31.4
7) Plan Changes	0.2	0	(0.1)	0	0
8) Expected UAAL after changes (5 + 6 + 7)	2,216.6	(82.8)	909.8	475.1	416.4
9) Actual UAAL	2,600.1	(14.9)	1,274.8	620.3	490.9
10) Total Actuarial Gain (Loss)	(383.5)	(67.9)	(365.0)	(145.2)	(74.5)

Tables IV-4 and IV-5 on the following pages provide details of the sources of actuarial gains and losses for state divisions and municipal divisions respectively.

Section IV: PERA Liabilities



Table IV-4: Actuarial Gains & Losses by Source for State Divisions
(Dollar Amounts in Millions)

Source	State General			State Police/Corrections		
	UAAL	Funded Ratio	Contribution Rate*	UAAL	Funded Ratio	Contribution Rate*
Expected Value	\$2,050.7	72.2 %	12.16 %	(\$106.3)	112.7 %	(6.22)%
Retirement	32.7	(0.5)%	0.27 %	(0.3)	0.0 %	(0.02)%
Disability	7.5	(0.1)%	0.06 %	0.4	(0.0)%	0.02 %
Pre-Retirement Death	(0.7)	0.0 %	(0.01)%	0.1	(0.0)%	0.01 %
Withdrawal	(12.1)	0.2 %	(0.10)%	(3.3)	0.4 %	(0.19)%
Pay Increases	(112.1)	1.6 %	(0.91)%	(19.0)	2.3 %	(1.08)%
New Entrants	21.4	(0.3)%	0.17 %	3.5	(0.4)%	0.20 %
Post-Retirement Death	2.3	(0.0)%	0.02 %	(0.1)	0.0 %	(0.01)%
Data Adjustments	13.1	(0.2)%	0.11 %	2.8	(0.3)%	0.16 %
Other	0.0	0.0 %	0.00 %	0.0	0.0 %	0.00 %
Investment Return	431.4	(6.1)%	3.50 %	83.8	(9.9)%	4.77 %
Total (Gain) or Loss	\$383.5	(5.4)%	3.11 %	\$67.9	(8.0)%	3.86 %
Assumption Changes	165.7	(1.5)%	1.59 %	23.5	(2.9)%	1.41 %
Plan Changes	0.2	0.0 %	0.00 %	0.0	0.0 %	0.00 %
Actual Value	\$2,600.1	65.3 %	16.86 %	(\$14.9)	101.8 %	(0.95)%

* Impact on Contribution Rate based on 30 year period and current valuation payroll.

Section IV: PERA Liabilities



Table IV-5: Actuarial Gains & Losses by Source for Municipal Divisions
(Dollar Amounts in Millions)

Source	Municipal General			Municipal Police			Municipal Fire		
	UAAL	Funded Ratio	Contribution Rate*	UAAL	Funded Ratio	Contribution Rate*	UAAL	Funded Ratio	Contribution Rate*
Expected Value	\$797.1	84.1 %	5.48 %	\$417.1	80.1 %	11.51 %	\$385.0	67.8 %	18.28 %
Retirement	29.6	(0.6)%	0.21 %	11.8	(0.6)%	0.31 %	7.1	(0.6)%	0.33 %
Disability	6.6	(0.1)%	0.05 %	0.8	(0.0)%	0.02 %	1.2	(0.1)%	0.06 %
Pre-Retirement Death	(1.3)	0.0 %	(0.01)%	0.1	(0.0)%	0.00 %	(0.1)	0.0 %	(0.00)%
Withdrawal	(0.9)	0.0 %	(0.01)%	4.1	(0.2)%	0.11 %	2.0	(0.2)%	0.09 %
Pay Increases	(78.5)	1.6 %	(0.56)%	(36.9)	1.8 %	(0.98)%	(17.2)	1.4 %	(0.80)%
New Entrants	22.3	(0.4)%	0.16 %	16.7	(0.8)%	0.44 %	8.1	(0.7)%	0.38 %
Post-Retirement Death	(1.1)	0.0 %	(0.01)%	(0.9)	0.0 %	(0.02)%	0.4	(0.0)%	0.02 %
Data Adjustments	15.4	(0.3)%	0.11 %	1.0	(0.0)%	0.03 %	0.4	(0.0)%	0.02 %
Other	0.2	(0.0)%	0.00 %	(0.1)	0.0 %	(0.00)%	(0.2)	0.0 %	(0.01)%
Investment Return	372.7	(7.4)%	2.67 %	148.6	(7.2)%	3.93 %	72.8	(6.0)%	3.39 %
Total (Gain) or Loss	\$365.0	(7.3)%	2.62 %	\$145.2	(7.0)%	3.84 %	\$74.5	(6.2)%	3.47 %
Assumption Changes	112.8	(1.7)%	1.09 %	58.0	(2.0)%	2.16 %	31.4	(1.6)%	2.27 %
Plan Changes	(0.1)	0.0 %	0.00 %	0.0	0.0 %	0.00 %	0.0	0.0 %	0.00 %
Actual Value	\$1,274.8	75.1 %	9.19 %	\$620.3	71.1 %	17.51 %	\$490.9	60.0 %	24.02 %

* Impact on Contribution Rate based on 30 year period and current valuation payroll.



Section V: Actuarial Valuation Results

Section IV of this report presented PERA's actuarial accrued liability as the portion of the present value of benefits allocated to past years of service. The portion of the active members' present value of benefits allocated to future years of service is funded through annual normal cost contributions comprised of both active member and employer contributions.

The annual required contribution rate is the percentage of valuation payroll necessary to fund the annual normal cost of the Fund and fully amortize the UAAL over 30 years in accordance with the Board's funding objectives. The calculated rate is expected to remain constant over the remaining amortization period and is provided in Table V-1.

Table V-1(a): Valuation Results for State General Division

	June 30, 2011	June 30, 2010
1. Total Valuation Payroll	\$ 851,165,673	\$ 905,069,167
2. Present Value of Future Benefits	8,706,436,469	8,328,136,526
3. Present Value of Future Normal Costs	1,223,076,892	1,340,895,402
4. Actuarial Accrued Liability (2 - 3)	\$7,483,359,577	\$6,987,241,124
5. Actuarial Value of Assets	4,883,299,367	5,053,620,284
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$2,600,060,210	\$1,933,620,840
7. UAAL Amortization Payment (30 year funding)	\$ 143,520,588	\$ 103,730,384
a. Amortization Payment as a Percent of Payroll (7 / 1)	16.86 %	11.46 %
8. Total Normal Cost	\$ 163,952,443	\$ 173,961,119
a. Normal Cost as a Percent of Payroll (8 / 1)	19.26 %	19.22 %
9. Total Required Contribution	\$ 307,473,031	\$ 277,691,503
a. Required Contribution Rate (7a + 8a)	36.12 %	30.68 %
10. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	13.34 %	15.09 %
b. Member Contribution Rate	10.67 %	8.92 %
c. Total Statutory Contribution Rate (a + b)	24.01 %	24.01 %
11. (Excess) Shortfall of Rates Under Funding Policy Objectives (9a - 10c)	12.11 %	6.67 %

Section V: Actuarial Valuation Results



Table V-1(b): Valuation Results for State Police/Correction Division

	June 30, 2011	June 30, 2010
1. Total Valuation Payroll	\$ 87,109,599	\$ 91,733,329
2. Present Value of Future Benefits	1,122,955,917	1,077,256,650
3. Present Value of Future Normal Costs	275,847,202	293,809,984
4. Actuarial Accrued Liability (2 - 3)	\$ 847,108,715	\$ 783,446,666
5. Actuarial Value of Assets	862,058,143	889,169,394
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ (14,949,428)	\$ (105,722,728)
7. UAAL Amortization Payment (30 year funding)	\$ (825,193)	\$ (5,671,566)
a. Amortization Payment as a Percent of Payroll (7 / 1)	(0.95)%	(6.18)%
8. Total Normal Cost	\$ 27,988,873	\$ 28,677,306
a. Normal Cost as a Percent of Payroll (8 / 1)	32.13 %	31.26 %
9. Total Required Contribution	\$ 27,163,680	\$ 23,005,740
a. Required Contribution Rate (7a + 8a)	31.18 %	25.08 %
10. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	21.93 %	23.68 %
b. Member Contribution Rate	10.48 %	8.72 %
c. Total Statutory Contribution Rate (a + b)	32.41 %	32.40 %
11. (Excess) Shortfall of Rates Under Funding Policy Objectives (9a - 10c)	(1.23)%	(7.32)%

Section V: Actuarial Valuation Results



Table V-1(c): Valuation Results for Municipal General Division

	June 30, 2011	June 30, 2010
1. Total Valuation Payroll	\$ 765,793,421	\$ 780,831,441
2. Present Value of Future Benefits	6,133,543,579	5,783,497,052
3. Present Value of Future Normal Costs	<u>1,013,093,550</u>	<u>1,045,157,432</u>
4. Actuarial Accrued Liability (2 - 3)	\$5,120,450,029	\$4,738,339,620
5. Actuarial Value of Assets	<u>3,845,662,093</u>	<u>3,960,653,469</u>
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$1,274,787,936	\$ 777,686,151
7. UAAL Amortization Payment (30 year funding)	\$ 70,366,953	\$ 41,719,494
a. Amortization Payment as a Percent of Payroll (7 / 1)	9.19 %	5.34 %
8. Total Normal Cost	\$ 132,160,392	\$ 134,128,374
a. Normal Cost as a Percent of Payroll (8 / 1)	17.26 %	17.18 %
9. Total Required Contribution	\$ 202,527,345	\$ 175,847,868
a. Required Contribution Rate (7a + 8a)	26.45 %	22.52 %
10. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	9.43 %	9.42 %
b. Member Contribution Rate	<u>12.07 %</u>	<u>12.10 %</u>
c. Total Statutory Contribution Rate (a + b)	21.50 %	21.52 %
11. (Excess) Shortfall of Rates Under Funding Policy Objectives (9a - 10c)	4.95 %	1.00 %

Section V: Actuarial Valuation Results



Table V-1(d): Valuation Results for Municipal Police Division

	June 30, 2011	June 30, 2010
1. Total Valuation Payroll	\$ 195,530,882	\$ 194,398,192
2. Present Value of Future Benefits	2,696,816,749	2,517,662,894
3. Present Value of Future Normal Costs	549,426,488	550,757,002
4. Actuarial Accrued Liability (2 - 3)	\$ 2,147,390,261	\$1,966,905,892
5. Actuarial Value of Assets	1,527,062,745	1,575,381,241
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ 620,327,516	\$ 391,524,651
7. UAAL Amortization Payment (30 year funding)	\$ 34,241,426	\$ 21,003,602
a. Amortization Payment as a Percent of Payroll (7 / 1)	17.51 %	10.80 %
8. Total Normal Cost	\$ 60,520,898	\$ 59,285,173
a. Normal Cost as a Percent of Payroll (8 / 1)	30.95 %	30.50 %
9. Total Required Contribution	\$ 94,762,324	\$ 80,288,775
a. Required Contribution Rate (7a + 8a)	48.46 %	41.30 %
10. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	18.20 %	18.19 %
b. Member Contribution Rate	15.67 %	15.62 %
c. Total Statutory Contribution Rate (a + b)	33.87 %	33.81 %
11. (Excess) Shortfall of Rates Under Funding Policy Objectives (9a - 10c)	14.59 %	7.49 %

Section V: Actuarial Valuation Results



Table V-1(e): Valuation Results for Municipal Fire Division

	June 30, 2011	June 30, 2010
1. Total Valuation Payroll	\$ 112,814,736	\$ 111,193,053
2. Present Value of Future Benefits	1,589,537,124	1,484,160,899
3. Present Value of Future Normal Costs	<u>361,453,297</u>	<u>358,632,741</u>
4. Actuarial Accrued Liability (2 - 3)	\$ 1,228,083,827	\$1,125,528,158
5. Actuarial Value of Assets	<u>737,135,025</u>	<u>764,888,462</u>
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ 490,948,802	\$ 360,639,696
7. UAAL Amortization Payment (30 year funding)	\$ 27,099,857	\$ 19,346,758
a. Amortization Payment as a Percent of Payroll (7 / 1)	24.02 %	17.40 %
8. Total Normal Cost	\$ 34,984,465	\$ 34,117,861
a. Normal Cost as a Percent of Payroll (8 / 1)	31.01 %	30.68 %
9. Total Required Contribution	\$ 62,084,322	\$ 53,464,619
a. Required Contribution Rate (7a + 8a)	55.03 %	48.08 %
10. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	21.06 %	21.05 %
b. Member Contribution Rate	<u>16.00 %</u>	<u>15.99 %</u>
c. Total Statutory Contribution Rate (a + b)	37.06 %	37.04 %
11. (Excess) Shortfall of Rates Under Funding Policy Objectives (9a - 10c)	17.97 %	11.04 %

Section V: Actuarial Valuation Results



Table V-1(f): Valuation Results for All PERA Division

	June 30, 2011	June 30, 2010
1. Total Valuation Payroll	\$ 2,012,414,311	\$ 2,083,225,182
2. Present Value of Future Benefits	20,249,289,838	19,190,714,021
3. Present Value of Future Normal Costs	3,422,897,429	3,589,252,561
4. Actuarial Accrued Liability (2 - 3)	\$16,826,392,409	\$15,601,461,460
5. Actuarial Value of Assets	11,855,217,373	12,243,712,850
6. Unfunded Actuarial Accrued Liability (UAAL) (4 - 5)	\$ 4,971,175,036	\$ 3,357,748,610
7. UAAL Amortization Payment (30 year funding)	\$ 274,403,632	\$ 180,128,670
a. Amortization Payment as a Percent of Payroll (7 / 1)	13.64 %	8.65 %
8. Total Normal Cost	\$ 419,607,070	\$ 430,169,833
a. Normal Cost as a Percent of Payroll (8 / 1)	20.85 %	20.65 %
9. Total Required Contribution	\$ 694,010,702	\$ 610,298,503
a. Required Contribution Rate (7a + 8a)	34.49 %	29.30 %
10. Expected Statutory Contribution Rates		
a. Employer Contribution Rate	13.13 %	13.95 %
b. Member Contribution Rate	11.98 %	11.11 %
c. Total Statutory Contribution Rate (a + b)	25.11 %	25.06 %
11. Expected (Excess) Shortfall in Employer Contribution Rate (9a - 10c)	9.38 %	4.24 %

Table V-2: Contribution Rate Summary

Division	Employer Only		
	Current Statutory Rate	30-year Rate	Difference
State General	13.34 %	25.45 %	12.11 %
State Police/Corrections	21.93 %	20.70 %	(1.23)%
Municipal General	9.43 %	14.38 %	4.95 %
Municipal Police	18.20 %	32.79 %	14.59 %
Municipal Fire	21.06 %	39.03 %	17.97 %
PERA Total	13.13 %	22.51 %	9.38 %

Section V: Actuarial Valuation Results



Table V-3: Statutory Contribution Rate Summary

Division and Coverage Plan	Contribution Rates	
	Member	Employer
State Division		
General Coverage Plan 3	10.67 %	13.34 %
Police and Adult Corrections Plan 1	10.85 %	21.85 %
Hazardous Duty (Juvenile Correctional Officers) Plan 2	8.03 %	22.47 %
Weighted Average for Police/Corrections*	10.48 %	21.93 %
Municipal Division		
General Coverage Plans		
Plan 1	7.00 %	7.00 %
Plan 2	9.15 %	9.15 %
Plan 3	13.15 %	9.15 %
Plan 4	15.65 %	11.65 %
Detention Officers Plan 1	16.65 %	16.65 %
Weighted Average*	12.07 %	9.43 %
Police Coverage Plans		
Plan 1	7.00 %	10.00 %
Plan 2	7.00 %	15.00 %
Plan 3	7.00 %	18.50 %
Plan 4	12.35 %	18.50 %
Plan 5	16.30 %	18.50 %
Weighted Average*	15.67 %	18.20 %
Fire Coverage Plans		
Plan 1	8.00 %	11.00 %
Plan 2	8.00 %	17.50 %
Plan 3	8.00 %	21.25 %
Plan 4	12.80 %	21.25 %
Plan 5	16.20 %	21.25 %
Weighted Average*	16.00 %	21.06 %

* PERA financial records do not provide an asset breakdown by coverage plan which necessitates the use of a weighted average contribution rate for the purpose of comparing assets to the actuarial accrued liability and determining the financing period for the unfunded actuarial accrued liability. Contribution rates are weighted by payroll.



Section VI: Accounting Information

The tables provided in this section present disclosure information necessary to comply with GASB requirements and are relevant for the annual financial reporting of PERA.

Table VI-1: GASB Statement No. 25 Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Annual Payroll (c)	UAAL as a Percentage of Annual Payroll ((b - a) / c)
6/30/2011	\$ 11,855,217,373	\$ 16,826,392,409	\$4,971,175,036	70.5 %	\$1,935,013,761	256.9 %
6/30/2010	12,243,712,850	15,601,461,460	3,357,748,610	78.5 %	1,993,516,921	168.4 %
6/30/2009	12,553,985,916	14,908,279,200	2,354,293,284	84.2 %	2,081,259,498	113.1 %
6/30/2008	12,816,218,012	13,740,335,321	924,117,309	93.3 %	1,965,064,160	47.0 %
6/30/2007	12,032,214,874	12,962,480,229	930,265,355	92.8 %	1,908,519,615	48.7 %
6/30/2006	10,850,217,103	11,781,722,238	931,505,135	92.1 %	1,774,918,446	52.5 %
6/30/2005	9,997,484,609	10,902,768,775	905,284,166	91.7 %	1,607,838,716	56.3 %
6/30/2004	9,267,268,071	9,950,224,296	682,956,225	93.1 %	1,499,069,439	45.6 %
6/30/2003	8,971,080,804	9,215,945,484	244,864,680	97.3 %	1,437,357,206	17.0 %
6/30/2002	8,763,443,681	8,498,751,682	(264,691,999)	103.1 %	1,396,209,000	N/A
6/30/2001	8,302,819,833	7,876,574,893	(426,244,939)	105.4 %	1,318,274,517	N/A

Table VI-2: Schedule of Employer Contributions

Fiscal Year Ended June 30	Actuarial Valuation Date	Annual Required Contribution (ARC)*
2012	6/30/2011	\$452,940,926*
2011	6/30/2010	355,192,459
2010	6/30/2009	327,447,665
2009	6/30/2008	302,068,680
2008	6/30/2007	292,578,920
2007	6/30/2006	256,298,224
2006	6/30/2005	235,066,020
2005	6/30/2004	219,163,952
2004	6/30/2003	206,835,702
2003	6/30/2002	213,712,566
2002	6/30/2001	204,734,125

* Current ARC is projected amount based on expected increase in payroll. Actual ARC will be based on actual payroll for the plan year when known.



Section VI: Accounting Information

Table VI-3: 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)
6/30/2011	\$ 796,011,595	\$ 4,725,622,520	\$ 1,961,725,462	\$ 4,883,299,367	100.00%	86.49%	0.00%	
6/30/2010	801,399,015	4,253,964,884	1,931,877,225	5,053,620,284	100.00	99.96	0.00	
6/30/2009	778,454,953	3,758,596,895	2,197,858,388	5,187,238,906	100.00	100.00	29.58	
6/30/2008	717,442,113	3,493,601,370	2,006,564,260	5,314,106,647	100.00	100.00	54.97	
6/30/2007	666,818,026	3,270,427,324	1,937,119,315	4,999,146,905	100.00	100.00	54.82	

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)
6/30/2011	\$ 53,270,846	\$ 522,073,854	\$ 271,764,015	\$ 862,058,143	100.00%	100.00%	100.00%	
6/30/2010	54,011,741	468,885,120	260,549,805	889,169,394	100.00	100.00	100.00	
6/30/2009	51,976,907	428,702,219	279,377,481	909,538,277	100.00	100.00	100.00	
6/30/2008	49,498,036	383,471,230	311,380,692	923,945,664	100.00	100.00	100.00	
6/30/2007	46,580,045	349,049,033	293,977,200	863,466,963	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)
6/30/2011	\$ 926,331,337	\$ 3,086,715,812	\$ 1,107,402,880	\$ 3,845,662,093	100.00%	94.58%	0.00%
6/30/2010	925,603,163	2,755,080,040	1,057,656,417	3,960,653,469	100.00	100.00	26.47
6/30/2009	919,259,180	2,389,664,666	1,183,487,976	4,052,373,108	100.00	100.00	62.82
6/30/2008	855,002,112	2,174,339,402	1,071,385,628	4,124,299,828	100.00	100.00	100.00
6/30/2007	796,973,246	1,985,667,232	1,083,417,103	3,862,281,520	100.00	100.00	99.65

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)
6/30/2011	\$ 231,902,509	\$ 1,374,649,843	\$ 540,837,909	\$ 1,527,062,745	100.00%	94.22%	0.00%
6/30/2010	229,843,016	1,233,854,770	503,208,106	1,575,381,241	100.00	100.00	22.19
6/30/2009	226,520,464	1,119,080,749	518,225,913	1,615,789,548	100.00	100.00	52.14
6/30/2008	206,085,031	1,033,269,134	468,756,635	1,646,824,413	100.00	100.00	86.93
6/30/2007	215,378,136	948,915,908	451,077,455	1,547,245,078	100.00	100.00	84.90

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)
6/30/2011	\$ 146,327,512	\$ 816,875,672	\$ 264,880,643	\$ 737,135,025	100.00%	72.33%	0.00%
6/30/2010	146,535,083	730,613,903	248,379,172	764,888,462	100.00	84.64	0.00
6/30/2009	143,289,802	672,838,620	240,944,987	789,046,075	100.00	95.98	0.00
6/30/2008	130,971,951	627,054,313	211,513,414	807,041,460	100.00	100.00	23.17
6/30/2007	124,684,425	572,948,781	219,447,000	760,074,408	100.00	100.00	28.45



Section VI: Accounting Information

Table VI-3: Solvency Test by 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)
6/30/2011	\$2,153,843,799	\$ 10,525,937,701	\$ 4,146,610,909	\$ 11,855,217,373	100.00%	92.17%	0.00%	
6/30/2010	2,157,392,018	9,442,398,717	4,001,670,725	12,243,712,850	100.00	100.00	16.09	
6/30/2009	2,119,501,306	8,368,883,149	4,419,894,745	12,553,985,914	100.00	100.00	46.73	
6/30/2008	1,958,999,243	7,711,735,449	4,069,600,629	12,816,218,012	100.00	100.00	77.29	
6/30/2007	1,850,433,878	7,127,008,278	3,985,038,073	12,032,214,874	100.00	100.00	76.66	



Section VI: Accounting Information

**Table VI-4: 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		
6/30/2011	1,005	\$34,914,890	347	\$ 6,179,881	13,639	\$342,143,687	9.17%	\$ 25,086
6/30/2010	858	30,142,074	319	5,583,947	12,981	313,408,678	8.50	24,144
6/30/2009	599	22,350,689	200	2,724,236	12,442	288,850,551	7.29	23,216
6/30/2008	592	**	241	**	12,043	269,224,098	7.27	22,355
6/30/2007	619	**	196	**	11,692	250,974,817	8.30	21,466

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		
6/30/2011	90	\$ 3,480,618	20	\$ 507,415	1,227	\$34,896,189	9.31%	\$ 28,440
6/30/2010	67	2,521,381	18	337,044	1,157	31,922,986	7.35	27,591
6/30/2009	71	2,869,837	1	78,768	1,108	29,738,649	10.36	26,840
6/30/2008	82	**	6	**	1,038	26,947,580	9.53	25,961
6/30/2007	77	**	0	**	962	24,603,084	10.39	25,575



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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		
6/30/2011	767	\$23,981,216	269	\$ 3,952,559	9,538	\$217,136,162	10.16%	\$ 22,765
6/30/2010	741	22,219,130	234	3,359,126	9,040	197,107,505	10.58	21,804
6/30/2009	510	17,121,178	112	1,840,853	8,533	178,247,502	9.38	20,889
6/30/2008	534	**	92	**	8,135	162,967,177	9.78	20,033
6/30/2007	525	**	120	**	7,693	148,449,316	9.91	19,297

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		
6/30/2011	166	\$ 8,033,315	30	\$ 821,737	2,574	\$87,127,512	9.02%	\$ 33,849
6/30/2010	166	7,192,629	26	676,463	2,438	79,915,934	8.88	32,779
6/30/2009	113	5,321,543	0	-	2,298	73,399,767	7.82	31,941
6/30/2008	137	**	18	**	2,185	68,078,224	8.95	31,157
6/30/2007	160	**	0	**	2,066	62,486,941	12.12	30,245

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		
6/30/2011	98	\$ 5,203,080	23	\$ 617,946	1,548	\$53,848,050	9.31%	\$ 34,786
6/30/2010	77	4,123,767	16	542,892	1,473	49,262,916	7.84	33,444
6/30/2009	60	3,341,836	10	444,498	1,412	45,682,041	6.77	32,353
6/30/2008	82	**	7	**	1,362	42,784,703	9.61	31,413
6/30/2007	81	**	8	**	1,287	39,032,316	9.73	30,328

Section VI: Accounting Information



Table VI-4: 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		
6/30/2011	2,126	\$75,613,119	689	\$12,079,538	28,526	\$ 735,151,600	9.46%	\$ 25,771
6/30/2010	1,909	66,198,980	613	10,499,472	27,089	671,618,019	9.04	24,793
6/30/2009	1,353	51,005,083	323	5,088,355	25,793	615,918,510	8.06	23,879
6/30/2008	1,427	**	364	**	24,763	570,001,782	8.46	23,018
6/30/2007	1,462	**	324	**	23,700	525,546,474	9.40	22,175

Table VI-5: Summary of Actuarial Methods and Assumptions

Valuation date	June 30, 2011
Actuarial cost method	Entry Age Normal
Amortization method	Level Percent of Payroll, Open
Payroll growth rate	4.00%
Remaining amortization period	30 years
Asset valuation method	4-year Smoothed Market
Actuarial assumptions:	
Investment rate of return*	7.75%
Projected salary increases*	4.00% – 19.00%
Post-retirement benefit increases	3.00% compounded annually
* Includes inflation at 3.50%	



Appendix A: Additional Membership Data

Table A-1: Schedule of Active Participant Data as of June 30, 2011 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	10	0	0	0	0	0	0	10	\$ 239,407
20 to 24	363	12	0	1	0	0	0	376	\$ 8,917,619
25 to 29	998	364	11	0	0	0	0	1,373	\$ 41,719,154
30 to 34	983	742	257	5	0	0	0	1,987	\$ 70,081,032
35 to 39	742	765	522	168	4	0	0	2,201	\$ 88,262,034
40 to 44	676	709	604	465	208	1	0	2,663	\$ 112,857,360
45 to 49	753	712	545	538	514	62	1	3,125	\$ 135,921,567
50 to 54	607	685	544	494	521	83	10	2,944	\$ 131,865,189
55 to 59	510	651	514	454	447	78	19	2,673	\$ 122,575,423
60	79	123	80	72	75	7	3	439	\$ 20,908,828
61	73	84	92	89	49	17	1	405	\$ 18,482,481
62	72	88	63	67	40	11	4	345	\$ 15,999,609
63	51	83	68	35	25	10	0	272	\$ 12,346,234
64	41	69	42	31	34	9	0	226	\$ 11,376,378
65	31	53	35	27	15	4	1	166	\$ 7,987,133
66	23	19	17	15	13	0	1	88	\$ 4,202,853
67	16	23	18	6	8	1	1	73	\$ 3,929,824
68	20	16	13	8	4	3	0	64	\$ 2,713,960
69	5	20	7	10	8	3	0	53	\$ 2,196,797
70	8	12	5	2	2	2	1	32	\$ 1,394,477
71	4	7	10	4	2	1	0	28	\$ 1,229,631
72	5	3	4	2	1	0	0	15	\$ 763,041
73	6	4	3	1	2	0	1	17	\$ 785,262
74	4	1	4	1	1	0	0	11	\$ 437,559
75	0	2	0	1	0	0	0	3	\$ 99,608
76	2	3	1	1	0	0	1	8	\$ 417,630
77	2	0	1	0	0	1	0	4	\$ 238,341
78	0	1	0	0	0	0	0	1	\$ 39,010
79	2	0	1	0	0	0	0	3	\$ 187,207
80 & Over	0	5	3	0	0	0	1	9	\$ 253,884
Total	6,086	5,256	3,464	2,497	1,973	293	45	19,614	\$ 818,428,532

Average Age: 45.79

Average Service: 9.87



Appendix A: Additional Membership Data

State Police Corrections

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	1	0	0	0	0	0	5	\$ 193,747
20 to 24	151	7	0	0	0	0	0	158	\$ 5,255,001
25 to 29	156	111	20	0	0	0	0	287	\$ 10,624,751
30 to 34	106	92	90	17	0	0	0	305	\$ 13,205,423
35 to 39	78	64	92	77	18	0	0	329	\$ 15,755,487
40 to 44	55	45	67	72	74	3	0	316	\$ 15,958,677
45 to 49	36	33	29	34	50	10	0	192	\$ 9,170,667
50 to 54	25	32	32	22	22	13	2	148	\$ 7,038,000
55 to 59	10	17	15	13	14	4	4	77	\$ 3,606,160
60	4	3	6	2	4	1	0	20	\$ 936,409
61	0	1	1	3	1	4	0	10	\$ 530,002
62	1	2	1	0	1	0	0	5	\$ 200,630
63	0	1	3	0	1	0	2	7	\$ 364,216
64	2	2	0	1	1	0	0	6	\$ 243,609
65	1	1	0	0	2	0	0	4	\$ 153,073
66	0	0	0	1	0	1	0	2	\$ 67,824
67	0	0	0	0	0	0	0	0	\$ -
68	0	1	0	0	1	0	0	2	\$ 102,320
69	0	0	0	0	1	0	0	1	\$ 44,092
70	1	0	2	0	1	0	1	5	\$ 245,971
71	0	0	0	0	0	0	0	0	\$ -
72	0	0	0	0	0	0	0	0	\$ -
73	1	0	0	1	0	0	0	2	\$ 63,171
74	0	0	0	0	0	0	0	0	\$ -
75	0	0	0	0	0	0	0	0	\$ -
76	0	0	0	0	0	0	0	0	\$ -
77	0	0	0	0	0	0	0	0	\$ -
78	0	0	0	0	0	0	0	0	\$ -
79	0	0	0	0	0	0	0	0	\$ -
80 & Over	0	0	0	0	0	0	0	0	\$ -
Total	631	413	358	243	191	36	9	1,881	\$ 83,759,230

Average Age: 38.07

Average Service: 10.00



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	157	0	0	0	0	0	0	157	\$ 2,478,447
20 to 24	1,074	33	0	0	0	0	0	1,107	\$ 25,965,971
25 to 29	1,409	353	13	0	0	0	0	1,775	\$ 50,243,828
30 to 34	1,204	677	268	7	0	0	0	2,156	\$ 69,414,675
35 to 39	991	641	380	237	5	0	0	2,254	\$ 79,928,076
40 to 44	1,257	636	490	427	197	6	0	3,013	\$ 109,587,869
45 to 49	900	625	447	383	386	95	2	2,838	\$ 109,561,716
50 to 54	888	621	513	392	446	104	9	2,973	\$ 115,878,955
55 to 59	700	511	410	365	334	86	22	2,428	\$ 93,950,053
60	98	91	62	68	48	13	6	386	\$ 15,687,939
61	88	85	62	53	34	11	7	340	\$ 13,511,259
62	94	71	70	45	36	9	2	327	\$ 12,294,230
63	64	65	59	25	27	9	1	250	\$ 9,782,719
64	55	47	43	30	19	9	1	204	\$ 7,884,710
65	30	38	17	26	17	3	0	131	\$ 4,740,900
66	35	24	11	6	4	2	4	86	\$ 2,932,916
67	25	27	16	13	4	2	2	89	\$ 3,091,694
68	28	19	6	12	4	1	1	71	\$ 2,081,689
69	16	12	7	4	7	1	0	47	\$ 1,397,460
70	14	9	5	8	4	0	0	40	\$ 1,360,267
71	12	7	3	5	2	3	0	32	\$ 1,038,983
72	10	4	7	2	1	1	1	26	\$ 676,656
73	10	4	2	2	0	0	0	18	\$ 399,690
74	12	2	3	1	2	0	0	20	\$ 521,760
75	9	3	1	2	1	0	0	16	\$ 348,168
76	6	3	1	1	3	0	0	14	\$ 370,192
77	6	1	2	3	0	0	0	12	\$ 327,271
78	3	1	2	1	0	0	0	7	\$ 116,712
79	1	0	0	2	0	0	0	3	\$ 77,032
80 & Over	12	8	3	4	0	0	1	28	\$ 687,991
Total	9,208	4,618	2,903	2,124	1,581	355	59	20,848	\$ 736,339,828

Average Age: 44.06

Average Service: 8.35



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	1	0	0	0	0	0	0	1	\$ 63,545
20 to 24	165	10	0	0	0	0	0	175	\$ 6,824,264
25 to 29	364	150	4	0	0	0	0	518	\$ 23,899,116
30 to 34	234	285	102	0	0	0	0	621	\$ 30,817,537
35 to 39	163	194	315	110	3	0	0	785	\$ 41,922,359
40 to 44	100	125	203	278	43	1	0	750	\$ 42,455,047
45 to 49	54	68	91	117	65	2	0	397	\$ 23,025,066
50 to 54	30	33	42	43	28	7	0	183	\$ 10,106,077
55 to 59	22	21	26	32	13	1	2	117	\$ 6,035,437
60	0	2	1	5	2	1	0	11	\$ 535,290
61	3	1	5	1	1	0	2	13	\$ 619,812
62	0	0	4	2	0	0	3	9	\$ 504,147
63	1	2	0	2	0	1	0	6	\$ 379,438
64	1	1	1	0	3	0	0	6	\$ 349,612
65	1	0	0	0	1	0	0	2	\$ 94,998
66	2	0	1	0	0	0	0	3	\$ 72,487
67	1	0	0	0	0	0	0	1	\$ 30,511
68	0	0	0	0	0	0	0	0	\$ -
69	0	0	0	1	0	0	0	1	\$ 54,421
70	0	0	0	0	0	0	0	0	\$ -
71	0	0	0	0	0	0	0	0	\$ -
72	1	0	0	0	0	0	0	1	\$ 20,394
73	0	0	0	0	0	0	0	0	\$ -
74	0	0	1	0	0	0	0	1	\$ 56,756
75	0	0	0	0	0	0	0	0	\$ -
76	0	0	0	0	0	0	0	0	\$ -
77	0	0	0	0	0	0	0	0	\$ -
78	0	0	0	0	0	0	0	0	\$ -
79	0	0	0	0	0	0	0	0	\$ -
80 & Over	0	1	0	0	0	0	1	2	\$ 144,148
Total	1,143	893	796	591	159	13	8	3,603	\$ 188,010,463

Average Age: 37.96

Average Service: 9.28



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	6	0	0	0	0	0	0	6	\$ 204,097
20 to 24	110	1	0	0	0	0	0	111	\$ 4,189,175
25 to 29	266	116	3	0	0	0	0	385	\$ 16,406,791
30 to 34	167	236	53	1	0	0	0	457	\$ 21,853,904
35 to 39	96	145	145	37	2	0	0	425	\$ 21,856,037
40 to 44	40	59	103	118	29	0	0	349	\$ 20,018,146
45 to 49	10	31	43	72	46	2	0	204	\$ 12,839,119
50 to 54	7	9	27	40	24	10	0	117	\$ 7,371,942
55 to 59	5	4	6	14	7	3	2	41	\$ 2,469,748
60	1	1	0	1	0	0	1	4	\$ 301,235
61	1	0	0	2	1	0	0	4	\$ 341,339
62	1	2	0	0	1	0	0	4	\$ 226,205
63	0	0	0	1	0	0	0	1	\$ 125,037
64	0	0	0	0	1	0	0	1	\$ 175,537
65	0	0	0	0	0	0	0	0	\$ -
66	0	0	0	1	0	0	0	1	\$ 52,394
67	0	0	0	0	0	0	0	0	\$ -
68	0	0	0	0	0	0	0	0	\$ -
69	0	0	0	0	0	0	0	0	\$ -
70	0	0	0	0	0	0	0	0	\$ -
71	0	1	0	0	0	0	0	1	\$ 45,003
72	0	0	0	0	0	0	0	0	\$ -
73	0	0	0	0	0	0	0	0	\$ -
74	0	0	0	0	0	0	0	0	\$ -
75	0	0	0	0	0	0	0	0	\$ -
76	0	0	0	0	0	0	0	0	\$ -
77	0	0	0	0	0	0	0	0	\$ -
78	0	0	0	0	0	0	0	0	\$ -
79	0	0	0	0	0	0	0	0	\$ -
80 & Over	0	0	0	0	0	0	0	0	\$ -
Total	710	605	380	287	111	15	3	2,111	\$ 108,475,708

Average Age: 36.45

Average Service: 8.90



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	178	1	0	0	0	0	0	179	\$ 3,179,242
20 to 24	1,863	63	0	1	0	0	0	1,927	\$ 51,152,031
25 to 29	3,193	1,094	51	0	0	0	0	4,338	\$ 142,893,640
30 to 34	2,694	2,032	770	30	0	0	0	5,526	\$ 205,372,571
35 to 39	2,070	1,809	1,454	629	32	0	0	5,994	\$ 247,723,992
40 to 44	2,128	1,574	1,467	1,360	551	11	0	7,091	\$ 300,877,100
45 to 49	1,753	1,469	1,155	1,144	1,061	171	3	6,756	\$ 290,518,136
50 to 54	1,557	1,380	1,158	991	1,041	217	21	6,365	\$ 272,260,162
55 to 59	1,247	1,204	971	878	815	172	49	5,336	\$ 228,636,821
60	182	220	149	148	129	22	10	860	\$ 38,369,702
61	165	171	160	148	86	32	10	772	\$ 33,484,894
62	168	163	138	114	78	20	9	690	\$ 29,224,821
63	116	151	130	63	53	20	3	536	\$ 22,997,643
64	99	119	86	62	58	18	1	443	\$ 20,029,847
65	63	92	52	53	35	7	1	303	\$ 12,976,104
66	60	43	29	23	17	3	5	180	\$ 7,328,475
67	42	50	34	19	12	3	3	163	\$ 7,052,029
68	48	36	19	20	9	4	1	137	\$ 4,897,968
69	21	32	14	15	16	4	0	102	\$ 3,692,770
70	23	21	12	10	7	2	2	77	\$ 3,000,715
71	16	15	13	9	4	4	0	61	\$ 2,313,617
72	16	7	11	4	2	1	1	42	\$ 1,460,091
73	17	8	5	4	2	0	1	37	\$ 1,248,123
74	16	3	8	2	3	0	0	32	\$ 1,016,074
75	9	5	1	3	1	0	0	19	\$ 447,776
76	8	6	2	2	3	0	1	22	\$ 787,822
77	8	1	3	3	0	1	0	16	\$ 565,612
78	3	2	2	1	0	0	0	8	\$ 155,722
79	3	0	1	2	0	0	0	6	\$ 264,239
80 & Over	12	14	6	4	0	0	3	39	\$ 1,086,023
Total	17,778	11,785	7,901	5,742	4,015	712	124	48,057	\$ 1,935,013,763

Average Age: 43.74

Average Service: 9.13



Appendix A: Additional Membership Data

**Table A-2: Number of Annual Retirement Allowances of Benefit Recipients
as of June 30, 2011**

Type of Pension	Number	Total Annual Benefits	Average Annual Pension
Service Retirement Pensions			
Single Life Pension Terminating Upon Death*	10,288	\$ 280,305,319	\$ 27,246
Two Life 100% Survivor Pension			
Retired Member Recipient*	9,969	276,496,420	27,736
Survivor Recipient	1,751	32,009,048	18,280
Two Life 50% Survivor Pension			
Retired Member Recipient*	3,593	103,934,883	28,927
Survivor Recipient	708	7,548,254	10,661
Single Life with Temporary Child Survivor Pension			
Retired Member Recipient*	178	6,029,713	33,875
Child Recipient	3	95,749	31,916
Total Service Retirement Pensions	26,490	\$ 706,419,385	\$ 26,667
Disability Retirement Pensions			
Single Life Pension Terminating Upon Death*	243	\$ 3,503,111	\$ 14,416
Two Life 100% Survivor Pension			
Retired Member Recipient*	498	7,074,828	14,206
Survivor Recipient	177	2,374,930	13,418
Two Life 50% Survivor Pension			
Retired Member Recipient*	85	1,337,009	15,730
Survivor Recipient	19	132,570	6,977
Single Life with Temporary Child Survivor Pension			
Retired Member Recipient*	12	178,712	14,893
Child Recipient	5	61,579	12,316
Total Disability Retirement Pensions	1,039	\$ 14,662,739	\$ 14,112
Pre-Retirement Survivor Pensions			
Spouse Recipient	958	\$ 13,788,094	14,393
Child Recipient	39	281,382	7,215
Total Pre-Retirement Survivor Pensions	997	\$ 14,069,475	\$ 14,112
Total Pensions Being Paid	28,526	\$ 735,151,600	\$ 25,771

* Includes Co-Payees



Appendix A: Additional Membership Data

Table A-3: Distribution of Participants Receiving Benefits as of June 30, 2011

Attained Age	Retired Member		Disabled Member		Survivor Beneficiaries		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
Under 40	11	\$ 238,565	28	\$ 411,725	218	\$ 2,854,474	257	\$ 3,504,764
40 to 44	300	10,796,545	63	1,093,874	98	1,460,078	461	13,350,497
45 to 49	1,303	45,209,739	115	1,949,848	134	2,028,204	1,552	49,187,791
50 to 54	2,392	82,484,114	180	2,870,244	212	3,401,907	2,784	88,756,265
55 to 59	2,967	102,319,784	268	3,980,280	295	5,119,460	3,530	111,419,524
60 to 64	4,604	144,553,461	164	1,639,632	397	7,063,590	5,165	153,256,683
65 to 69	4,406	112,688,977	2	44,045	416	7,305,526	4,824	120,038,548
70 to 74	3,284	74,635,301	0	0	469	7,595,549	3,753	82,230,850
75 to 79	2,287	49,871,508	0	0	426	6,831,269	2,713	56,702,778
80 to 84	1,444	27,917,044	0	0	458	6,710,970	1,902	34,628,015
85 to 89	727	12,368,850	0	0	345	4,112,939	1,072	16,481,789
90 to 94	252	3,128,718	0	0	145	1,456,001	397	4,584,720
95 to 99	62	586,916	0	0	39	312,604	101	899,520
100 & Over	7	70,824	0	0	8	39,034	15	109,858
Total	24,046	\$666,870,346	820	\$ 11,989,648	3,660	\$ 56,291,606	28,526	\$ 735,151,600



Appendix A: Additional Membership Data

**Table A-4: Distribution of Retirees & Beneficiaries
by Years of Service at Retirement**

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*	\$ 1,338	\$ 774	\$ 1,144	\$ 1,644	\$ 2,287	\$ 2,773	\$2,518	\$2,097
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	147	1,338	1,615	1,671	2,079	5,018	936	12,804
State Police/Corrections								
Average Monthly Benefit*	\$ 1,428	\$1,433	\$ 1,435	\$ 1,941	\$ 2,670	\$ 3,113	\$3,374	\$2,434
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	52	93	105	110	214	279	69	922
Municipal General								
Average Monthly Benefit*	\$ 1,289	\$ 646	\$ 1,014	\$ 1,575	\$ 2,264	\$ 2,686	\$2,525	\$1,909
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	188	1,153	1,277	1,286	1,440	3,087	384	8,815
Municipal Police								
Average Monthly Benefit*	\$ 1,696	\$1,434	\$ 1,641	\$ 2,706	\$ 3,151	\$ 3,045	\$3,224	\$2,875
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	52	77	126	515	1,366	136	39	2,311
Municipal Fire								
Average Monthly Benefit*	\$ 1,893	\$1,723	\$ 2,086	\$ 2,749	\$ 3,168	\$ 2,716	\$2,531	\$2,939
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	30	85	288	913	71	47	1,444
Totals for All Divisions								
Average Monthly Benefit*	\$ 1,382	\$ 772	\$ 1,146	\$ 1,853	\$ 2,625	\$ 2,757	\$2,579	\$2,161
Average Final Average Salary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Retirees/Beneficiaries*	449	2,691	3,208	3,870	6,012	8,591	1,475	26,296

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

- State General – 835
- State Police/Corrections – 305
- Municipal General – 723
- Municipal Police – 263
- Municipal Fire – 104



Appendix A: Additional Membership Data

Table A-5: Distribution of Recent Retiree Ages at Retirement

Division	2006-07 Retirees	2007-08 Retirees	2008-09 Retirees	2009-10 Retirees	2010-11 Retirees	All Current Retirees & Beneficiaries
State General						
Number	635	608	626	732	882	13,639
Average Monthly Benefit at Retirement	\$ 2,118	\$ 2,105	\$ 2,204	\$ 2,356	\$ 2,314	\$ 1,704
Average Age at Retirement	56.83	57.35	57.99	57.99	58.62	56.60
State Police/Corrections						
Number	76	85	77	55	83	1,227
Average Monthly Benefit at Retirement	2,011	2,023	2,439	2,444	2,422	1,972
Average Age at Retirement	52.06	51.05	49.34	51.13	49.81	51.14
Municipal General						
Number	527	555	520	643	666	9,538
Average Monthly Benefit at Retirement	1,875	1,856	2,052	2,104	2,223	1,589
Average Age at Retirement	57.29	57.33	57.44	58.05	57.68	56.90
Municipal Police						
Number	165	143	117	145	155	2,574
Average Monthly Benefit at Retirement	2,792	2,734	2,707	2,892	3,015	2,319
Average Age at Retirement	47.69	47.54	48.24	46.77	48.62	47.50
Municipal Fire						
Number	83	85	62	65	83	1,548
Average Monthly Benefit at Retirement	2,866	2,867	2,986	3,293	3,560	2,324
Average Age at Retirement	47.92	47.64	48.12	47.99	49.39	47.84
Totals for All Current Retirees						
Number	1,486	1,476	1,402	1,640	1,869	28,526
Average Monthly Benefit at Retirement	2,143	2,111	2,237	2,345	2,400	1,766
Average Age at Retirement	55.24	55.47	56.06	56.40	56.66	55.17



Actuarial Assumptions Used for the Valuation

Assumed Rate of Investment Return. 7.75% per annum net of administrative and investment expenses. The investment assumption was changed from 8.00% to 7.75% effective June 30, 2011 based on a recent study of the economic assumptions used in the valuation.

The estimates of future inflation, real investment return in excess of inflation and salary increases are used in combination with the demographic estimates to determine the present value of amounts expected to be paid in the future.

Price Inflation. 3.5% per annum, compounded annually, effective June 30, 2011.

Real Investment Return. 4.25% over price inflation (3.75% over wage growth), effective June 30, 2011. This is the rate of return (net of administrative and investment expenses) to be produced by investing a pool of assets in an inflation-free environment.

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. These rates were first used for the June 30, 2005 actuarial valuation. 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	3.5%	3.5%	3.5%	3.5%	3.5%
Other Factors	0.5	0.5	0.5	0.5	0.5
Increase Due to Merit/Longevity:					
State General	8.0	2.0	0.5	0.5	0.5
State Police	13.5	9.0	6.8	4.5	2.3
State Corrections	15.0	3.5	3.5	3.5	3.5
Municipal General	2.5	1.5	0.5	0.5	0.5
Municipal Police	9.5	4.0	2.8	2.0	1.8
Municipal Fire	10.0	5.5	2.7	1.3	1.5

Appendix B: Summary of Actuarial Assumptions & Methods



In the following schedules, State Corrections includes Adult Corrections Officers and Juvenile Corrections Officers and Municipal General includes Municipal Detention Officers.

Mortality Assumption. For active members, mortality rates are shown for sample ages in the following schedule. No provision was made for future mortality improvement.

Pre-Retirement Mortality Rates by Division						
Age	State General		State Police		State Corrections	
	Male	Female	Male	Female	Male	Female
20	0.0176%	0.0135%	0.0390%	0.0342%	0.0210%	0.0210%
25	0.0226	0.0133	0.0468	0.0390	0.0280	0.0280
30	0.0301	0.0171	0.0598	0.0468	0.0385	0.0385
35	0.0398	0.0293	0.0809	0.0598	0.0665	0.0665
40	0.0692	0.0415	0.1156	0.0809	0.1225	0.1225
45	0.0904	0.0611	0.1871	0.1156	0.1820	0.1820
50	0.1131	0.0889	0.3499	0.1871	0.2555	0.2555
55	0.1434	0.1480	0.5899	0.3499	0.3570	0.3570
60	0.2376	0.3115	0.9013	0.5899	0.5110	0.5110
65	0.4732	0.5962	1.4413	0.9013	0.8680	0.8680

Pre-Retirement Mortality Rates by Division						
Age	Municipal General		Municipal Police		Municipal Fire	
	Male	Female	Male	Female	Male	Female
20	0.0342%	0.0317%	0.0189%	0.0171%	0.0189%	0.0171%
25	0.0390	0.0318	0.0225	0.0195	0.0225	0.0195
30	0.0468	0.0359	0.0283	0.0234	0.0283	0.0234
35	0.0598	0.0427	0.0379	0.0299	0.0379	0.0299
40	0.0809	0.0538	0.0536	0.0404	0.0536	0.0404
45	0.1156	0.0720	0.0828	0.0578	0.0828	0.0578
50	0.1871	0.1018	0.1553	0.0936	0.1553	0.0936
55	0.3499	0.1572	0.2682	0.1750	0.2682	0.1750
60	0.5899	0.2952	0.4155	0.2949	0.4155	0.2949
65	0.9013	0.5095	0.6565	0.4506	0.6565	0.4506

Appendix B: Summary of Actuarial Assumptions & Methods



For inactive members, mortality rates are based on the 2000 Group Annuity Mortality Table (1971 GAM projected), set back 3 years for men and 7 years for women for healthy lives. Special disabled mortality is used for disabled lives. All deaths-in-service are assumed to be non-duty.

Post-retirement and post-disablement mortality rates are shown for sample ages in the following schedule.

Post-Retirement and Post-Disablement Mortality Rates				
Age	Post-retirement		Post-disablement	
	Male	Female	Male	Female
20	0.0378%	0.0342%	5.1360%	2.6300%
25	0.0450	0.0390	5.2360	2.6300
30	0.0566	0.0468	4.4270	2.6300
35	0.0758	0.0598	2.9780	2.4200
40	0.1072	0.0809	2.0450	2.1800
45	0.1655	0.1156	1.9280	2.0800
50	0.3107	0.1871	2.1270	2.1900
55	0.5363	0.3499	2.4660	2.4900
60	0.8309	0.5899	3.0070	2.8800
65	1.3130	0.9013	3.8570	3.2300
70	2.2037	1.4413	5.1870	3.6200
75	3.7677	2.4514	7.2610	4.0200
80	5.8349	4.1064	10.4530	4.6500
85	9.4487	6.4629	15.2880	6.8600



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Retirement. The following rates apply to State General and Municipal General (Plan 1-4) members who were first hired before July 1, 2010 and all State Police, State Corrections, Municipal Detention, Municipal Police, and Municipal Fire members. These rates are used to measure the probability of members retiring at the indicated ages or indicated service.

Percents Retiring at Indicated Ages (by Coverage Plan)								
Retirement Ages	State General		State	State	Municipal General		Municipal	Municipal
	Male	Female	Police	Corrections	Male	Female	Police	Fire
60	40%	40%	50%	25%	40%	35%	50%	30%
61	50	50	50	20	50	50	40	30
62	45	50	50	20	40	35	30	65
63	45	40	75	30	35	35	25	20
64	35	40	75	45	45	35	25	20
65	40	35	100	40	35	30	40	20
66	22	30		40	20	15	40	20
67	25	30		40	20	18	40	100
68	25	15		40	18	18	40	
69	20	25		40	15	20	40	
70	25	35		100	15	18	100	
71	15	35			15	15		
72	20	30			15	25		
73	20	20			20	18		
74	20	20			30	50		
75	40	40			30	50		
76	40	40			30	50		
77	50	40			30	50		
78	50	40			40	50		
79	50	40			40	50		
80	100	100			100	100		



Appendix B: Summary of Actuarial Assumptions & Methods

Percents Retiring at Indicated Service (by Coverage Plan)								
Service	State General	State Police*	State Corrections	Municipal General	Municipal Police		Municipal Fire	
					Plans 1, 2	Plans 3, 4, 5	Plans 1, 2	Plans 3, 4, 5
20		20%	25%	30%		35%		22%
21		25	25	30		35		20
22		8	25	30		35		30
23		8	30	30		30		30
24		8	30	30		20		20
25	50%	8	30	45	25%	25	15%	15
26	40	20	30	35	20	20	20	20
27	35	20	30	25	25	25	15	15
28	20	20	30	15	25	25	18	18
29	20	50	40	20	15	15	18	18
30	20	100	45	20	50	50	20	20
31	15		45	15	50	50	15	15
32	10		100	10	100	100	20	20
33	10			10			50	50
34	15			15			100	100
35	20			20				
36	20			20				
37	20			20				
38	40			50				
39	40			50				
40	75			100				
41	75							
42	75							
43	75							
44	75							
45	100							

*Includes Adult Corrections Officers and Municipal Detention Officers.



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Retirement. The following rates apply to State General and Municipal General (Plan 1-4) members who were first hired on or after July 1, 2010. These rates are used to measure the probability of members retiring at the indicated ages or indicated service.

Percents Retiring at Indicated Ages (by Coverage Plan)*				
Retirement Ages	State General		Municipal General	
	Male	Female	Male	Female
67	75%	70%	75%	75%
68	50	50	50	50
69	45	50	40	35
70	45	40	35	35
71	35	40	45	35
72	40	35	35	30
73	22	30	20	15
74	20	20	30	50
75	40	40	30	50
76	40	40	30	50
77	50	40	30	50
78	50	40	40	50
79	50	40	40	50
80	100	100	100	100

* Applies for all participants with less than 14 years of service. Different rates apply for 14 to 30 years of service.



Appendix B: Summary of Actuarial Assumptions & Methods

Percents Retiring at Indicated Service (by Coverage Plan)		
Service	State General	Municipal General
30	30%	25%
31	30	25
32	30	25
33	30	25
34	30	25
35	30	25
36	20	20
37	20	20
38	40	50
39	40	50
40	75	100
41	75	
42	75	
43	75	
44	75	
45	100	



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Retirement. These rates are used to measure the probability of an eligible member retiring under the **Rule of 80**.

Percents Retiring at Indicated Service (by Coverage Plan)		
Age	State General	Municipal General
50	75%	65%
51	50	45
52	50	45
53	50	45
54	50	45
55	50	45
56	40	40
57	40	40
58	40	40
59	40	40
60	40	40
61	40	40
62	40	40
63	40	40
64	40	40
65	40	40
66	40	40



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Separation From Active Membership. The rates are used to measure probabilities of active members terminating that status for a reason other than disability or death. The rates do not apply to members who are within the retirement rate range. Separation rates are presumed to be service related during the first 5 to 8 years of employment and age related thereafter.

Percents of Active Members Terminating During Year											
Sample Ages	Years of Service	State General	State Police	State Corrections		Municipal General		Municipal Police		Municipal Fire	
				Men	Women	Men	Women	Men	Women	Men	Women
All	0	39.0%	8.0%	35.0%	28.0%	38.0%	40.0%	28.0%	30.0%	18.0%	30.0%
	1	20.0	8.0	21.0	35.0	20.0	21.0	13.0	15.0	10.0	22.5
	2	13.0	5.0	17.0	13.0	13.0	15.0	9.0	10.0	6.0	15.0
	3	10.0	6.8	12.0	10.0	11.0	13.0	8.0	7.5	4.3	7.5
	4	8.5	4.5	7.0	13.0	8.5	11.0	7.5	4.5	3.5	7.0
	5			n/a	13.0	7.0	8.5				
	6			n/a	13.0						
	7			n/a	8.0						
	Over Select Period										
20		12.0	4.1	7.0	0.0	6.0	13.2	4.9	3.0	3.8	3.8
25		9.1	4.9	7.0	5.0	6.0	10.2	4.9	3.0	3.8	3.8
30		5.9	4.2	7.0	6.0	6.0	6.9	4.2	3.0	3.4	3.4
35		3.9	3.3	5.7	7.5	4.7	5.1	3.1	3.0	2.5	2.5
40		3.3	2.8	4.9	9.0	3.4	4.0	2.4	3.0	2.1	2.1
45		2.9	2.7	4.4	7.0	3.0	3.4	2.1	3.0	2.1	2.1
50		2.8	2.7	3.9	5.0	3.0	3.2	2.1	3.0	2.1	2.1
55		3.0	1.6	4.2	0.0	3.0	3.1	2.1	3.0	2.1	2.1
60		3.4	1.5	3.6	0.0	3.0	3.0	2.1	3.0	2.1	2.1
65		4.2	1.5	0.0	0.0	3.0	3.0	2.1	3.0	2.1	2.1



Appendix B: Summary of Actuarial Assumptions & Methods

Rates of Disability. The rates are used to measure the probabilities of active members becoming disabled. Rates for sample ages follow. All disabilities are assumed to be non-duty.

Percents Becoming Disabled at Indicated Ages (by Coverage Plan)								
Sample Ages	State General		State Police	State Corrections	Municipal General		Municipal Police	Municipal Fire
	Male	Female			Male	Female		
20	0.00%	0.01%	0.05%	0.13%	0.03%	0.04%	0.06%	0.02%
25	0.02	0.02	0.05	0.14	0.04	0.04	0.07	0.02
30	0.02	0.02	0.09	0.16	0.08	0.04	0.08	0.02
35	0.06	0.06	0.14	0.21	0.12	0.04	0.12	0.02
40	0.09	0.09	0.35	0.27	0.17	0.06	0.17	0.08
45	0.14	0.15	0.42	0.46	0.25	0.14	0.26	0.08
50	0.36	0.37	0.69	0.90	0.39	0.25	0.42	0.33
55	0.59	0.53	1.59	1.39	0.65	0.39	0.73	0.33
60	0.72	0.58	0.00	0.00	0.80	0.51	1.22	1.17
65	0.75	0.58	0.00	0.00	0.82	0.59	1.32	0.00

Administrative and Investment Expenses. All expenses are deducted from gross investment income.

Active Member Group Size. The valuation is based on a stationary group size.



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 (Fiscal) 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 in the middle of the fiscal 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:	Disability and mortality decrements do not operate during the first 5 years of service. 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.
Optional Forms of Payment:	Based on valuation interest and a unisex blend of valuation mortality.
Data Changes:	For missing dates of birth for active members, the member was 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.



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

Normal Retirement Eligibility Conditions

Applicable to State General and Municipal General (Plan 1-4) members who were first hired before July 1, 2010 and all State Police, State Corrections, Municipal Detention, Municipal Police, and Municipal Fire 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 State General and Municipal General (Plan 1-4) members who were first hired on or after July 1, 2010:

- Any age with 30 or more years of credited service; or
- Age 67 or older with 5 or more years of credited service;
- Any age if the sum of the member's age and years of service credit equals at least 80

Applicable to police and fire members under one of the following coverage plans:

Municipal Police Coverage Plan 3

Municipal Police Coverage Plan 4

Municipal Police Coverage Plan 5

Municipal Fire Coverage Plan 3

Municipal Fire Coverage Plan 4

Municipal Fire Coverage Plan 5

- Any age with 20 or more years of credited service.

Normal Retirement Pension Amount

The amount of normal retirement pension is based on:

- Final average salary, which is the average of salary for the 36 consecutive months of credited service producing the largest average;
- Credited service (years and months); and the
- Coverage plan.



Appendix C: Summary of Plan Provisions

The pension accrual factor and maximum pension, as a percent of final average salary, under each coverage plan are:

Coverage Plan	Pension Factor Per Year of Credited Service	Maximum Pension as Percent of Final Average Salary
State General Member Coverage Plan 3	3.0%	80%
State Police and Adult Corrections Officers Member Coverage Plan 1	3.0	80
Hazardous Duty (Juvenile Corrections Officer) Coverage Plan 2	3.0	100
Municipal General Member Coverage Plan 1	2.0	60
Coverage Plan 2	2.5	75
Coverage Plan 3	3.0	80
Coverage Plan 4	3.0	80
Municipal Detention Officer Coverage Plan 1	3.0	80
Municipal Police Member Coverage Plan 1	2.0	60
Coverage Plan 2	2.5	100
Coverage Plan 3	2.5	100
Coverage Plan 4	3.0	80
Coverage Plan 5	3.5	80
Municipal Fire Member Coverage Plan 1	2.0	60
Coverage Plan 2	2.5	100
Coverage Plan 3	2.5	100
Coverage Plan 4	3.0	80
Coverage Plan 5	3.5	80



Appendix C: Summary of Plan Provisions

Vested Termination of Membership (Employment)

Termination of employment and membership with at least 5 years of credited service. Accumulated member contributions must be left on deposit. Payment of the pension is available upon eligibility for normal retirement. In addition, certain disability and survivor pension provisions apply.

Normal and Optional Forms of Payment

The normal form of payment is for life. Optional contingent survivor beneficiary forms of payment are available on an actuarial equivalent basis. Total pension payments can never be less than the member's accumulated contributions.

Survivor Pensions – Death in the Line of Duty

Pensions are paid to the eligible spouse and eligible children if survivor coverage has not been elected under the Elective Survivor Pension Beneficiary provision. The amount of pension payable for life to an eligible spouse is the greater of 1) 50% of final average salary or 2) the accrued normal retirement pension reduced for option B election. The amount of pension payable to each eligible child is an equal share of 25% of final average salary. If there is not an eligible spouse or the eligible spouse dies, and if there are 2 or more eligible children, the amount of pension payable to each eligible child is an equal share of 50% of final average salary. An eligible child is an unmarried natural or adopted child who is under age 18. A child's pension terminates upon death, marriage or reaching age 18. The pension of any remaining eligible children is recalculated whenever a child's pension is terminated.

Survivor Pensions – Death Not in the Line of Duty

Requires 5 years of credited service. Benefit applies to members and vested former members who have not elected coverage under the Elective Survivor Pension Beneficiary provision. Pensions are paid to an eligible spouse OR eligible children. The amount of pension payable for the life of an eligible spouse is the greater of 1) 30% of final average salary or 2) accrued normal retirement pension reduced for option B election. An eligible child pension is paid if there is not an eligible spouse or following the death of an eligible spouse. The amount of pension payable to each eligible child is an equal share of 25% of final average salary or, if greater, 50% of accrued normal retirement pension. An eligible child is an unmarried natural or adopted child who is under age 18. A child's pension terminates upon death, marriage or reaching age 18. The pension of any remaining eligible children is recalculated whenever a child's pension is terminated.



Appendix C: Summary of Plan Provisions

Elective Survivor Beneficiary Pension

Applicable to members with 5 or more years of credited service and vested former members who have elected option B and designated a survivor pension beneficiary who has an insurable interest. The amount of pension is the amount of accrued normal retirement pension under optional form of payment B (100% continuation to beneficiary).

Disability Retirement

Applicable to members and vested former members with 5 or more years of credited service. The 5 year credited service requirement is waived if the disability is incurred in line of duty. The amount of disability pension is the accrued normal retirement pension at time of disability retirement. If the disability is in line of duty, the credited service used is the amount that would have been acquired when first eligible for normal retirement.

Cost-of-Living Increases

Pensions are increased each July 1 by 3% if retirement has been in effect for at least 2 full calendar years. If retired on account of disability or if at least age 65, the 2 calendar year waiting period is reduced to 1 full calendar year.

Service Credit

Members in the State Police and Adult Corrections Officers Coverage Plan and members in the Municipal Detention Officers Coverage Plan receive 1.2 years of credited service for each year of service rendered.



Appendix C: Summary of Plan Provisions

Contributions by Members and Employers

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

Coverage Plan	Percent of Salary Member	Contribution Rate Employer
State General Member Coverage Plan 3*	10.67%	13.34%
State Police Member and Adult Correctional Officer Member Coverage Plan 1*	10.85	21.85
Hazardous Duty (Juvenile Corrections) Member Coverage Plan 2*	8.03	22.47
Municipal General Member Coverage Plan 1	7.00	7.00
Municipal General Member Coverage Plan 2	9.15	9.15
Municipal General Member Coverage Plan 3	13.15	9.15
Municipal General Member Coverage Plan 4	15.65	11.65
Municipal Detention Officer Member Coverage Plan 1	16.65	16.65
Municipal Police Member Coverage Plan 1	7.00	10.00
Municipal Police Member Coverage Plan 2	7.00	15.00
Municipal Police Member Coverage Plan 3	7.00	18.50
Municipal Police Member Coverage Plan 4	12.35	18.50
Municipal Police Member Coverage Plan 5	16.30	18.50
Municipal Fire Member Coverage Plan 1	8.00	11.00
Municipal Fire Member Coverage Plan 2	8.00	17.50
Municipal Fire Member Coverage Plan 3	8.00	21.25
Municipal Fire Member Coverage Plan 4	12.80	21.25
Municipal Fire Member Coverage Plan 5	16.20	21.25

Interest is credited to member contributions on each June 30 at the rates set annually by the Retirement Board. The current rate is 5.25%.

**Includes a temporary 1.5% of pay shift from the employer statutory rate effective July 1, 2009. This contribution shift is currently effective for 4 years. Also includes additional 1.75% of pay shift from the employer statutory rate effective July 1, 2011. This contribution shift is currently effective for 2 years.*