

**OHIO PUBLIC EMPLOYEES RETIREMENT SYSTEM**

ACTUARIAL VALUATION OF DEFINED BENEFIT ALLOWANCES –  
TRADITIONAL, COMBINED AND MEMBER DIRECTED PLANS  
DECEMBER 31, 2012



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August 30, 2013

The Retirement Board  
Ohio Public Employees Retirement System  
Columbus, Ohio

Ladies and Gentlemen:

The results of the *December 31, 2012 Annual Actuarial Valuation of Defined Benefit Allowances* of the Ohio Public Employees Retirement System, based upon Chapter 145 of the Code as amended, are presented in this report. The gain/loss analysis of experience by division, the annual actuarial valuation of retiree health and Medicare benefits, projections of defined benefit allowances and projections of retiree health and Medicare benefits are covered in separate reports. The purposes of the valuation are as follows:

- Measure the financial position of OPERS,
- Assist the Board in establishing employer and employee contribution rates necessary to fund the pension defined benefits provided by OPERS,
- Determine the number of years required to amortize the unfunded actuarial accrued liabilities based upon established contribution rates,
- Provide actuarial reporting and disclosure information for the System's financial report, and analyze the experience of the System over the past year.

This report should not be relied on for any purpose other than those described above. It was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board.

The signing actuaries are independent of the plan sponsor.

The individual member statistical data required for the valuations was furnished by your Executive Director and Staff, together with pertinent data on financial operations. Their cooperation in furnishing these materials is acknowledged with appreciation. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the data.

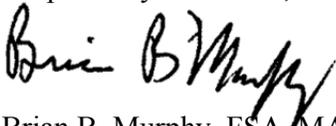
Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

The actuarial assumptions used in the valuations are summarized in Section X of this report. The assumptions are established by the Retirement Board after consulting with the actuary.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the December 31, 2012 as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Brian Murphy, Mita Drazilov and Randall Dziubek are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

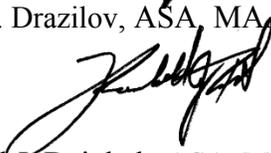
Respectfully submitted,



Brian B. Murphy, FSA, MAAA



Mita D. Drazilov, ASA, MAAA



Randall J. Dziubek, ASA, MAAA

BBM/MDD/RJD:mrb

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**SECTION I**  
EXECUTIVE SUMMARY

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## INTRODUCTION

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Section 145.22 of the Revised Code of Ohio (ORC) provides in part as follows:

“(A) The public employees retirement board shall have prepared annually by or under the supervision of an actuary an actuarial valuation of the pension assets, liabilities, and funding requirements of the public employees retirement system as established pursuant to this chapter.”

This report presents the results of the December 31, 2012 annual actuarial valuation of the Ohio Public Employees Retirement System (OPERS) Defined Benefit Allowances of the Traditional, Combined and Member Directed Plans. In conjunction with Chapter 145 of the ORC, the purposes of performing the annual valuation are as follows:

- Measure the financial position of OPERS,
- Assist the Board in establishing employer and employee contribution rates necessary to fund the pension defined benefits provided by OPERS,
- Determine the number of years required to amortize the unfunded actuarial accrued liabilities based upon established contribution rates,
- Provide actuarial reporting and disclosure information for the System’s financial report, and
- Analyze the experience of the System over the past year.

The report is presented as follows:

Section I	-	Executive Summary
Section II	-	Financial Information
Section III	-	Benefits and Conditions Evaluated
Section IV	-	Recommendations for Reserve Transfers
Section V	-	Active and Inactive Vested Valuation Results for State
Section VI	-	Active and Inactive Vested Valuation Results for Local Government
Section VII	-	Active and Inactive Vested Valuation Results for Public Safety
Section VIII	-	Active and Inactive Vested Valuation Results for Law Enforcement
Section IX	-	Allowances Being Paid to Retirees and Beneficiaries
Section X	-	Actuarial Methods and Assumptions
Section XI	-	Financial Principles
Section XII	-	Governmental Accounting Standards Board (GASB) Reporting

There have been significant benefit changes since the last valuation. Please see Section III for a detailed description of the benefit provisions.

A summary of the primary valuation results as of December 31, 2012 are presented on the following pages.

**SUMMARY OF PENSION DEFINED BENEFIT VALUATION RESULTS**  
**TRADITIONAL, COMBINED, AND MEMBER DIRECTED PLANS**  
**DECEMBER 31**  
**(\$ IN MILLIONS)**

	2012						2012	2011	
	General			Law			Grand Total	Pre-APD Total	Grand Total
	State	Local	Total General	Public Safety	Law Enforcement	Total Law			
<b>A. Demographic Information</b>									
1. Active Number Counts									
a. Traditional Plan	114,895	203,775	318,670	87	7,470	7,557	326,227	326,227	328,640
b. Combined Plan	2,535	4,413	6,948	0	0	0	6,948	6,948	6,714
c. Total	117,430	208,188	325,618	87	7,470	7,557	333,175	333,175	335,354
2. Active Payroll									
a. Traditional Plan	\$ 4,558	\$ 6,884	\$ 11,442	\$ 4	\$ 439	\$ 443	\$ 11,885	\$ 11,885	\$ 12,103
b. Combined Plan	132	177	309	0	0	0	309	309	296
c. Total	\$ 4,690	\$ 7,061	\$ 11,751	\$ 4	\$ 439	\$ 443	\$ 12,194	\$ 12,194	\$ 12,399
3. Retired Number Counts	67,865	123,233	191,098	171	4,510	4,681	195,779	195,779	189,849
4. Deferred/Inactive Number Counts	193,145	269,326	462,471	38	909	947	463,418	463,418	449,193
5. Member Directed Active Number Counts	3,453	6,143	9,596	0	0	0	9,596	9,596	9,281
6. Total Number Counts	381,893	606,890	988,783	296	12,889	13,185	1,001,968	1,001,968	983,677
<b>B. Defined Benefit Assets</b>									
1. Market Value (MV)	\$ 25,411	\$ 39,493	\$ 64,904	\$ 28	\$ 2,923	\$ 2,951	\$ 67,855	\$ 67,855	\$ 61,847
2. Rate of Return on MV							13.73 %	13.73 %	0.36 %
3. Funding Value (FV)	\$ 25,411	\$ 39,493	\$ 64,904	\$ 28	\$ 2,923	\$ 2,951	\$ 67,855	\$ 67,855	\$ 65,436
4. Rate of Return on FV							7.38 %	7.38 %	6.09 %
5. Ratio of FV to MV							100.0%	100.0%	105.8%
<b>C. Defined Benefit Actuarial Results</b>									
1. Normal Cost as a % of Payroll	13.15%	12.83%	12.96%	15.96%	18.43%	18.41%	13.16%	15.44%	15.42%
2. Actuarial Accrued Liability (AAL)									
a. Active	\$ 12,110	\$ 18,152	\$ 30,262	\$ 7	\$ 1,453	\$ 1,460	\$ 31,722	\$ 34,841	\$ 35,497
b. Retired	20,142	27,512	47,654	41	1,978	2,019	49,673	49,673	46,591
c. Deferred/Inactive	1,025	1,430	2,455	0	27	27	2,482	2,591	2,442
d. Total	\$ 33,276	\$ 47,095	\$ 80,371	\$ 49	\$ 3,458	\$ 3,507	\$ 83,878	\$ 87,105	\$ 84,530
3. Unfunded AAL (UAAL)	\$ 7,865	\$ 7,602	\$ 15,467	\$ 21	\$ 535	\$ 556	\$ 16,023	\$ 19,251	\$ 19,094
4. Funded Ratio	76.4 %	83.9 %	80.8 %	56.6 %	84.5 %	84.1 %	80.9 %	77.9 %	77.4 %
<b>D. Amortization Years to Fully Amortize UAAL *</b>	51	18	26	N/A	16	17	26	30	30
<b>E. Contribution Rates</b>									
	CY 2015						CY 2015	CY 2014	
1. Pension Contributions									
a. Employer Normal Cost	3.49%	3.13%	3.28%	3.96%	5.43%	5.42%	3.36%	5.33%	5.31%
b. Member Contribution Rate #	9.66%	9.70%	9.68%	12.00%	13.00%	12.99%	9.80%	10.11%	10.11%
c. UAAL Contribution Rate	7.51%	7.87%	7.72%	11.14%	9.67%	9.68%	7.79%	8.82%	8.84%
d. Total	20.66%	20.70%	20.68%	27.10%	28.10%	28.09%	20.95%	24.26%	24.26%
2. Retiree Health Contribution Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	0.00% @	0.00% @
3. Total Employer Contribution Rate	14.00%	14.00%	14.00%	18.10%	18.10%	18.10%	14.15%	14.15%	14.15%

\* Based on i) schedule of employer and member contribution rates shown on page III-3. For the 2012 results, the amortization years shown are from December 31, 2013. For GASB purposes, amortization years are determined based upon scheduled contribution rate increases through 2015. See page XII-10 for additional explanation, and ii) Entry age actuarial cost method reflecting additional future normal cost savings anticipated to occur as Group A and Group B members are replaced by new hires subject to Group C benefit provisions.

# 2012 results reflect 0% for Combined Plan members (2012 Pre-ADP and 2011 results reflect 10% for Combined Plan members).

@ Based on Pre-APD Retiree Health contribution schedule. See page III-3.

**SUMMARY OF PENSION DEFINED BENEFIT VALUATION RESULTS**  
**TRADITIONAL PLAN**  
**DECEMBER 31**  
**(\$ IN MILLIONS)**

	2012						2012	2011	
	General			Law			Grand Total	Pre-APD Total	Grand Total
	State	Local	Total General	Public Safety	Law Enforcement	Total Law			
<b>A. Demographic Information</b>									
1. Active Number Counts	114,895	203,775	318,670	87	7,470	7,557	326,227	326,227	328,640
2. Active Payroll	\$ 4,558	\$ 6,884	\$ 11,442	\$ 4	\$ 439	\$ 443	\$ 11,885	\$ 11,885	\$ 12,103
3. Retired Number Counts	67,831	123,110	190,941	171	4,510	4,681	195,622	195,622	189,753
4. Deferred/Inactive Number Counts	192,580	268,435	461,015	38	909	947	461,962	461,962	447,881
5. Total Number Counts	375,306	595,320	970,626	296	12,889	13,185	983,811	983,811	966,274
<b>B. Defined Benefit Assets</b>									
1. Market Value (MV)	\$ 25,337	\$ 39,380	\$ 64,717	\$ 28	\$ 2,923	\$ 2,951	\$ 67,668	\$ 67,668	\$ 61,693
2. Rate of Return on MV							13.73 %	13.73 %	0.36 %
3. Funding Value (FV)	\$ 25,338	\$ 39,381	\$ 64,719	\$ 28	\$ 2,923	\$ 2,951	67,670	67,670	\$ 65,274
4. Rate of Return on FV							7.38 %	7.38 %	6.09 %
5. Ratio of FV to MV							100.0%	100.0%	105.8%
<b>C. Defined Benefit Actuarial Results</b>									
1. Normal Cost as a % of Payroll	13.31%	12.98%	13.12%	15.96%	18.44%	18.42%	13.32%	15.36%	15.34%
2. Actuarial Accrued Liability (AAL)									
a. Active	\$ 12,026	\$ 18,035	\$ 30,060	\$ 7	\$ 1,453	\$ 1,460	\$ 31,520	\$ 34,626	\$ 35,301
b. Retired	20,140	27,508	47,648	41	1,978	2,019	49,667	49,667	46,588
c. Deferred/Inactive	1,022	1,427	2,449	0	27	27	2,476	2,583	2,437
d. Total	\$ 33,188	\$ 46,969	\$ 80,157	\$ 49	\$ 3,458	\$ 3,507	\$ 83,664	\$ 86,876	\$ 84,325
3. Unfunded AAL (UAAL)	\$ 7,850	\$ 7,588	\$ 15,438	\$ 21	\$ 535	\$ 556	\$ 15,994	\$ 19,207	\$ 19,052
4. Funded Ratio	76.3 %	83.8 %	80.7 %	56.6 %	84.5 %	84.1 %	80.9 %	77.9 %	77.4 %
<b>D. Amortization Years to Fully Amortize UAAL *</b>									
	53	18	27	N/A	16	17	26	31	30
<b>E. Contribution Rates</b>									
	CY 2015						CY 2015	CY 2014	
<b>1. Pension Contributions</b>									
a. Employer Normal Cost	3.31%	2.98%	3.12%	3.96%	5.44%	5.43%	3.21%	5.25%	5.23%
b. Member Contribution Rate	10.00%	10.00%	10.00%	12.00%	13.00%	12.99%	10.11%	10.11%	10.11%
c. UAAL Contribution Rate	7.69%	8.02%	7.88%	11.14%	9.66%	9.67%	7.95%	8.91%	8.92%
d. Total	21.00%	21.00%	21.00%	27.10%	28.10%	28.09%	21.27%	24.27%	24.26%
<b>2. Retiree Health Contribution Rate</b>									
	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	0.00% <sup>@</sup>	0.00% <sup>@</sup>
<b>3. Total Employer Contribution Rate</b>									
	14.00%	14.00%	14.00%	18.10%	18.10%	18.10%	14.16%	14.16%	14.15%

\* Based on i) schedule of employer and member contribution rates shown on page III-3. For the 2012 results, the amortization years shown are from December 31, 2013. For GASB purposes, amortization years are determined based upon scheduled contribution rate increases through 2015. See page XII-10 for additional explanation, and ii) Entry age actuarial cost method reflecting additional future normal cost savings anticipated to occur as Group A and Group B members are replaced by new hires subject to Group C benefit provisions.

@ Based on Pre-APD Retiree Health contribution schedule. See page III-3.

**SUMMARY OF PENSION DEFINED BENEFIT VALUATION RESULTS  
COMBINED PLAN  
DECEMBER 31  
(\$ IN MILLIONS)**

	2012@		Grand Total	2012	2011
	General			Pre-APD Total	Grand Total
	State	Local			
<b>A. Demographic Information</b>					
1. Active Number Counts	2,535	4,413	6,948	6,948	6,714
2. Active Payroll	\$ 132	\$ 177	\$ 309	\$ 309	\$ 296
3. Retired Number Counts	21	74	95	95	58
4. Deferred/Inactive Number Counts	565	891	1,456	1,456	1,312
5. Total Number Counts	3,121	5,378	8,499	8,499	8,084
<b>B. Defined Benefit Assets</b>					
1. Market Value (MV)	\$ 73	\$ 111	\$ 184	\$ 184	\$ 153
2. Rate of Return on MV			14.30 %	14.30 %	0.47 %
3. Funding Value (FV)	\$ 72	\$ 111	\$ 183	\$ 183	\$ 161
4. Rate of Return on FV			7.77 %	7.77 %	6.12 %
5. Ratio of FV to MV			99%	99%	105%
<b>C. Defined Benefit Actuarial Results</b>					
1. Normal Cost as a % of Payroll	17.54%	17.41%	17.48%	16.89%	16.89%
2. Actuarial Accrued Liability (AAL)					
a. Active	\$ 84	\$ 118	\$ 202	\$ 216	\$ 196
b. Retired	1	3	3	3	2
c. Deferred/Inactive	3	4	6	8	5
d. Total	\$ 88	\$ 124	\$ 212	\$ 226	\$ 203
3. Unfunded AAL (UAAL)	\$ 16	\$ 13	\$ 29	\$ 44	\$ 42
4. Funded Ratio	82.1 %	89.1 %	86.2 %	80.6 %	79.3 %
<b>D. Amortization Years to Fully Amortize UAAL *</b>					
	1	0	1	0	2
<b>E. Contribution Rates</b>					
	CY 2015		CY 2015		CY 2014
1. Total Normal Cost	17.54%	17.41%	17.48%	16.89%	16.89%
2. Member Contribution Rate	10.00%	10.00%	10.00%	10.00%	10.00%
3. Employer Normal Cost	7.54%	7.41%	7.48%	6.89%	6.89%
4. Other Contributions #	6.46%	6.59%	6.52%	7.11%	7.11%
5. Total Employer Contribution Rate	14.00%	14.00%	14.00%	14.00%	14.00%

\* Based on i) schedule of employer and member contribution rates shown on page III-3. For the 2012 results, the amortization years shown are from December 31, 2013. For GASB purposes, amortization years are determined based upon scheduled contribution rate increases through 2015. See page XII-10 for additional explanation, and ii) Entry age actuarial cost method reflecting additional future normal cost savings anticipated to occur as Group A and Group B members are replaced by new hires subject to Group C benefit provisions.

# Other contributions include; amortization payments for the pension UAAL, mitigating contributions, and contributions to the retiree health care fund.

@ In addition to APD changes, the 2012 results for the Combined Plan reflect the following additional changes from the prior valuation: i) 1% of payroll was added to the normal cost for expected future administrative costs, ii) \$9 million was added to the actuarial accrued liability to reflect expected future asset transfers to repay existing loans, and iii) 0.25% of payroll was added to the normal cost for subsidized service purchases. These changes were **not** reflected in the 2012 Pre-ADP results.

**SUMMARY OF PENSION DEFINED BENEFIT VALUATION RESULTS**  
**MEMBER DIRECTED PLAN**  
**DECEMBER 31**

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	2012		2011	
	General		Grand Total	Grand Total
	State	Local		
<b>A. Demographic Information</b>				
1. Active Number Counts	3,453	6,143	9,596	9,281
2. Retired Number Counts	13	49	62	38
3. Deferred / Inactive Number Counts	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
4. Total Number Counts	3,466	6,192	9,658	9,319
<b>B. Defined Benefit Assets</b>				
1. Market Value (MV)	\$ 631,001	\$1,954,429	\$2,585,430	\$1,111,664
2. Rate of Return on MV			15.29 %	0.41 %
3. Funding Value (FV)	\$ 615,979	\$1,907,900	\$2,523,879	\$1,156,151
4. Rate of Return on FV			8.88 %	6.10 %
5. Ratio of FV to MV			97.6%	104.0%
<b>C. Defined Benefit Actuarial Results</b>				
1. Normal Cost as a % of Payroll				
2. Actuarial Accrued Liability (AAL)				
a. Active	\$ 0	\$ 0	\$ 0	\$ 0
b. Retired	687,767	1,977,785	2,665,552	1,172,900
c. Deferred/Inactive	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
d. Total	687,767	1,977,785	2,665,552	1,172,900
3. Unfunded AAL (UAAL)	\$ 71,788	\$ 69,885	\$ 141,673	\$ 16,749
4. Funded Ratio			94.7 %	98.6 %

## COMMENTS AND CONCLUSION

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*The December 31, 2012 actuarial valuations of members indicate* the following about the portion of employer contribution rates allocated to financing retirement allowances:

- The employer rates are sufficient to fully fund the cost of benefit commitments being made to members for service currently being rendered.
- After satisfying current cost requirements, the remaining portion of the employer rates provides sufficient funds to amortize unfunded actuarial accrued liabilities over a period of 26 years for the System in total.

***Experience.*** The computed amortization period, taking into account all scheduled increases in contribution rates is 26 years, compared with the 30 year period that had been reported in the December 31, 2011 valuation. The primary factors contributing to the decrease in the amortization years were:

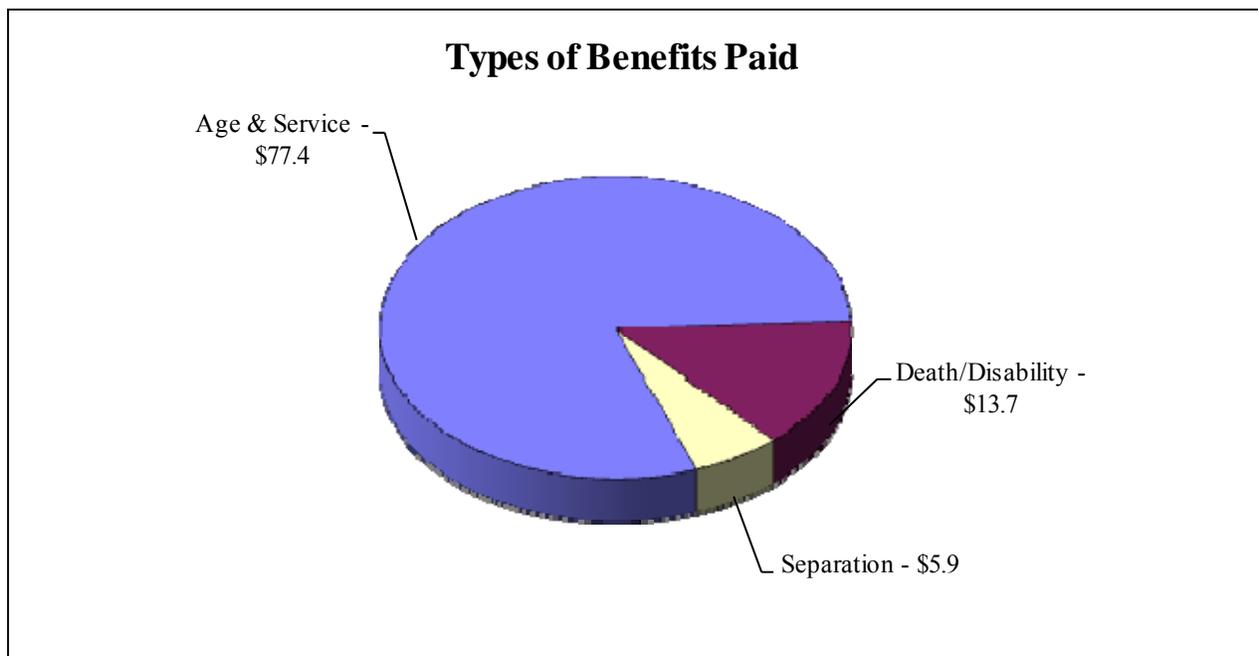
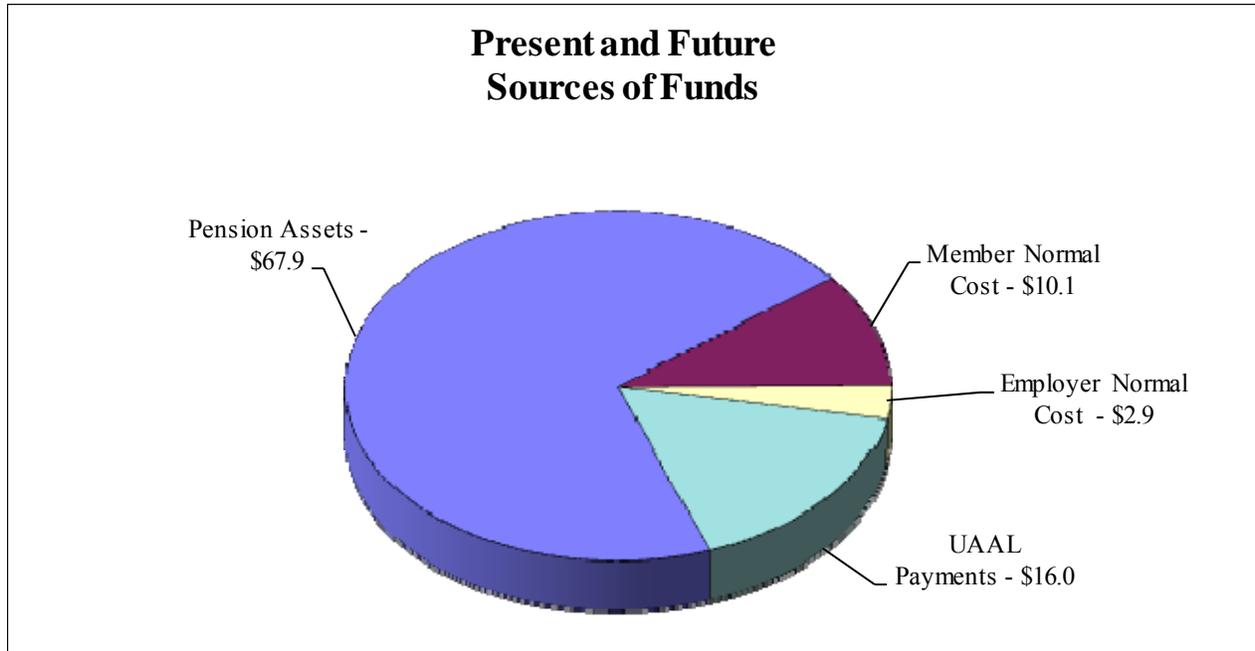
- Significant changes to benefit provisions (summarized in Section III), reduced the amortization years by approximately 16 years.
- Increases to the future employer contribution rate to be allocated to retiree health benefits increased the amortization years by roughly 12 years.
- Measured on a market value basis, investment return was 13.73%. This figure is based upon an actuarial calculation and may not agree with figures reported elsewhere. The return on the funding value of assets was 7.38% due to partial recognition of the 2011 market value loss. Since the return on funding value of assets was less than the 8% assumed return, there was a slight increase in the amortization period.
- Individual salary increases during 2012 were less than expected on average which improved the amortization period.
- A decrease in active member total payroll during 2012 resulted in an increase to the amortization years. Continued decreases in the active member payroll would result in continued upward pressure on the amortization period.

Information concerning 2012 experience including other sources of gains and losses is presented on pages I-14 through I-16.

***Conclusion.*** Based on the results of the December 31, 2012 regular annual actuarial valuation, it is our opinion that the Ohio Public Employees Retirement System continues to operate in accordance with actuarial principles of level percent of payroll financing.

**FINANCING \$97 BILLION\* OF DEFINED BENEFIT PROMISES  
FOR PRESENT ACTIVE AND RETIRED MEMBERS  
DECEMBER 31, 2012  
(DOLLAR AMOUNTS IN BILLIONS)**

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\* Present value of future benefits – all divisions combined.

## DEFINED BENEFIT ACTIVE MEMBERS IN VALUATION GROUP AVERAGES - COMPARATIVE STATEMENT

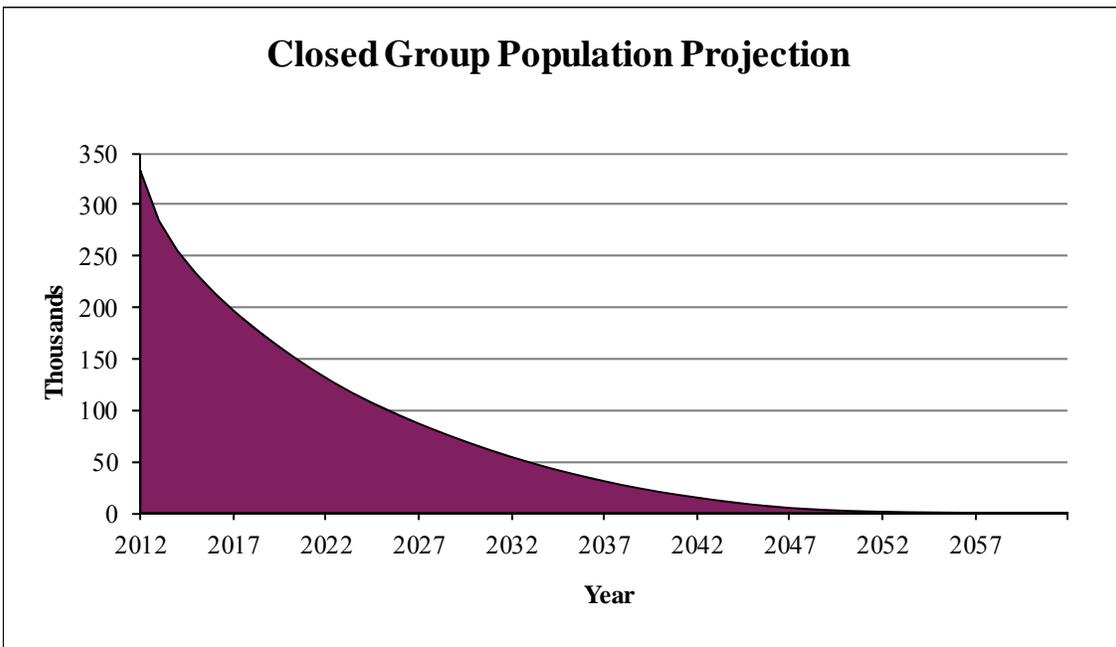
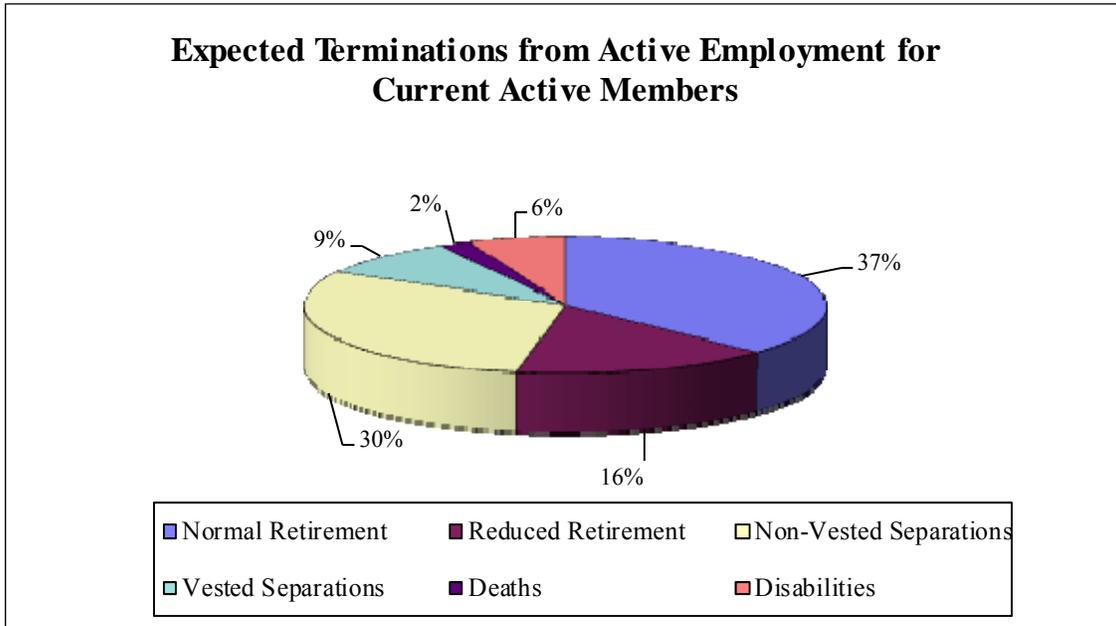
Valuation Group	Dec. 31	No. of Active Members	Group Averages				
			Attained Age	Accrued Service Yrs.	Annual Payroll		
					Average	Increase	
STATE	1975	83,220	40.6 yrs.	6.5 yrs.	\$ 9,441	6.4 %	@
	1980	92,872	39.4	7.3	13,934	8.1 %	@
	1985	89,256	39.2	8.4	18,677	7.4 %	@
	1990	98,939	40.7	8.1	25,281	6.2 %	@
	1995	114,596	40.4	8.8	27,962	2.0 %	@
	2000	113,099	41.6	9.7	34,201	4.1 %	@
	2005	114,620	42.0	10.1	37,858	2.1 %	@
	2010	118,240	41.0	9.6	40,691	1.5 %	@
	2011	118,273	40.5	9.2	40,952	0.6 %	
	2012	117,430	40.4	9.1	39,938	(2.5)%	
LOCAL GOV'T	1975	149,557	40.8 yrs.	6.1 yrs.	\$ 8,771	4.3 %	@
	1980	160,797	40.7	7.4	13,035	8.2 %	@
	1985	158,285	40.1	8.3	15,983	6.2 %	@
	1990	173,220	41.5	7.9	19,506	4.1 %	@
	1995	223,431	41.2	7.6	20,384	0.9 %	@
	2000	245,831	41.8	8.1	24,401	3.7 %	@
	2005	236,073	43.3	9.2	29,933	4.2 %	@
	2010	215,144	44.6	10.1	33,447	2.2 %	@
	2011	209,452	44.9	10.2	33,968	1.6 %	
	2012	208,188	44.7	10.1	33,918	(0.1)%	
LAW *	1975	2,111	35.0 yrs.	4.9 yrs.	\$ 10,467	-	
	1980	3,019	36.1	6.8	16,846	10.0 %	@
	1985	4,207	36.5	8.4	20,103	5.5 %	@
	1990	5,804	38.6	9.9	26,936	6.0 %	@
	1995	6,605	39.3	11.1	32,441	3.2 %	@
	2000	8,045	39.3	11.7	40,387	4.5 %	@
	2005	8,111	39.9	12.6	49,472	4.1 %	@
	2010	7,790	41.2	14.0	56,801	2.8 %	@
	2011	7,629	41.3	14.1	57,836	1.8 %	
	2012	7,557	41.3	14.2	58,522	1.2 %	
<b>TOTAL</b>	<b>2003</b>	<b>353,584</b>	<b>42.5 yrs.</b>	<b>9.4 yrs.</b>	<b>\$ 31,577</b>	<b>-</b>	
	<b>2004</b>	<b>355,287</b>	<b>42.7</b>	<b>9.5</b>	<b>32,240</b>	<b>2.1 %</b>	
	<b>2005</b>	<b>358,804</b>	<b>42.8</b>	<b>9.5</b>	<b>32,906</b>	<b>2.1 %</b>	
	<b>2006</b>	<b>362,130</b>	<b>42.9</b>	<b>9.5</b>	<b>33,621</b>	<b>2.2 %</b>	
	<b>2007</b>	<b>364,076</b>	<b>42.9</b>	<b>9.6</b>	<b>34,562</b>	<b>2.8 %</b>	
	<b>2008</b>	<b>356,388</b>	<b>43.2</b>	<b>9.8</b>	<b>35,919</b>	<b>3.9 %</b>	
	<b>2009</b>	<b>348,112</b>	<b>43.3</b>	<b>10.0</b>	<b>36,047</b>	<b>0.4 %</b>	
	<b>2010</b>	<b>341,174</b>	<b>43.3</b>	<b>10.0</b>	<b>36,491</b>	<b>1.2 %</b>	
	<b>2011</b>	<b>335,354</b>	<b>43.2</b>	<b>9.9</b>	<b>36,974</b>	<b>1.3 %</b>	
<b>2012</b>	<b>333,175</b>	<b>43.1</b>	<b>9.8</b>	<b>36,598</b>	<b>(1.0)%</b>		

@ 5-year annual compound rate.

\* Beginning with the December 31, 2005 valuation report, valuation results for the Law division are shown separately for Public Safety and Law Enforcement.

# DEVELOPMENT OF PRESENT DEFINED BENEFIT POPULATION DECEMBER 31, 2012

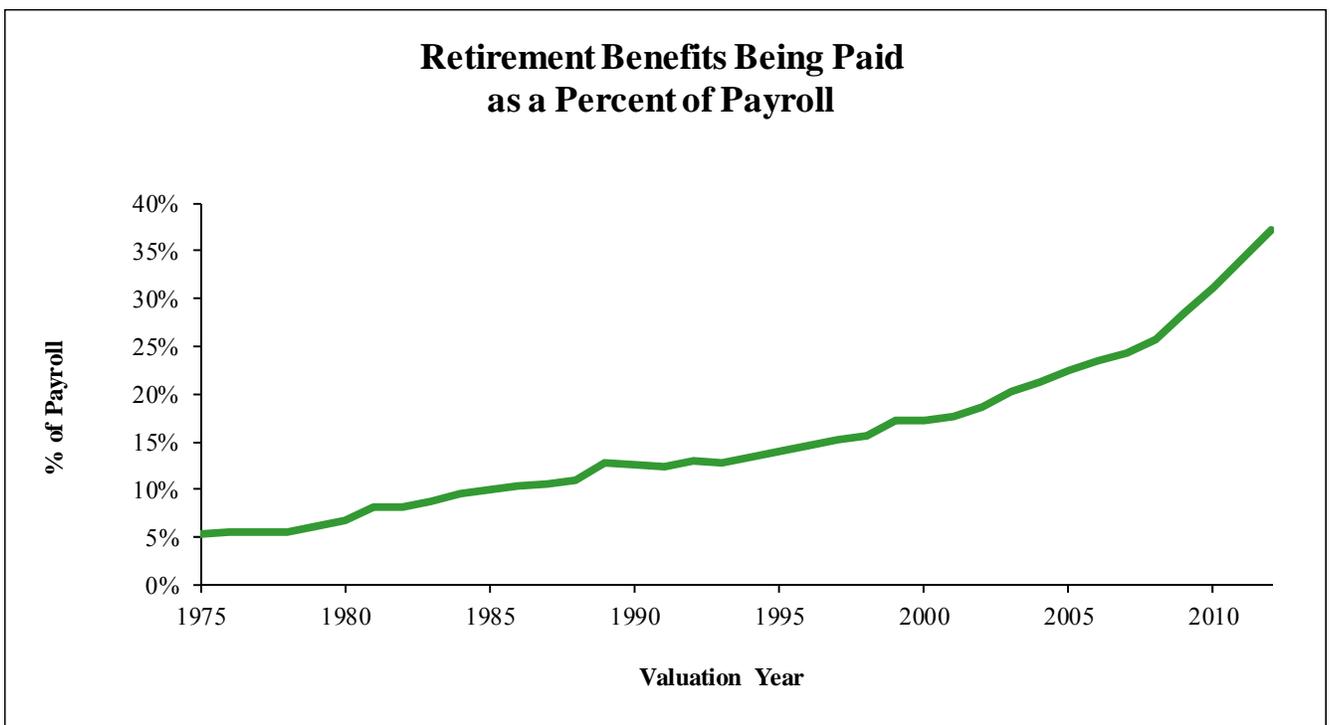
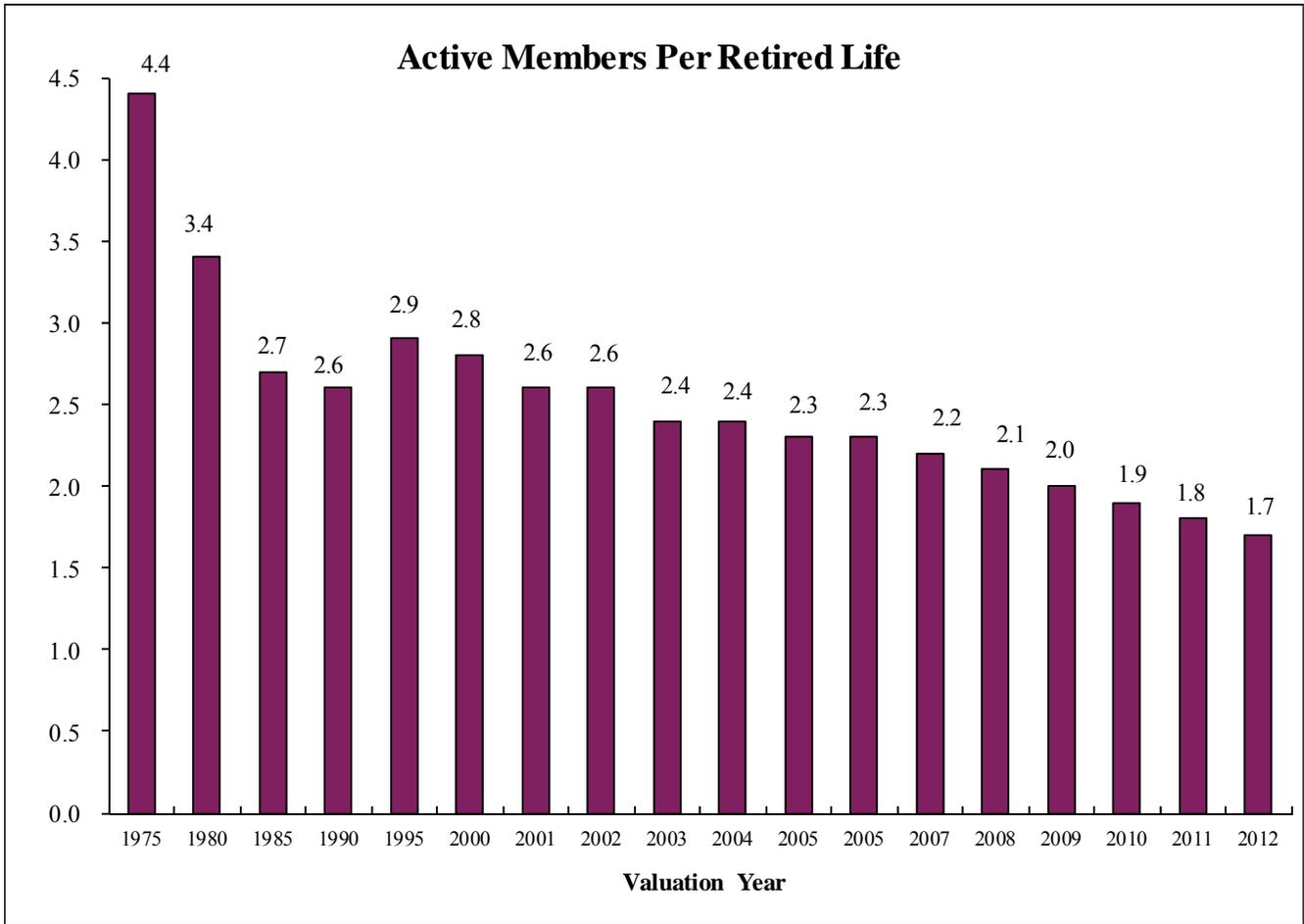
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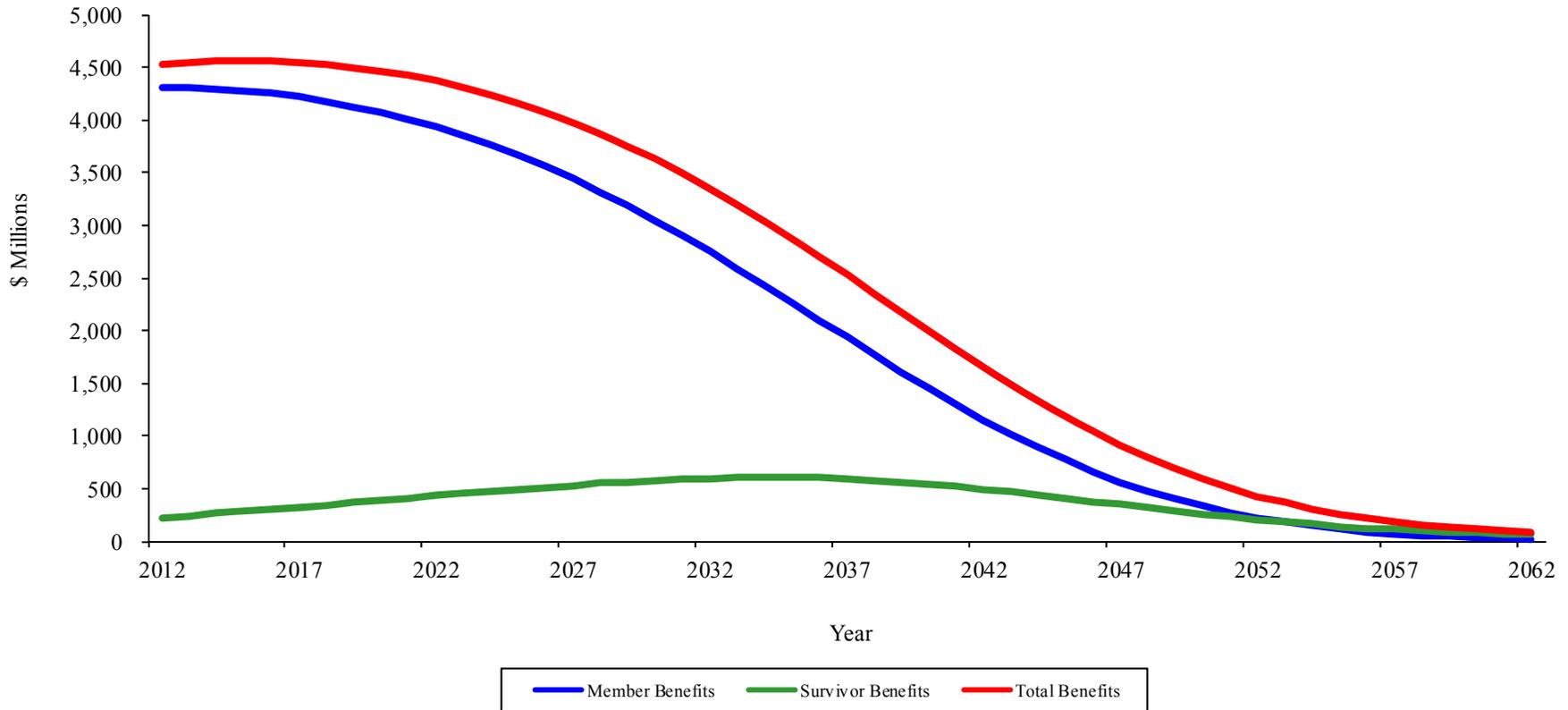
The charts above show the expected future development of the present population in simplified terms. The defined benefit portion of the Retirement System presently covers 333,175 active members. Eventually, 30% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for a monthly benefit. 62% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service without withdrawing contributions. 8% of the present population is expected to become eligible for death-in-service or disability benefits. Within 8 years, over half of the covered membership is expected to consist of new hires.

# ACTIVE/RETIRED MEMBER STATISTICS

## DECEMBER 31, 2012



## PROJECTED FUTURE BENEFIT PAYMENTS ON BEHALF OF PRESENT RETIRED LIVES



Total future payments:	\$124.2 billion
From present assets:	\$49.7 billion
From future earnings:	\$74.5 billion

**ALL DIVISIONS  
DEFINED BENEFIT ACTIVE MEMBERS IN VALUATION  
DECEMBER 31, 2012  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19	10,603							10,603
Tot. Pay	\$66,636,335							\$66,636,335
Avg. Pay	\$6,285							\$6,285
20-24	33,435	418						33,853
Tot. Pay	\$356,455,909	\$7,854,577						\$364,310,486
Avg. Pay	\$10,661	\$18,791						\$10,762
25-29	21,689	5,008	224					26,921
Tot. Pay	\$533,970,563	\$185,173,154	\$7,886,637					\$727,030,354
Avg. Pay	\$24,619	\$36,975	\$35,208					\$27,006
30-34	15,693	10,292	3,993	195				30,173
Tot. Pay	\$414,032,767	\$438,267,323	\$181,347,608	\$8,574,139				\$1,042,221,837
Avg. Pay	\$26,383	\$42,583	\$45,416	\$43,970				\$34,542
35-39	10,053	7,945	8,340	2,768	120			29,226
Tot. Pay	\$294,811,041	\$347,953,085	\$414,091,786	\$139,840,562	\$5,719,816			\$1,202,416,290
Avg. Pay	\$29,326	\$43,795	\$49,651	\$50,520	\$47,665			\$41,142
40-44	9,924	7,554	8,158	7,978	3,129	130		36,873
Tot. Pay	\$287,244,114	\$325,907,425	\$399,974,604	\$436,121,851	\$174,719,058	\$6,569,817		\$1,630,536,869
Avg. Pay	\$28,944	\$43,144	\$49,029	\$54,666	\$55,839	\$50,537		\$44,220
45-49	8,974	7,103	7,257	6,740	7,291	3,571	106	41,042
Tot. Pay	\$246,544,096	\$293,647,245	\$344,451,262	\$359,666,791	\$422,873,861	\$206,921,591	\$6,332,841	\$1,880,437,687
Avg. Pay	\$27,473	\$41,341	\$47,465	\$53,363	\$57,999	\$57,945	\$59,744	\$45,817
50-54	8,391	6,937	7,488	6,593	7,115	6,824	1,680	45,028
Tot. Pay	\$216,243,577	\$271,542,812	\$335,951,900	\$325,033,969	\$396,645,115	\$412,759,495	\$101,261,719	\$2,059,438,587
Avg. Pay	\$25,771	\$39,144	\$44,865	\$49,300	\$55,748	\$60,486	\$60,275	\$45,737
55-59	6,952	5,937	6,680	6,287	6,232	4,938	2,478	39,504
Tot. Pay	\$169,033,656	\$224,089,629	\$283,679,342	\$297,081,888	\$329,182,293	\$288,564,078	\$158,995,126	\$1,750,626,012
Avg. Pay	\$24,314	\$37,745	\$42,467	\$47,253	\$52,821	\$58,437	\$64,163	\$44,315
60-64	4,385	3,757	4,218	3,729	3,973	2,839	1,619	24,520
Tot. Pay	\$91,401,427	\$132,600,229	\$175,906,279	\$171,649,958	\$202,733,396	\$160,766,317	\$106,682,009	\$1,041,739,615
Avg. Pay	\$20,844	\$35,294	\$41,704	\$46,031	\$51,028	\$56,628	\$65,894	\$42,485
65-69	2,514	1,707	1,509	1,246	1,127	871	587	9,561
Tot. Pay	\$30,012,867	\$45,235,408	\$55,657,903	\$52,027,101	\$54,799,146	\$46,188,321	\$35,612,869	\$319,533,615
Avg. Pay	\$11,938	\$26,500	\$36,884	\$41,755	\$48,624	\$53,029	\$60,669	\$33,421
70 & Over	2,146	1,218	934	570	406	292	305	5,871
Tot. Pay	\$16,910,683	\$14,663,292	\$18,863,076	\$15,393,909	\$14,451,839	\$12,040,326	\$16,216,405	\$108,539,530
Avg. Pay	\$7,880	\$12,039	\$20,196	\$27,007	\$35,596	\$41,234	\$53,169	\$18,487
<b>Totals</b>	134,759	57,876	48,801	36,106	29,393	19,465	6,775	333,175
<b>Tot. Pay</b>	\$2,723,297,035	\$2,286,934,179	\$2,217,810,397	\$1,805,390,168	\$1,601,124,524	\$1,133,809,945	\$425,100,969	\$12,193,467,217
<b>Avg. Pay</b>	\$20,209	\$39,514	\$45,446	\$50,002	\$54,473	\$58,249	\$62,746	\$36,598

**ALL DIVISIONS  
DEFINED BENEFIT ACTIVE MEMBERS IN VALUATION  
DECEMBER 31, 2012  
BY GENDER AND YEARS OF SERVICE**

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Service Years	Active Member Count			Active Member Pays	
	Males	Females	Total	Total	Average
0	29,019	34,776	63,795	\$ 841,942,410	\$13,198
1	12,697	14,404	27,101	585,091,524	21,589
2	8,162	9,596	17,758	479,041,718	26,976
3	6,336	6,529	12,865	379,195,194	29,475
4	5,872	7,368	13,240	438,026,189	33,084
5	6,293	7,505	13,798	496,589,763	35,990
6	5,808	6,920	12,728	499,588,066	39,251
7	5,201	6,389	11,590	459,501,928	39,646
8	4,717	5,604	10,321	432,395,819	41,895
9	4,442	4,997	9,439	398,858,603	42,256
10	4,248	5,073	9,321	407,618,219	43,731
11	4,518	5,377	9,895	431,234,728	43,581
12	4,719	6,130	10,849	491,274,703	45,283
13	4,575	5,311	9,886	460,104,020	46,541
14	4,074	4,776	8,850	427,578,727	48,314
15 & Up	44,603	47,136	91,739	4,965,425,606	54,126
<b>Totals</b>	<b>155,284</b>	<b>177,891</b>	<b>333,175</b>	<b>\$12,193,467,217</b>	<b>\$36,598</b>

**SUMMARY OF PENSION EXPERIENCE  
TRADITIONAL, COMBINED, AND MEMBER DIRECTED PLANS  
(\$ IN MILLIONS)**

	2012		2011	
	Total \$	% of Accrued Liabilities	Total \$	% of Accrued Liabilities
<b>Beginning of Year</b>				
1. Total Accrued Liabilities*	\$84,529.74	100.0 %	\$80,484.77	100.0 %
2. Valuation Assets	65,436.13	77.4 %	63,649.06	79.1 %
3. Unfunded Actuarial Accrued Liabilities*	\$19,093.61	22.6 %	\$16,835.71	20.9 %
<b>Experience Gains(Losses)</b>				
4. Gains (losses) in economic risk areas				
a. Pay increases	\$ 1,269.28	1.5 %	\$ 362.46	0.5 %
b. Investment return	(398.79)	(0.5)%	(1,196.46)	(1.5)%
c. Total	870.49	1.0 %	(834.00)	(1.0)%
5. Gains (losses) from decrement experience				
a. Service retirement	(113.33)	(0.1)%	(179.05)	(0.2)%
b. Disability retirement	76.52	0.1 %	92.60	0.1 %
c. Death-in-service	42.57	0.1 %	36.03	0.0 %
d. Other separations	9.30	0.0 %	16.45	0.0 %
e. Total	15.06	0.1 %	(33.97)	(0.1)%
<b>6. Total experience gains (losses): (4c) + (5e)</b>	<b>\$ 885.55</b>	<b>1.1 %</b>	<b>\$ (867.97)</b>	<b>(1.1)%</b>
<b>End of Year</b>				
7. Total Accrued Liabilities*	\$87,105.48	100.0 %	\$84,529.74	100.0 %
8. Valuation Assets	67,854.78	77.9 %	65,436.13	77.4 %
9. Unfunded Actuarial Accrued Liabilities*	\$19,250.70	22.1 %	\$19,093.61	22.6 %

\* The liabilities shown above do not reflect the provisions of Senate Bill 343.

**SUMMARY OF PENSION EXPERIENCE  
TRADITIONAL PLAN  
(\$ IN MILLIONS)**

	2012		2011	
	Total \$	% of Accrued Liabilities	Total \$	% of Accrued Liabilities
<b>Beginning of Year</b>				
1. Total Accrued Liabilities*	\$84,325.49	100.0 %	\$80,307.29	100.0 %
2. Valuation Assets	65,273.93	77.4 %	63,515.01	79.1 %
3. Unfunded Actuarial Accrued Liabilities*	\$19,051.56	22.6 %	\$16,792.28	20.9 %
<b>Experience Gains (Losses)</b>				
4. Gains (losses) in economic risk areas				
a. Pay increases	\$ 1,261.73	1.5 %	\$ 359.46	0.4 %
b. Investment return	(398.44)	(0.5)%	(1,193.76)	(1.5)%
c. Total	863.29	1.0 %	(834.30)	(1.1)%
5. Gains (losses) from decrement experience				
a. Service retirement	(113.22)	(0.1)%	(178.97)	(0.2)%
b. Disability retirement	71.66	0.1 %	88.08	0.1 %
c. Death-in-service	41.97	0.0 %	36.06	0.0 %
d. Other separations	8.85	0.0 %	15.88	0.0 %
e. Total	9.26	0.0 %	(38.95)	0.0 %
<b>6. Total experience gains (losses): (4c) + (5e)</b>	<b>\$ 872.55</b>		<b>\$ (873.25)</b>	
<b>End of Year</b>				
7. Total Accrued Liabilities*	\$86,876.36	100.0 %	\$84,325.49	100.0 %
8. Valuation Assets	67,669.64	77.9 %	65,273.93	77.4 %
9. Unfunded Actuarial Accrued Liabilities*	\$19,206.72	22.1 %	\$19,051.56	22.6 %

\* The liabilities shown above do not reflect the provisions of Senate Bill 343.

**SUMMARY OF PENSION EXPERIENCE  
COMBINED PLAN  
(\$ IN MILLIONS)**

	2012		2011	
	Total \$	% of Accrued Liabilities	Total \$	% of Accrued Liabilities
<b>Beginning of Year</b>				
1. Total Accrued Liabilities *	\$203.08	100.0 %	\$176.98	100.0 %
2. Valuation Assets #	161.04	79.3 %	133.60	75.5 %
3. Unfunded Actuarial Accrued Liabilities	\$ 42.04	20.7 %	\$ 43.38	24.5 %
<b>Experience Gains (Losses)</b>				
4. Gains (losses) in economic risk areas				
a. Pay increases	\$ 7.55	3.7 %	\$ 3.00	1.7 %
b. Investment return	(0.38)	(0.2)%	(2.69)	(1.5)%
c. Total	7.17	3.5 %	0.31	0.2 %
5. Gains (losses) from decrement experience				
a. Service retirement	(0.11)	(0.1)%	(0.09)	(0.1)%
b. Disability retirement	4.86	2.4 %	4.52	2.6 %
c. Death-in-service	0.59	0.3 %	(0.02)	0.0 %
d. Other separations	0.44	0.2 %	0.55	0.3 %
e. Total	5.78	2.8 %	4.96	2.8 %
<b>6. Total experience gains (losses): (4c) + (5e)</b>	<b>\$ 12.95</b>	<b>6.3 %</b>	<b>\$ 5.27</b>	<b>3.0 %</b>
<b>End of Year</b>				
7. Total Accrued Liabilities	\$226.45	100.0 %	\$203.08	100.0 %
8. Valuation Assets	182.62	80.6 %	161.04	79.3 %
9. Unfunded Actuarial Accrued Liabilities	\$ 43.83	19.4 %	\$ 42.04	20.7 %

\* The liabilities shown above do not reflect the provisions of Senate Bill 343.

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**SECTION II**  
FINANCIAL INFORMATION

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# FINANCIAL DATA FOR CALENDAR YEAR 2012

## CONSOLIDATED ASSET RECONCILIATION

### ALL PLANS, ALL DIVISIONS

	Traditional Pension Plan	DB Portion of Combined Pension Plan	DB Portion of Member-Directed Plan	Total Pension Defined Benefit	401(h) Health Care	Member Directed VEBA	Total Health Care	DC Portion of Combined Pension Plan	Member Directed	Total Defined Contribution	Total 2012
Beginning Market Value @ 12/31/11											
Assets Held in Trust for Benefits	\$ 61,228,115,670	\$ 152,252,085	\$ 1,109,768	\$ 61,381,477,523	\$ 11,959,000,311	\$ 90,696,132	\$ 12,049,696,443	\$ 180,842,930	\$ 316,083,570	\$ 496,926,500	\$ 73,928,100,466
Assets Held for Upcoming Year Budget	102,775,700	-	-	102,775,700	-	-	-	-	-	-	102,775,700
Total Beginning Market Value @ 12/31/11	\$ 61,330,891,370	\$ 152,252,085	\$ 1,109,768	\$ 61,484,253,223	\$ 11,959,000,311	\$ 90,696,132	\$ 12,049,696,443	\$ 180,842,930	\$ 316,083,570	\$ 496,926,500	\$ 74,030,876,166
External Cash Flows:											
Revenues:											
Member Contributions/Deposits	\$ 1,268,293,623	\$ 313,275	\$ -	\$ 1,268,606,898	\$ -	\$ -	\$ -	\$ 30,618,819	\$ 37,979,783	\$ 68,598,602	\$ 1,337,205,500
Employer Contributions	1,261,212,114	24,000,872	-	1,285,212,986	495,097,743	16,893,101	511,990,844	4,032	35,693,371	35,697,403	1,832,901,233
Retiree Paid Health Care Premiums	-	-	-	-	159,614,898	-	159,614,898	-	-	-	159,614,898
Refund from HC Vendors (Formulary & Guarantees)	-	-	-	-	93,681,061	-	93,681,061	-	-	-	93,681,061.00
Federal Subsidies (Med D, ERRP & Direct Subsidy)	-	-	-	-	182,579,918	-	182,579,918	-	-	-	182,579,918.00
Other Income/Cancelled Warrants	329,492	-	-	329,492	11,774,199	-	11,774,199	-	-	-	12,103,691
Total Revenues	\$ 2,529,835,229	\$ 24,314,147	\$ -	\$ 2,554,149,376	\$ 942,747,819	\$ 16,893,101	\$ 959,640,920	\$ 30,622,851	\$ 73,673,154	\$ 104,296,005	\$ 3,618,086,301
Disbursements:											
Refunds of Member Accounts	\$ (284,217,216)	\$ (851,327)	\$ -	\$ (285,068,543)	\$ -	\$ -	\$ -	\$ (5,322,387)	\$ (17,095,348)	\$ (22,417,735)	\$ (307,486,278)
Retirement Benefits	(4,589,973,216)	(273,809)	(227,924)	(4,590,474,949)	-	-	-	(336,736)	(127,187)	(463,923)	(4,590,938,872)
Retiree Paid Post Retirement Health Care	-	-	-	-	(159,614,898)	-	(159,614,898)	-	-	-	(159,614,898)
ER Paid Post Retirement Health Care	-	-	-	-	(1,324,957,264)	(1,236,169)	(1,326,193,433)	-	-	-	(1,326,193,433)
ER Paid Post Retirement Medicare	-	-	-	-	(112,530,781)	-	(112,530,781)	-	-	-	(112,530,781)
RMA Funding	-	-	-	-	(10,818,585)	-	(10,818,585)	-	-	-	(10,818,585)
Administrative Expenses	(76,439,766)	-	-	(76,439,766)	(20,352,854)	(919,097)	(21,271,951)	(2,502,059)	(2,388,430)	(4,890,489)	(102,602,206)
Total Disbursements	\$ (4,950,630,198)	\$ (1,125,136)	\$ (227,924)	\$ (4,951,983,258)	\$ (1,628,274,382)	\$ (2,155,266)	\$ (1,630,429,648)	\$ (8,161,182)	\$ (19,610,965)	\$ (27,772,147)	\$ (6,610,185,053)
Net External Cash Flow	\$ (2,420,794,969)	\$ 23,189,011	\$ (227,924)	\$ (2,397,833,882)	\$ (685,526,563)	\$ 14,737,835	\$ (670,788,728)	\$ 22,461,669	\$ 54,062,189	\$ 76,523,858	\$ (2,992,098,752)
Inter-Plan Activity											
Member Balance Transfers & Plan Switches	\$ 4,741,033	\$ (12,136,483)	\$ 1,439,137	\$ (5,956,313)	\$ -	\$ -	\$ -	\$ 8,693,929	\$ (2,737,616)	\$ 5,956,313	\$ -
DCP Fixed Assets Advanced by TP	6,118,022	-	-	6,118,022	-	63,641	63,641	(3,401,910)	(2,779,753)	(6,181,663)	-
Mitigation Rate	5,217,320	(2,324,997)	-	2,892,323	-	-	-	-	(2,892,323)	(2,892,323)	-
Interest on 12/31/10 Advance Balance	841,667	-	-	841,667	-	-	-	(317,667)	(524,000)	(841,667)	-
Income Applied to Advance (Loan) Balance	-	-	-	-	-	-	-	-	-	-	-
Total Inter-Plan Activity	\$ 16,918,042	\$ (14,461,480)	\$ 1,439,137	\$ 3,895,699	\$ -	\$ 63,641	\$ 63,641	\$ 4,974,352	\$ (8,933,692)	\$ (3,959,340)	\$ -
Investment Income:											
Interest and Dividends	\$ 1,622,860,648	\$ 4,311,425	\$ 49,126	\$ 1,627,221,199	\$ 384,739,916	\$ 2,622,713	\$ 387,362,629	\$ 393,282	\$ 664,842	\$ 1,058,124	\$ 2,015,641,952
Other Ordinary Investment Income	1,957,547,887	5,200,582	59,257	1,962,807,726	10,872,770	3,163,603	14,036,373	-	-	-	1,976,844,099
Realized Capital Value Changes	5,400,033,973	14,332,642	163,312	5,414,529,927	1,183,656,950	8,718,790	1,192,375,740	27,466,868	46,432,585	73,899,453	6,680,805,120
External Asset Management Fees	(239,365,152)	(635,917)	(7,246)	(240,008,315)	(24,118,062)	(386,839)	(24,504,901)	(129,903)	(231,957)	(361,860)	(264,875,076)
Rounding	-	-	-	-	-	-	-	-	-	-	-
Investment Return	\$ 8,741,077,356	\$ 23,208,732	\$ 264,449	\$ 8,764,550,537	\$ 1,555,151,574	\$ 14,118,267	\$ 1,569,269,841	\$ 27,730,247	\$ 46,865,470	\$ 74,595,717	\$ 10,408,416,095
Ending Market Value @ 12/31/12	\$ 67,668,091,799	\$ 184,188,348	\$ 2,585,430	\$ 67,854,865,577	\$ 12,828,625,322	\$ 119,615,875	\$ 12,948,241,197	\$ 236,009,198	\$ 408,077,537	\$ 644,086,735	\$ 81,447,193,509

The December 31, 2011 market values of assets were restated after the issuance of the December 31, 2011 annual actuarial valuation report.

## DEVELOPMENT OF FUNDING VALUE OF PENSION DEFINED BENEFIT ASSETS TRADITIONAL, COMBINED, AND MEMBER DIRECTED PLANS

Year Ended December 31	2010	2010**	2011	2012	2013	2014	2015
A. Funding Value Beginning of Year	\$57,629,417,411	\$57,629,417,411	\$63,649,059,497	\$65,436,128,317			
B. Market Value End of Year	63,649,059,497	63,649,059,497	61,846,730,622	67,854,865,577			
C. Market Value Beginning of Year	57,733,761,582	57,733,761,582	63,649,059,497	61,846,730,622			
D. Non-Investment/Administrative Net Cash Flow							
D1. Member Contributions	1,277,263,108	1,277,263,108	1,286,962,567	1,268,606,898			
D2. Employer and other Non-Member Contributions	1,180,697,746	1,180,697,746	1,315,803,013	1,288,434,801			
D3. Refund of Member Accounts	(220,131,313)	(220,131,313)	(303,634,235)	(285,068,543)			
D4. Retirement Benefits	(3,961,305,796)	(3,961,305,796)	(4,329,710,825)	(4,590,474,949)			
D5. Member Balance Transfers	1,993,522	1,993,522	3,281,364	(5,956,313)			
D6. Total Net Cash Flow: D1+D2+D3+D4+D5	(1,721,482,733)	(1,721,482,733)	(2,027,298,116)	(2,324,458,106)			
E. Investment Return							
E1. Market Total: B-C-D6	7,636,780,648	7,636,780,648	224,969,241	8,332,593,061			
E2. Assumed Rate of Return	8.00%	8.00%	8.00%	8.00%			
E3. Assumed Amount of Return	4,541,494,084	4,541,494,084	5,010,832,835	5,141,911,941			
E4. Amount Subject to Phase-In: E1-E3	3,095,286,564	3,095,286,564	(4,785,863,594)	3,190,681,120			
F. Phased-In Recognition of Investment Return							
F1. Current Year: 0.25 x E4	773,821,641	773,821,641	(1,196,465,899)	797,670,280			
F2. First Prior Year	1,351,809,420	1,351,809,420	-	(1,196,465,899)	\$ 797,670,280		
F3. Second Prior Year	(1,975,542,045)	(1,975,542,045)	-	-	(1,196,465,899)	\$ 797,670,280	
F4. Third Prior Year	-	-	-	-	-	(1,196,465,897)	\$797,670,280
F5. Total Phase-Ins	150,089,016	150,089,016	(1,196,465,899)	(398,795,619)	(398,795,619)	(398,795,617)	797,670,280
G. Funding Value End of Year							
G1. Preliminary Funding Value End of Year: A+D6+E3+F5	\$60,599,517,778	\$60,599,517,778	\$65,436,128,317	\$67,854,786,533			
G2. Upper Corridor Limit: 112% x B	71,286,946,637	71,286,946,637	69,268,338,297	75,997,449,446			
G3. Lower Corridor Limit: 88% x B	56,011,172,357	56,011,172,357	54,425,122,947	59,712,281,708			
G4. Funding Value End of Year	\$60,599,517,778	\$63,649,059,497	\$65,436,128,317	\$67,854,786,533			
H. Difference Between Market and Funding Value	3,049,541,719	-	(3,589,397,695)	79,044	398,874,663	797,670,280	-
I. Recognized Rate of Return	8.26 %	13.64 %	6.09 %	7.38 %			
J. Market Rate of Return	13.43 %	13.43 %	0.36 %	13.73 %			
K. Ratio of Funding Value to Market Value	95 %	100 %	106 %	100 %			

\*\*Funding Value was set to Market Value as of December 31, 2010.

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (line E4) are phased in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 3 consecutive years, funding value will become equal to market value.

## DEVELOPMENT OF FUNDING VALUE OF PENSION DEFINED BENEFIT ASSETS TRADITIONAL PLAN

Year Ended December 31	2010	2010**	2011	2012	2013	2014	2015
A. Funding Value Beginning of Year	\$57,519,359,607	\$57,519,359,607	\$63,515,005,521	\$65,273,933,671			
B. Market Value End of Year	63,515,005,521	63,515,005,521	61,692,653,725	67,668,091,799			
C. Market Value Beginning of Year	57,630,423,957	57,630,423,957	63,515,005,521	61,692,653,725			
D. Non-Investment/Administrative Net Cash Flow							
D1. Member Contributions	1,277,113,073	1,277,113,073	1,286,724,703	1,268,293,623			
D2. Employer and other Non-Member Contributions	1,156,321,523	1,156,321,523	1,294,766,969	1,266,758,926			
D3. Refund of Member Accounts	(219,808,143)	(219,808,143)	(302,812,289)	(284,217,216)			
D4. Retirement Benefits	(3,961,217,461)	(3,961,217,461)	(4,329,452,581)	(4,589,973,216)			
D5. Member Balance Transfers	4,334,961	4,334,961	4,126,746	4,741,033			
D6. Total Net Cash Flow: D1+D2+D3+D4+D5	(1,743,256,047)	(1,743,256,047)	(2,046,646,452)	(2,334,396,850)			
E. Investment Return							
E1. Market Total: B-C-D6	7,627,837,611	7,627,837,611	224,294,656	8,309,834,924			
E2. Assumed Rate of Return	8.00%	8.00%	8.00%	8.00%			
E3. Assumed Amount of Return	4,531,818,527	4,531,818,527	4,999,334,584	5,128,538,819			
E4. Amount Subject to Phase-In: E1-E3	3,096,019,084	3,096,019,084	(\$4,775,039,928)	3,181,296,105			
F. Phased-In Recognition of Investment Return							
F1. Current Year: 0.25 x E4	774,004,771	774,004,771	(\$1,193,759,982)	795,324,026			
F2. First Prior Year	1,352,029,747	1,352,029,747	-	(1,193,759,982)	\$ 795,324,026		
F3. Second Prior Year	(1,972,512,446)	(1,972,512,446)	-	-	(1,193,759,982)	\$ 795,324,026	
F4. Third Prior Year	-	-	-	-	-	(1,193,759,982)	\$795,324,027
F5. Total Phase-Ins	153,522,072	153,522,072	(1,193,759,982)	(398,435,956)	(398,435,956)	(398,435,956)	795,324,027
G. Funding Value End of Year							
G1. Preliminary Funding Value End of Year: A+D6+E3+F5	\$60,461,444,159	\$60,461,444,159	\$65,273,933,671	\$67,669,639,684			
G2. Upper Corridor Limit: 112% x B	71,136,806,184	71,136,806,184	69,095,772,172	75,788,262,815			
G3. Lower Corridor Limit: 88% x B	55,893,204,858	55,893,204,858	54,289,535,278	59,547,920,783			
G4. Funding Value End of Year	\$60,461,444,159	\$63,515,005,521	\$65,273,933,671	\$67,669,639,684			
H. Difference Between Market and Funding Value	3,053,561,362	-	(3,581,279,946)	(1,547,885)	396,888,071	795,324,027	-
I. Recognized Rate of Return	8.27 %	13.66 %	6.09 %	7.38 %			
J. Market Rate of Return	13.44 %	13.44 %	0.36 %	13.73 %			
K. Ratio of Funding Value to Market Value	95 %	100 %	106 %	100 %			

\*\*Funding Value was set to Market Value as of December 31, 2010.

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (line E4) are phased in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 3 consecutive years, funding value will become equal to market value.

## DEVELOPMENT OF FUNDING VALUE OF PENSION DEFINED BENEFIT ASSETS COMBINED PLAN

Year Ended December 31	2010	2010**	2011	2012	2013	2014	2015
A. Funding Value Beginning of Year	\$ 109,852,165	\$ 109,852,165	\$ 133,599,951	\$ 161,038,495			
B. Market Value End of Year	133,599,951	133,599,951	152,965,233	184,188,348			
C. Market Value Beginning of Year	103,129,693	103,129,693	133,599,951	152,965,233			
D. Non-Investment/Administrative Net Cash Flow							
D1. Member Contributions	150,035	150,035	237,864	313,275			
D2. Employer and Other Non-Member Contributions	24,376,223	24,376,223	21,036,044	21,675,875			
D3. Refund of Member Accounts	(323,170)	(323,170)	(821,946)	(851,327)			
D4. Retirement Benefits	(61,125)	(61,125)	(187,052)	(273,809)			
D5. Member Balance Transfers	(2,574,390)	(2,574,390)	(1,571,029)	(12,136,483)			
D6. Total Net Cash Flow: D1+D2+D3+D4+D5	21,567,573	21,567,573	18,693,881	8,727,531			
E. Investment Return							
E1. Market Total: B-C-D6	8,902,685	8,902,685	671,401	22,495,584			
E2. Assumed Rate of Return	8.00%	8.00%	8.00%	8.00%			
E3. Assumed Amount of Return	9,650,876	9,650,876	11,435,751	13,232,181			
E4. Amount Subject to Phase-In: E1-E3	(748,191)	(748,191)	(10,764,350)	9,263,403			
F. Phased-In Recognition of Investment Return							
F1. Current Year: 0.25 x E4	(187,048)	(187,048)	(2,691,088)	2,315,851			
F2. First Prior Year	(224,615)	(224,615)	-	(2,691,088)	\$2,315,851		
F3. Second Prior Year	(3,024,314)	(3,024,314)	-	-	(2,691,088)	\$2,315,851	
F4. Third Prior Year	-	-	-	-	-	(2,691,086)	\$2,315,850
F5. Total Phase-Ins	(3,435,977)	(3,435,977)	(2,691,088)	(375,237)	(375,237)	(375,235)	2,315,850
G. Funding Value End of Year							
G1. Preliminary Funding Value End of Year: A+D6+E3+F5	\$137,634,637	\$137,634,637	\$161,038,495	\$182,622,970			
G2. Upper Corridor Limit: 112% x B	149,631,945	149,631,945	171,321,061	206,290,950			
G3. Lower Corridor Limit: 88% x B	117,567,957	117,567,957	134,609,405	162,085,746			
G4. Funding Value End of Year	\$137,634,637	\$133,599,951	\$161,038,495	\$182,622,970			
H. Difference Between Market and Funding Value	(4,034,686)	-	(8,073,262)	1,565,378	1,940,615	2,315,850	-
I. Recognized Rate of Return	5.15 %	1.81 %	6.12 %	7.77 %			
J. Market Rate of Return	7.82 %	7.82 %	0.47 %	14.30 %			
K. Ratio of Funding Value to Market Value	103 %	100 %	105 %	99 %			

\*\*Funding Value was set to Market Value as of December 31, 2010.

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (line E4) are phased in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 3 consecutive years, funding value will become equal to market value.

## DEVELOPMENT OF FUNDING VALUE OF PENSION DEFINED BENEFIT ASSETS MEMBER DIRECTED PLAN

Year Ended December 31	2010	2010**	2011	2012	2013	2014	2015
A. Funding Value Beginning of Year	\$205,639	\$205,639	\$454,025	\$1,156,151			
B. Market Value End of Year	454,025	454,025	1,111,664	2,585,430			
C. Market Value Beginning of Year	207,932	207,932	454,025	1,111,664			
D. Non-Investment/Administrative Net Cash Flow							
D1. Member Contributions	-	-	-	-			
D2. Employer and Other Non-Member Contributions	-	-	-	-			
D3. Refund of Member Accounts	-	-	-	-			
D4. Retirement Benefits	(27,210)	(27,210)	(71,192)	(227,924)			
D5. Member Balance Transfers	232,951	232,951	725,647	1,439,137			
D6. Total Net Cash Flow: D1+D2+D3+D4+D5	205,741	205,741	654,455	1,211,213			
E. Investment Return							
E1. Market Total: B-C-D6	40,352	40,352	3,184	262,553			
E2. Assumed Rate of Return	8.00%	8.00%	8.00%	8.00%			
E3. Assumed Amount of Return	24,681	24,681	62,500	140,941			
E4. Amount Subject to Phase-In: E1-E3	15,671	15,671	(59,316)	121,612			
F. Phased-In Recognition of Investment Return							
F1. Current Year: 0.25 x E4	3,918	3,918	(14,829)	30,403			
F2. First Prior Year	4,288	4,288	-	(14,829)	\$30,403		
F3. Second Prior Year	(5,285)	(5,285)	-	-	(14,829)	\$30,403	
F4. Third Prior Year	-	-	-	-	-	(14,829)	\$30,403
F5. Total Phase-Ins	2,921	2,921	(14,829)	15,574	15,574	15,574	30,403
G. Funding Value End of Year							
G1. Preliminary Funding Value End of Year: A+D6+E3+F5	\$438,982	\$438,982	\$1,156,151	\$2,523,879			
G2. Upper Corridor Limit: 112% x B	508,508	508,508	1,245,064	2,895,682			
G3. Lower Corridor Limit: 88% x B	399,542	399,542	978,264	2,275,178			
G4. Funding Value End of Year	\$438,982	\$454,025	\$1,156,151	\$2,523,879			
H. Difference Between Market and Funding Value	15,043	-	(44,487)	61,551	45,977	30,403	-
I. Recognized Rate of Return	8.95 %	13.82 %	6.10 %	8.88 %			
J. Market Rate of Return	12.98 %	12.98 %	0.41 %	15.29 %			
K. Ratio of Funding Value to Market Value	97 %	100 %	104 %	98 %			

\*\* Funding Value was set to Market Value as of December 31, 2010.

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (line E4) are phased in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 3 consecutive years, funding value will become equal to market value.

**ALLOCATION OF FUNDING VALUE OF ASSETS AMONG DIVISIONS  
DECEMBER 31, 2012  
TRADITIONAL, COMBINED AND MEMBER DIRECTED PLANS**

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	Total DB System				Total
	State	Local	Public Safety	Law Enforcement	
(1) Employer Accumulation Fund					
(a) Allocated Amounts	\$ 821,381,657	\$ 5,365,847,080	(\$17,408,986)	\$ 515,670,608	\$ 6,685,490,359
(b) Unallocated Amounts Allocated by 1(a)	(50,639,014)	(355,527,511)	1,176,719	(34,855,524)	(439,845,330)
(c) Total EAF	\$ 770,742,643	\$ 5,010,319,569	(\$16,232,267)	\$ 480,815,084	\$ 6,245,645,029
(2) Employee Savings Fund					
(a) Total Member Deposits	\$ 5,205,339,295	\$ 7,998,053,583	\$ 3,301,942	\$ 545,537,343	\$13,752,232,163
(b) ESF Allocated by (2)(a)	\$ 4,785,055,392	\$ 7,352,118,460	\$ 3,035,076	\$ 501,446,540	\$12,641,655,468
(3) Retired Assets					
(a) Allocated Amounts	\$19,814,652,832	\$27,017,605,596	\$40,852,124	\$1,935,950,538	\$48,809,061,090
(b) Additional and DC Annuities	244,000	50,815,990	0	0	51,059,990
(c) Total Retiree Assets	\$19,814,896,832	\$27,068,421,586	\$40,852,124	\$1,935,950,538	\$48,860,121,080
(4) Subtotal: (1)(c)+ (2)(b)+ (3)(c)	\$25,370,694,867	\$39,430,859,615	\$27,654,933	\$2,918,212,162	\$67,747,421,577
(5) Assets Held For Upcoming Year Budget Allocated According to (4)	40,231,315	62,527,772	43,981	4,640,932	107,444,000
(6) <b>Total Employer + Employee Defined Benefit Assets: (4)+(5)</b>	<b>\$25,410,926,182</b>	<b>\$39,493,387,387</b>	<b>\$27,698,914</b>	<b>\$2,922,853,094</b>	<b>\$67,854,865,577</b>
(7) Market Value Adjustment Allocated According to (6)	(53,000)	(93,536)	634	66,858	(79,044)
(8) <b>Funding Value of Defined Benefit Assets (6)+(7)</b>	<b>\$25,410,873,182</b>	<b>\$39,493,293,851</b>	<b>\$27,699,548</b>	<b>\$2,922,919,952</b>	<b>\$67,854,786,533</b>

**ALLOCATION OF FUNDING VALUE OF ASSETS AMONG DIVISIONS  
DECEMBER 31, 2012  
TRADITIONAL PLAN**

	Traditional Plan				
	State	Local	Public Safety	Law Enforcement	Total
(1) Employer Accumulation Fund (EAF)					
(a) Allocated Amounts	\$ 750,259,189	\$ 5,257,369,610	\$ (17,408,986)	\$ 515,670,608	\$ 6,505,890,421
(b) Unallocated Amounts Allocated by (1)(a)	(50,711,979)	(355,359,347)	1,176,719	(34,855,524)	(439,750,131)
(c) Total EAF	\$ 699,547,210	\$ 4,902,010,263	\$ (16,232,267)	\$ 480,815,084	\$ 6,066,140,290
(2) Employee Savings Fund (ESF)					
(a) Total Member Deposits	\$ 5,204,876,148	\$ 7,997,582,487	\$ 3,301,942	\$ 545,537,343	\$ 13,751,297,920
(b) ESF Allocated by (2)(a)	\$ 4,784,213,523	\$ 7,351,210,903	\$ 3,035,076	\$ 501,446,540	\$ 12,639,906,042
(3) Retired Assets					
(a) Allocated Amounts	\$ 19,813,393,740	\$ 27,013,345,075	\$ 40,852,124	\$ 1,935,950,538	\$ 48,803,541,477
(b) Additional Annuities	244,000	50,815,990	0	0	51,059,990
(c) Total Retiree Assets	\$ 19,813,637,740	\$ 27,064,161,065	\$ 40,852,124	\$ 1,935,950,538	\$ 48,854,601,467
(4) Subtotal: (1)(c)+ (2)(b)+ (3)(c)	\$ 25,297,398,473	\$ 39,317,382,231	\$ 27,654,933	\$ 2,918,212,162	\$ 67,560,647,799
(5) Assets Held For Upcoming Year Budget Allocated According to (4)	40,231,315	62,527,772	43,981	4,640,932	107,444,000
<b>(6) Total Employer + Employee Defined Benefit Assets: (4)+(5)</b>	<b>\$25,337,629,788</b>	<b>\$39,379,910,003</b>	<b>\$27,698,914</b>	<b>\$2,922,853,094</b>	<b>\$67,668,091,799</b>
(7) Market Value Adjustment Allocated According to (6)	579,590	900,803	634	66,858	1,547,885
<b>(8) Funding Value of Defined Benefit Assets (6)+(7)</b>	<b>\$25,338,209,378</b>	<b>\$39,380,810,806</b>	<b>\$27,699,548</b>	<b>\$2,922,919,952</b>	<b>\$67,669,639,684</b>

**ALLOCATION OF FUNDING VALUE OF ASSETS AMONG DIVISIONS  
DECEMBER 31, 2012  
COMBINED PLAN**

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	Combined Plan				Total
	State	Local	Public Safety	Law Enforcement	
(1) Employer Accumulation Fund					
(a) Allocated Amounts	\$71,161,279	\$108,203,900	\$0	\$0	\$179,365,179
(b) Unallocated Amounts Allocated by (1)(a)	40,394	61,422	0	0	101,816
(c) Total EAF	\$71,201,673	\$108,265,322	\$0	\$0	\$179,466,995
(2) Employee Savings Fund					
(a) Total Member Deposits	\$ 368,631	\$ 426,643	\$0	\$0	\$ 795,274
(b) ESF Allocated by (2)(a)	\$ 744,642	\$ 861,830	\$0	\$0	\$ 1,606,472
(3) Retired Assets					
(a) Allocated Amounts	\$ 719,078	\$ 2,395,803	\$0	\$0	\$ 3,114,881
(b) DC Annuities	0	0	0	0	0
(c) Total Retiree Assets	\$ 719,078	\$ 2,395,803	\$0	\$0	\$ 3,114,881
(4) Subtotal: (1)(c)+ (2)(b)+ (3)(c)	\$72,665,393	\$111,522,955	\$0	\$0	\$184,188,348
(5) Assets Held For Upcoming Year Budget Allocated According to (4)	0	0	0	0	0
(6) <b>Total Employer + Employee Defined Benefit Assets: (4)+(5)</b>	<b>\$72,665,393</b>	<b>\$111,522,955</b>	<b>\$0</b>	<b>\$0</b>	<b>\$184,188,348</b>
(7) Market Value Adjustment Allocated According to (6)	(617,568)	(947,810)	0	0	(1,565,378)
(8) <b>Funding Value of Defined Benefit Assets (6)+(7)</b>	<b>\$72,047,825</b>	<b>\$110,575,145</b>	<b>\$0</b>	<b>\$0</b>	<b>\$182,622,970</b>

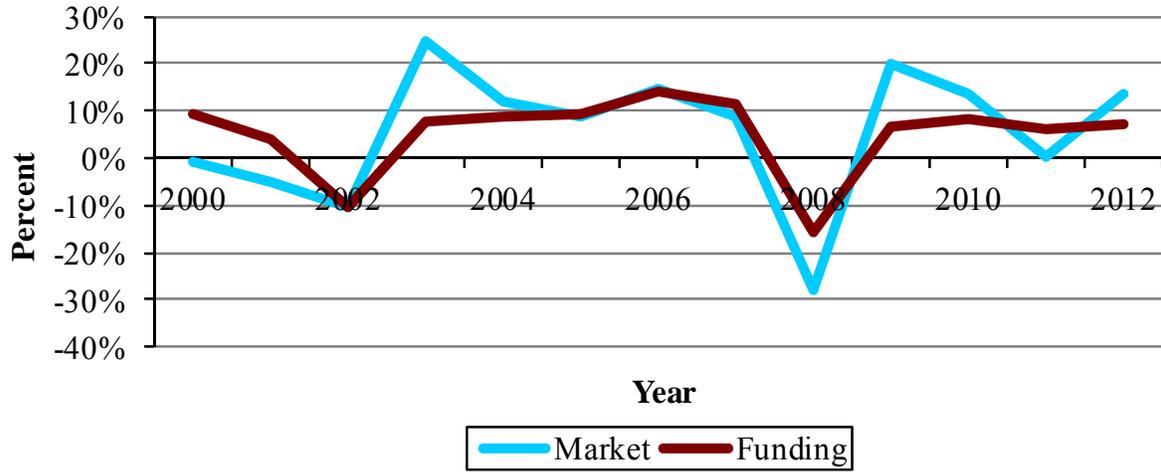
**ALLOCATION OF FUNDING VALUE OF ASSETS AMONG DIVISIONS  
DECEMBER 31, 2012  
MEMBER DIRECTED PLAN**

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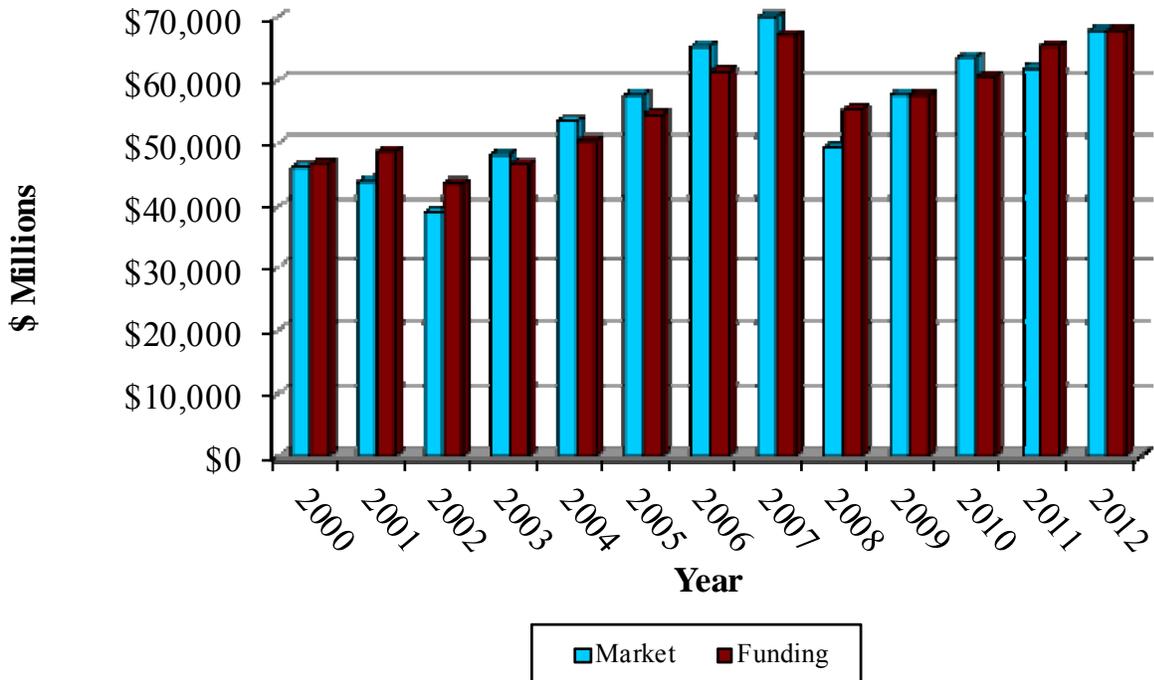
	Member Directed Plan				
	State	Local	Public Safety	Law Enforcement	Total
(1) Employer Accumulation Fund					
(a) Allocated Amounts	\$ (38,811)	\$ 273,570	\$0	\$0	\$ 234,759
(b) Unallocated Amounts Allocated by 1(a)	32,571	(229,586)	0	0	(197,015)
(c) Total EAF	\$ (6,240)	\$ 43,984	\$0	\$0	\$ 37,744
(2) Employee Savings Fund					
(a) Total Member Deposits	\$ 94,516	\$ 44,453	\$0	\$0	\$ 138,969
(b) ESF Allocated by (2)(a)	\$ 97,227	\$ 45,727	\$0	\$0	\$ 142,954
(3) Retired Assets					
(a) Allocated Amounts	\$ 540,014	\$ 1,864,718	\$0	\$0	\$ 2,404,732
(b) DC Annuities	0	0	0	0	0
(c) Total Retiree Assets	\$ 540,014	\$ 1,864,718	\$0	\$0	\$ 2,404,732
(4) Subtotal: (1)(c)+ (2)(b)+ (3)(c)	\$ 631,001	\$ 1,954,429	\$0	\$0	\$ 2,585,430
(5) Assets Held For Upcoming Year Budget Allocated According to (4)	0	0	0	0	0
(6) <b>Total Employer + Employee Defined Benefit Assets: (4)+(5)</b>	<b>\$ 631,001</b>	<b>\$ 1,954,429</b>	<b>\$0</b>	<b>\$0</b>	<b>\$ 2,585,430</b>
(7) Market Value Adjustment Allocated According to (6)	(15,022)	(46,529)	0	0	(61,551)
(8) <b>Funding Value of Defined Benefit Assets (6)+(7)</b>	<b>\$ 615,979</b>	<b>\$ 1,907,900</b>	<b>\$0</b>	<b>\$0</b>	<b>\$ 2,523,879</b>

# COMPARISON OF DEFINED BENEFIT PENSION ASSETS

## Comparison of Rates of Return



## Comparison of Defined Benefit Pension Asset Values



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## **SECTION III**

### **BENEFITS AND CONDITIONS EVALUATED**

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## **BENEFITS AND CONDITIONS EVALUATED**

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### **PLANS**

***Traditional Pension Plan.*** The Traditional Pension Plan is a defined benefit plan under which a member's retirement benefit is based on a formula. The formula is determined by years of contributing service and the average of the three highest years of earnable salary (or final average salary). OPERS investment professionals manage the investment of employee and employer contributions to ensure that funds are available to pay the formula benefit.

***Combined Plan.*** The Combined Plan is a retirement plan with both a defined benefit and a defined contribution component. Under the defined benefit portion of the Combined Plan, the member's benefit is determined by a reduced formula (similar to the Traditional Pension Plan). OPERS investment professionals manage the investment of employer contributions to ensure that funds are available to pay the reduced formula benefit. Under the defined contribution portion of the Combined Plan, employee contributions are deposited into the member's individual defined contribution account and invested as directed by the member. The member's retirement benefit under this portion of the Combined Plan is based on employee contributions and the gains and losses on those contributions. The member directs the investment by selecting from among the nine professionally-managed OPERS Investment Options.

***Member-Directed Plan.*** The Member-Directed Plan is a defined contribution plan under which employee and employer contributions are deposited into a member's individual defined contribution account and invested as directed by the member. The member's retirement benefit is based on employee and employer contributions and the gains and losses on those contributions. Under the Member-Directed Plan, the member directs the investment by selecting from several professionally-managed OPERS Investment Options.

## **BENEFITS AND CONDITIONS EVALUATED**

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### **TERMS**

**Final average salary** (“FAS”) means the average of the annual earnings for the 3 highest calendar years of compensation for Transition Group A and B members. The highest 5 calendar years is used for Transition Group C members.

**Participant Contribution Account** is the account for each Participant in the Combined or Member-Directed Plan to which shall be credited the employee contributions.

**Miscellaneous Contribution Account** is the account to which shall be credited any voluntary after-tax contributions for members in the Combined and Member-Directed Plans.

**Rollover Account** is the account to which shall be credited any rollover amounts for members in the Combined or Member-Directed Plans.

**Employers’ Accumulation Fund** is the fund to which shall be credited employer contributions for members in the Traditional or Combined Plan. There are separate accounts in the Employers’ Accumulation Fund for the Combined Plan and the Traditional Pension Plan.

**Employer Contribution Account** is the fund to which shall be credited a portion of the employer contributions for members in the Member-Directed Plan.

### **CONTRIBUTIONS**

**Member contributions.** State and local government members contribute 10.0% of earnable salary in 2011. The maximum statutory rate is 10.0% of earnable salary.

Law enforcement members whose primary duties are to preserve the peace, to protect life and property, and to enforce the laws of the state contribute 12.1% of earnable salary in 2012 increasing to 13.0% by 2014. Remaining Law enforcement members (Public Safety) contribute 11.5% of earnable salary in 2012 increasing to 12.0% by 2013.

**Employer contributions.** Each employer contributes the remaining amounts necessary to finance OPERS benefits. Employer contributions are expressed as percents of member-covered payroll. The maximum statutory rate for state and local government employers is 14.0%. The maximum statutory rate for law enforcement employers is 18.1% (H.B. 416, effective 1/1/2001).

## BENEFITS AND CONDITIONS EVALUATED

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### CONTRIBUTIONS (CONCLUDED)

*Health Care Preservation Plan (HCPP)*. The following table shows total scheduled employer contribution rates (includes contributions for both the pension and retiree health programs):

Year	State	Local Government	Law Enforcement	Public Safety
2012 and Later	14.00%	14.00%	18.10%	18.10%

The portion of the above employer contribution rates scheduled to be allocated to the retiree health program are as follows:

Year	All Divisions	
	Post-APD	Pre-APD
2012	4.0%	4.0%
2013	1.0%	1.0%
2014	2.0%	0.0%
2015	3.0%	0.0%
2016 and Later	4.0%	0.0%

The Pre-APD schedule was adopted at the July 2010 Board meeting. The Post-APD schedule was adopted at the January 2013 Board meeting and is subject to change if conditions warrant.

Member contribution rates scheduled to be allocated to the pension program are as follows:

Year	State	Local Government	Law Enforcement	Public Safety
2012	10.00%	10.00%	12.10%	11.50%
2013	10.00%	10.00%	12.60%	12.00%
2014 and Later	10.00%	10.00%	13.00%	12.00%

## SENATE BILL 343

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**Senate Bill 343.** Senate Bill (SB) 343 became effective January 7, 2013. The benefit changes enacted by SB 343 do not apply to members who retired with an effective date of January 1, 2013 or earlier. The benefit provisions enumerated on pages III-9 through the end of Section III are the provisions that were applicable prior to the enactment of SB 343. Changes to the benefit provisions resulting from Senate Bill 343 are enumerated on pages III-4 through III-8.

**Transition Groups.** A transition plan was developed as part of the SB 343 benefit changes. The transition group to which a member belongs is dependent upon the date at which that member is first eligible to retire with a reduced or unreduced benefit.

A member is in Group A if the member is eligible to retire under the retirement eligibility conditions in place prior to the passage of SB 343 on or before January 7, 2018.

A member is in Group B if the member is not in Group A and satisfies either of the following conditions:

- (1) The member has 20 years of service credit as of January 7, 2013, or
- (2) The member is eligible to retire under the retirement eligibility conditions in place prior to the passage of SB 343 on or before January 7, 2023.

A member is in Group C if the member satisfies either of the following conditions:

- (1) The member was hired prior to January 7, 2013 but was not in Group A or Group B, or
- (2) The member was hired on or after January 7, 2013.

**Key Benefit Changes.** There are five key components that were affected by SB 343:

- (1) Age and service retirement eligibility conditions,
- (2) Benefit formula,
- (3) Cost of living allowance (COLA),
- (4) Final average salary (FAS) period, and
- (5) Early retirement reduction factors

# SENATE BILL 343

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## KEY BENEFIT CHANGES FOR TRANSITION GROUP A

**COLAs.** COLAs provided up to December 31, 2018 will be based upon a simple, 3 percent COLA. COLAs provided after December 31, 2018 will be based upon the annual percentage change in the Consumer Price Index (CPI), but not greater than 3%.

## KEY BENEFIT CHANGES FOR TRANSITION GROUP B

**Retirement Eligibility.** The table below shows retirement eligibility conditions for Group B members:

<u>Valuation Group</u>	<u>Unreduced</u>		<u>Reduced</u>	
	<u>Age</u>	<u>Service</u>	<u>Age</u>	<u>Service</u>
State / Local Government	52	31	55	25
	Any	32		
	66	5	60	5
Law Enforcement	50	25	48	25
	64	15	52	15
Public Safety	54	25	48	25
	64	15	52	15

**Early Retirement Reduction Factors.** Presented below are the reduction factors, expressed as a percentage of the base amount, applicable to a Group B member that retires with a reduced benefit:

### **State and Local Government:**

<u>Service</u>	<u>Ages</u>										
	<u>55</u>	<u>56</u>	<u>57</u>	<u>58</u>	<u>59</u>	<u>60</u>	<u>61</u>	<u>62</u>	<u>63</u>	<u>64</u>	<u>65</u>
30	75%	76%	78%	79%	80%	82%	83%	85%	86%	88%	89%
29	69	70	72	73	74	75	76	78	79	80	89
28	64	65	66	67	68	69	70	71	72	80	89
27	59	60	61	62	62	63	64	65	72	80	89
26	55	55	56	57	57	58	59	65	72	80	89
25	50	51	51	52	52	53	59	65	72	80	89
24 & Under						53	59	65	72	80	89

## SENATE BILL 343

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### Law Enforcement and Public Safety:

Law Enforcement		Public Safety	
Age	Factor	Age	Factor
48	84%	48	58%
49	92	49	64
50	100	50	70
		51	76
		52	83
		53	91
		54	100

**COLAs.** COLAs will be based upon the annual percentage change in the Consumer Price Index (CPI), but not greater than 3%.

### KEY BENEFIT CHANGES FOR TRANSITION GROUP C

**Retirement Eligibility.** The table below shows retirement eligibility conditions for Group C members:

Valuation Group	Unreduced		Reduced	
	Age	Service	Age	Service
State / Local Government	55	32	57	25
	67	5	62	5
Law Enforcement	52	25	48	25
	64	15	56	15
Public Safety	56	25	52	25
	64	15	56	15

## SENATE BILL 343

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**Early Retirement Reduction Factors.** Presented below are the reduction factors, expressed as a percentage of the base amount, applicable to a Group C member that retires with a reduced benefit:

**State and Local Government:**

<u>Service</u>	<u>Ages</u>									
	<u>57</u>	<u>58</u>	<u>59</u>	<u>60</u>	<u>61</u>	<u>62</u>	<u>63</u>	<u>64</u>	<u>65</u>	<u>66</u>
31	80%	80%	81%	82%	83%	85%	86%	87%	88%	89%
30	73	74	75	75	76	77	78	79	80	89
29	67	68	68	69	70	70	71	72	80	89
28	61	62	62	63	63	64	64	72	80	89
27	56	57	57	57	58	58	64	72	80	89
26	51	52	52	52	52	58	64	72	80	89
25	47	47	47	47	52	58	64	72	80	89
24 & Under						58	64	72	80	89

**Law Enforcement and Public Safety:**

<u>Law Enforcement</u>		<u>Public Safety</u>	
<u>Age</u>	<u>Factor</u>	<u>Age</u>	<u>Factor</u>
48	70%	52	69%
49	76	53	76
50	84	54	83
51	91	55	91
52	100	56	100

**COLAs.** COLAs will be based upon the annual percentage change in the Consumer Price Index (CPI), but not greater than 3%

## SENATE BILL 343

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***FAS Period.*** Final average salary is based on the average of the annual earnings for the 5 highest calendar years of compensation.

***Benefit Formula.*** Service breakpoint for the 2.50% benefit multiplier in the Traditional Plan or 1.25% benefit multiplier in the Combined Plan for State and Local Government members increased from 30 years to 35 years.

### **OTHER BENEFIT CHANGES FOR ALL TRANSITION GROUPS**

***Minimum Benefit.*** The \$86 minimum benefit provision has been eliminated.

***Long Interest Calculation.*** The minimum allowance calculation based upon twice the member's savings funding balance at retirement together with interest credits, annuitized with unisex factors that reflect plan interest and mortality assumptions, but not the plan's COLA, has been eliminated.

***Disability Program.*** The definition of disability was changed to a more restrictive definition which is expected to result in a reduction in future disability cases.

## TRADITIONAL PENSION PLAN

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### AGE & SERVICE BENEFITS - STATE AND LOCAL GOVERNMENT MEMBERS

**Age and service eligibility.** A member who (i) has attained age 60 years and has 5 or more years of service credit or 60 contributing months, or (ii) has attained age 55 years and has 25 or more years of service credit, or (iii) has 30 or more years of service credit, may retire with an age and service retirement allowance.

**Age and service allowance.** A retiring member's age and service allowance is equal to Ohio service credit times the greater of \$86, or 2.2% of FAS for the first 30 years of service plus 2.5% for years of service over 30 years (H.B. 628). The allowance is then adjusted by factors based on attained age or years of service (whichever yields the higher percentage) as determined in the following schedule:

Attained Age	OR	Years of Service Credit	Percentage of Base Amount
58		25	75%
59		26	80
60		27	85
61		N/A	88
N/A		28	90
62		N/A	91
63		N/A	94
N/A		29	95
64		N/A	97
65		30 or more	100

Maximum allowance is 100% of FAS or the limits under IRC Section 415(b). Minimum allowance is based upon twice the member's savings funding balance at retirement together with interest credits, annuitized with unisex factors that reflect plan interest and mortality assumptions, but not the plan's COLA.

## **TRADITIONAL PENSION PLAN**

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### **AGE & SERVICE BENEFITS – LAW MEMBERS (PUBLIC SAFETY) ELIGIBLE TO RETIRE UNDER OHIO REVISED CODE SECTION 145.33(B)(2)(B)**

*Age and service eligibility.* A law member whose secondary duties are to preserve the peace, to protect life and property, and to enforce the laws of the state and who (i) has attained age 52 and has 25 or more years of credited service, or (ii) has attained age 62 and has 15 or more years of credited service, or (iii) has attained age 52 and has 15 or more years of credited service, may retire with an age and service allowance. A member covered by these provisions may retire at age 48 with 25 or more years of service subject to the reduction described in 145.33 (C)(1).

*Age and service allowance.* A retiring member's age and service allowance under eligibility (i) or (ii) above is equal to 2.5% of FAS times the first 25 years of service credit plus 2.1% of FAS times service credit in excess of 25 years (H.B. 628). Maximum allowance is 90% of FAS or the limits under IRC Section 415(b). A retiring member's age and service allowance under eligibility (iii) above is equal to 1.5% of FAS times years of service credit. Minimum allowance for all law members is based upon twice the member's savings fund balance at retirement together with interest credits.

### **AGE & SERVICE BENEFITS - LAW MEMBERS (LAW ENFORCEMENT) ELIGIBLE TO RETIRE UNDER OHIO REVISED CODE SECTION 145.33(B)(2)(A)**

*Age and service eligibility.* A law member whose primary duties are to preserve the peace, to protect life and property, and to enforce the laws of the state and who (i) has attained age 48 and has 25 or more years of credited service, or (ii) has attained age 62 and has 15 or more years of credited service, or (iii) has attained age 52 and has 15 or more years of credited service, may retire with an age and service allowance.

*Age and service allowance.* A retiring member's age and service allowance under eligibility (i) or (ii) above is equal to 2.5% of FAS times the first 25 years of service credit plus 2.1% of FAS times service credit in excess of 25 years (H.B. 628). Maximum allowance is 90% of FAS or the limits under IRC Section 415(b). A retiring member's age and service allowance under eligibility (iii) above is equal to 1.5% of FAS times years of service credit. Minimum allowance for all law members is based upon twice the member's savings fund balance at retirement together with interest credits.

## **TRADITIONAL PENSION PLAN**

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### **DISABILITY RETIREMENT**

The disability program was revised in 1992, in order to comply with the Older Workers Benefit Protection Act. Employees becoming members after July 29, 1992 are covered by the post July 29, 1992 program. Other members were able to elect coverage under the pre July 29, 1992 program (original plan) or elect to be covered by the post July 29, 1992 program (revised plan).

Features of the original plan are:

- a) Upon becoming permanently disabled after completion of at least 5 years or 60 contributing months of service but before attaining age 60, a member is eligible for a disability allowance. The service requirement is waived for Law Enforcement members with an on-duty illness or injury.
- b) The amount of the allowance is the service the member would have had if employment had continued to age 60 times (i) 2.2% of FAS (H.B. 628), or (ii) \$86, whichever produces the greater benefit.
- c) Maximum allowance is 75% of FAS, minimum allowance is 30% of FAS.

Features of the revised plan are:

- a) A member may apply at any age after completion of 5 years or 60 contributing months of service. The service requirement is waived for Law Enforcement members with an on-duty illness or injury.
- b) A disability benefit equal to the greater of 45% of FAS or the actual service credit times 2.2% of FAS (H.B. 628) with no early retirement reduction (maximum 60% of FAS). The disability benefit period is to age 65 if the member is disabled prior to age 60. The benefit period declines gradually from 60 months for members disabled at ages 60 and 61 to 12 months for members disabled at age 69 or older.
- c) After the disability benefit ends, a service retirement benefit equal to the greater of (i) the accrued benefit based on actual service, or (ii) 2.2% of FAS (H.B. 628) times service credit including the period of disability (maximum 45% of FAS). In addition, an amount equal to the cost-of-living increases the member would have received had the member retired on the basis of age and service is paid.

## TRADITIONAL PENSION PLAN

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### SURVIVOR BENEFITS

**Death while eligible to retire.** If a member dies in service after becoming eligible to retire with an age and service allowance and leaves a surviving spouse or other sole dependent beneficiary, the survivor receives the same amount that would have been paid had the member retired the last day of the month of death and elected the 100% joint and survivor form of payment.

**Survivor (death-in-service) allowances.** If a deceased member had at least 1-1/2 years of contributing service credit, with at least 1/4 year of such service occurring within the 2-1/2 years prior to death, or was receiving a disability benefit, qualified survivors may receive the following monthly benefits. The benefit paid will be the greater of the applicable benefits paid under the following two schedules (H.B. 628):

#### *Schedule 1*

<u>Number of Qualified Survivors Affecting the Benefit</u>	<u>Annual Benefit as a % of Deceased Member's FAS</u>	<u>Minimum Monthly Benefit</u>
1	25%	\$250
2	40%	\$400
3	50%	\$500
4	55%	\$500
5 or more	60%	\$500

#### *Schedule 2*

<u>Years of Service</u>	<u>Annual Benefit as a % of Deceased Member's FAS</u>
20	29%
21	33%
22	37%
23	41%
24	45%
25	48%
26	51%
27	54%
28	57%
29 or more	60%

Qualifying survivors who are paid benefits under Schedule 2 share equally in the benefits, except that if there is a surviving spouse, the spouse receives the greater of 25% of FAS or \$250.

## TRADITIONAL PENSION PLAN

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A *qualified spouse* is the surviving spouse of a deceased member who is age 62 or at any age if the deceased member had 10 or more years of Ohio service credit or if the surviving spouse is caring for a qualified child or is adjudged physically or mentally incompetent.

A *qualified child* is a child who has never been married and under the age of 18 (or 22 if attending an approved school), or regardless of age is adjudged physically or mentally incompetent at the time of the member's death.

A *qualified parent* is a dependent parent aged 65 or older (earlier if mentally or physically incompetent) who received at least one-half support from the member during the 12-month period immediately preceding the member's death.

Qualified *survivors of disability benefit recipients* have the FAS used in calculating their benefits adjusted for each year between the effective date of the disability benefit and the recipient's date of death. The FAS is adjusted by the lesser of (1) 3% or (2) the actual average percentage change in the CPI.

### **BENEFITS AT RETIREMENT**

***Optional Benefit Forms.*** Retiring members may elect to have benefits paid in straight life form, in a form that guarantees a minimum number of monthly payments, or in a form that provides a continuation of all or a portion of the monthly benefit to a beneficiary after the death of the retiree. If a retiring member elects benefits in other than straight life form, the monthly amount is adjusted. The adjustment is based upon interest, COLA, and mortality assumptions (with a blend of male and female mortality rates to produce unisex election factors consistent with the gender distribution of members electing optional forms of payment).

## TRADITIONAL PENSION PLAN

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**PLOP.** Effective 01/01/2004, retiring members may also elect to receive a Partial Lump Sum Option Payment (PLOP) (S.B.247). The PLOP is an option that allows a retiree to initially receive a partial lump sum benefit payment along with a reduced monthly retirement allowance. The lump sum payment cannot be less than 6 times or more than 36 times the monthly amount that would be payable to the member under the plan of payment selected and shall not result in a monthly allowance that is less than 50% of the monthly benefit. The total amount paid as a lump sum and monthly benefit shall be the actuarial equivalent of the amount that would have been paid had the lump sum not been selected.

**QEBA.** Qualified Excess Benefit Arrangement was established 01/01/2004 (H.B.190). The QEBA is operated in accordance with Internal Revenue Code Section 415(m). Under this arrangement the recipient may be paid the portion of his/her retirement benefit that was previously limited due to IRC Section 415(b).

**Post-retirement increases.** Each July after June 30, 1971 or the annual anniversary established 12 months after the initial date of retirement, each allowance is increased by 3.0% of the corresponding base allowance, except that no allowance shall exceed the limits established by Section 415 of the Internal Revenue Code.

**Post-retirement death benefit.** Upon the death of an age and service or disability retiree, a death benefit in the following amount is payable:

<b>Service Credit at Retirement</b>	<b>Amount of Death Benefit</b>
5 to 9 years	\$ 500
10 to 14 years	1,000
15 to 19 years	1,500
20 to 24 years	2,000
25 or more years	2,500

**Deferred benefits.** A member with at least 5 years of service credit who leaves service before being eligible for an immediate allowance and who does not withdraw accumulated contributions will be entitled to a deferred allowance at age 60. For law members, the age at which benefits commence depends on the amount of service credit. The amount of the allowance will be based on credited service and final average salary at time of leaving service.

## **TRADITIONAL PENSION PLAN**

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### **REFUND OF MEMBERS ACCUMULATED CONTRIBUTIONS**

In the event a member leaves service prior to retirement, the member may elect to receive a refund of contributions with interest and may be eligible to receive an additional amount as described below. These refund provisions are available to all members. If a member dies prior to retirement and survivor benefits are not payable, the member's contributions with interest are paid to a designated beneficiary or other survivor. Interest is credited annually to member contribution balances. The rate of interest credited is determined by the OPERS Board and will not be greater than 6%. At the present time, 1% interest is credited to member contribution balances.

If the member has, or had at the time of death, at least 5 years but less than 10 years of qualified service, an additional 33% of the member's eligible contributions will be paid to the member or survivor. If the member has, or had at the time of death, at least 10 years of qualified service credit, an additional 67% of the member's eligible contributions will be paid to the member or survivor. The additional amount is not paid if the member is a re-employed retiree, or in the case of a deceased member, was receiving disability benefits at the time of death.

### **SUPPLEMENTAL BENEFITS**

***Health Care Coverage.*** Health care coverage is available to persons being meeting retiree health care eligibility requirements. Members retiring with a normal or early service retirement allowance after January 1, 2015 must have 20 or more years of qualified service credit to be eligible for this benefit.

## **TRADITIONAL PENSION PLAN**

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### **ADDITIONAL ANNUITY PROGRAM**

The additional annuity program provides Traditional Plan and re-employed retiree members the opportunity of supplementing their retirement income. Members make additional contributions (independent of the contributions described on page III-2) to an account that earns investment income based upon the return of the OPERS Stable Value Fund. At termination, the member may take the additional annuity account balance either as a lump sum or annuitized in monthly payments.

### **RE-EMPLOYED RETIREES**

Re-employed age and service retirees contribute to the “Money Purchase Plan”. In most instances, re-employed retirees will continue to receive their retirement allowance during re-employment. Upon termination of re-employment, members are eligible to apply for either a refund of contributions prior to age 65 or a Money Purchase Plan benefit as a lump sum or annuity after age 65. The Money Purchase Plan benefit is equal to member contributions and allowable interest plus an additional 67% matching amount. If monthly benefits are elected, joint and survivor options are also available.

## COMBINED PLAN

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### AGE & SERVICE BENEFITS - STATE AND LOCAL GOVERNMENT MEMBERS\*

**Eligibility.** A member who (i) has attained age 60 years and has 5 or more years of service credit in the Plan or 60 contributing months in the Plan, or (ii) has attained age 55 years and has 25 or more years of service credit, or (iii) has 30 or more years of service credit, may retire under the Combined Plan with an age and service retirement allowance under the defined benefit portion of the Plan and with a retirement benefit under the defined contribution portion of the Plan.

*\*Law Enforcement and Public Safety members must contribute to the Traditional Pension Plan only.*

**Age and service retirement allowance (Defined Benefit portion of the Plan).** A retiring member's age and service retirement allowance is equal to Ohio service credit in the Plan times 1.0% of FAS for the first 30 years of service plus 1.25% for years of service over 30 years. The allowance is then adjusted by factors based on attained age or years of service (whichever yields the higher percentage) as determined in the following schedule:

Attained Age	OR	Years of Service Credit	Percentage of Base Amount
58		25	75%
59		26	80
60		27	85
61		N/A	88
N/A		28	90
62		N/A	91
63		N/A	94
N/A		29	95
64		N/A	97
65		30 or more	100

Maximum allowance is 100% of FAS or the limits under IRC Section 415(b).

**Retirement benefit (Defined Contribution portion of the Plan).** The member's retirement benefit under this portion of the Combined Plan is based on the amounts credited to the Participant Contribution Account, Rollover Account, and Miscellaneous Account and the gains and losses on the amounts in those Accounts.

## **COMBINED PLAN**

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### **DISABILITY RETIREMENT**

A Combined Plan member may apply after completion of 5 years in the Plan or 60 contributing months of service in the Plan. Combined Plan members may be covered under the original or revised disability plan. Combined Plan members who apply for disability may:

- 1) Take a lump sum distribution of the Participant Contribution Account, Rollover Account, and Miscellaneous Account and any additional amount they are entitled to from the Employers' Accumulation Fund, or
- 2) Transfer all service credit and the Participant's Accounts (as listed above) in the Combined Plan to the Traditional Pension Plan to be paid a disability benefit under the Traditional Pension Plan guidelines.

### **SURVIVOR BENEFITS**

Combined Plan members are eligible for the same survivor benefits as those listed under the Traditional Pension Plan and must qualify for survivor benefits under the same guidelines as those members in the Traditional Pension Plan.

### **BENEFITS AT RETIREMENT**

***Optional Benefit Forms under the Defined Benefit portion of the Plan.*** Retiring members may elect to have their age and service retirement allowance in straight life form, in a form that guarantees a minimum number of monthly payments, or in a form that provides a continuation of all or a portion of the monthly benefit to a beneficiary after the death of the retiree. If a retiring member elects benefits in other than straight life form, the monthly amount is adjusted. The adjustment is based upon interest, COLA, and mortality assumptions (with a blend of male and female mortality rates to produce unisex election factors consistent with the gender distribution of members electing optional forms of payment).

## COMBINED PLAN

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**Optional Benefit Forms under the Defined Contribution portion of the Plan.** Retiring members may elect to have retirement benefits paid in a partial lump sum, subject to any rules adopted by the Board; monthly annuity payments (with joint and survivor options) similar to those offered under the defined benefit portion of the Plan; periodic payments over a period certain; periodic payments of a specific monthly amount; payments with a deferred start date; or a combination of these options.

**QEBA.** Qualified Excess Benefit Arrangement was established 01/01/2004 (H.B.190). The QEBA is operated in accordance with Internal Revenue Code Section 415(m). Under this arrangement the recipient may be paid the portion of his/her retirement benefit that was previously limited due to IRC Section 415(b). The QEBA is available to Combined Plan members for the age and service retirement allowance under the defined benefit portion of the Plan.

**Post-retirement increases.** Each July after June 30, 1971 or the annual anniversary established 12 months after the initial date of retirement, each age and service retirement allowance under the defined benefit portion of the plan is increased by 3.0% of the corresponding base allowance, except that no allowance shall exceed the limits established by Section 415 of the Internal Revenue Code.

**Post-retirement death benefit.** Upon the death of an age and service retiree, a death benefit in the following amount is payable:

<b>Service Credit at Retirement</b>	<b>Amount of Death Benefit</b>
5 to 9 years	\$ 500
10 to 14 years	1,000
15 to 19 years	1,500
20 to 24 years	2,000
25 or more years	2,500

## COMBINED PLAN

---

### **REFUNDS AND VESTING**

A participant in the Combined Plan shall at all times be 100% vested in the Participant Contribution Account, Miscellaneous Contribution Account, and the Rollover Account.

If the member has at least 5 years but less than 10 years of qualified service credit in the Plan, an additional 33% of the member's eligible contributions will be paid from the Employers' Accumulation Fund. If the member has at least 10 years of qualified service credit in the Plan, an additional 67% of the member's eligible contributions will be paid to the member. Amounts paid to purchase service credit earn interest at the same rates as the Traditional Pension Plan and are payable as a refund.

In the event a member leaves service prior to retirement, the member may elect to receive a refund of their Participant Contribution Account, the Rollover Account, the Miscellaneous Account, and any additional amounts they are entitled to from the Employers' Accumulation Fund (as described above).

### **SUPPLEMENTAL BENEFITS**

***Health Care Coverage.*** Health care coverage is available to persons meeting retiree health care eligibility requirements. Members retiring with a normal or early service retirement allowance after January 1, 2015 must have 20 or more years of qualified service credit to be eligible for this benefit.

## **MEMBER-DIRECTED PLAN**

---

**AGE & SERVICE BENEFITS - STATE AND LOCAL GOVERNMENT MEMBERS.** (Law Enforcement and Public Safety members must contribute to the Traditional Pension Plan Only.)

***Eligibility.*** A participant who has attained age fifty-five (55) may retire under the Member-Directed Plan.

***Retirement benefits.*** The member's retirement benefit is based on the value of the Participant Contribution Account, the Rollover Account, the Miscellaneous Account, and any vested portion of the Employer Contribution Account.

### **DISABILITY RETIREMENT**

Not available under the Member-Directed Plan. Members may:

- 1) If age fifty-five (55), terminate employment and begin receiving retirement benefits, or
- 2) Take a lump sum distribution of their Participant Contribution Account, Rollover Account, Miscellaneous Account and any vested portion of the Employer Contribution Account.

### **SURVIVOR BENEFITS**

Not available under the Member-Directed Plan. Survivors must take a lump sum distribution of the member's Participant Contribution Account, Rollover Account, Miscellaneous Account and any vested portion of the Employer Contribution Account.

### **BENEFITS AT RETIREMENT**

***Optional Benefit Forms.*** Retiring members may elect to have retirement benefits paid in a partial lump sum, subject to any rules adopted by the Board; monthly annuity payments (with joint and survivor options) similar to those offered under the defined benefit portion of the Combined Plan; periodic payments over a period certain; periodic payments of a specific monthly amount; payments with a deferred start date; or a combination of these options.

## **MEMBER-DIRECTED PLAN**

---

### **REFUNDS AND VESTING.**

A participant shall at all times be 100% vested in the Participant Contribution Account, Miscellaneous Contribution Account, and the Rollover Account. A participant shall vest in the Employer Contribution Account according to the Participant's attained years of participation in the Plan as follows:

One year of participation	20%
Two years of participation	40%
Three years of participation	60%
Four years of participation	80%
Five years of participation	100%

In the event a member leaves service prior to retirement, the member may elect to receive a refund of their Participant Contribution Account, Rollover Account, and Miscellaneous Account and any vested amounts in the Employer Contribution Account (as described above).

### **SUPPLEMENTAL BENEFITS**

***Health Care Coverage.*** A portion of the employer contribution for Member-Directed participants is credited to a Retiree Medical Account (RMA). Amounts contributed to the RMA may be used after separation from service and a refund or retirement distribution is made to pay qualified health, dental and vision care expenses. Beginning January 1, 2009, members vest in their RMA based on their attained years of participation in the Plan as follows:

Less than 1 year	0%
1 year	20%
2 years	40%
3 years	60%
4 years	80%
5 years	100%

**SAMPLE BENEFIT COMPUTATION – TRADITIONAL PLAN**  
**STATE OR LOCAL MEMBER (TRANSITION GROUP A) - NORMAL RETIREMENT**  
**RETIRING DECEMBER 31, 2012**  
**UNDER BENEFIT PROVISIONS EVALUATED**

---

**Data:**

A.	\$32,000	Final Average Earnings
B.	33	Years of Credited Service
C.	59	Age of Retiree
D.	56	Age of Spouse
E.	100%	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)

---

**Computations:**

F.	Formula Benefit: $(0.022 \times 30 \text{ years} + 0.025 \times 3 \text{ years}) \times \$32,000 =$	\$ 23,520
G.	Reduction for Line E Election: $\# (1 - 0.84810) \times (F) =$	<u>3,573</u>
H.	Benefit Payable to Retiree while Spouse is Alive: $(F) - (G) =$	19,947
I.	Benefit Payable to Spouse after Retiree's Death	19,947
J.	Benefit Payable to Retiree after Spouse's Death	23,520

---

**Projected Benefits:\***

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2013	\$ 19,947	\$ 19,947	\$ 23,520
2014	20,545	20,545	24,226
2015	21,144	21,144	24,931
2016	21,742	21,742	25,637
2017	22,341	22,341	26,342
2018	22,939	22,939	27,048
2019	23,537	23,537	27,754
2020	24,136	24,136	28,459
2021	24,734	24,734	29,165
2022	25,333	25,333	29,870

\* Assumes the annual percentage change in the Consumer Price Index (CPI) is 3% or greater in all future years.  
# Based on conversion factors for optional forms of payment in effect January 1, 2013.

**SAMPLE BENEFIT COMPUTATION – TRADITIONAL PLAN  
STATE OR LOCAL MEMBER (TRANSITION GROUP A) - EARLY RETIREMENT  
RETIRING DECEMBER 31, 2012  
UNDER BENEFIT PROVISIONS EVALUATED**

---

**Data:**

A.	\$32,000	Final Average Earnings
B.	26	Years of Credited Service
C.	59	Age of Retiree
D.	56	Age of Spouse
E.	100%	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)

---

**Computations:**

F.	Formula Benefit: $0.022 \times 26 \text{ years} \times \$32,000 =$	\$ 18,304
G.	Adjustment Factor for Early Retirement (from schedule)	80%
H.	Adjusted Benefit: (F) x (G) =	14,643
I.	Reduction for Line E Election: $\# (1 - 0.84810) \times (H) =$	<u>2,224</u>
J.	Benefit Payable to Retiree while Spouse is Alive: (H) - (I)	12,419
K.	Benefit Payable to Spouse after Retiree's Death	12,419
L.	Benefit Payable to Retiree after Spouse's Death	14,643

---

**Projected Benefits:\***

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2013	\$ 12,419	\$ 12,419	\$ 14,643
2014	12,792	12,792	15,082
2015	13,164	13,164	15,522
2016	13,537	13,537	15,961
2017	13,910	13,910	16,400
2018	14,282	14,282	16,840
2019	14,655	14,655	17,279
2020	15,027	15,027	17,718
2021	15,400	15,400	18,158
2022	15,772	15,772	18,597

\* Assumes the annual percentage change in the Consumer Price Index (CPI) is 3% or greater in all future years.  
# Based on conversion factors for optional forms of payment in effect January 1, 2013.

**SAMPLE BENEFIT COMPUTATION – TRADITIONAL PLAN  
SECTION 145.33 (B)(2)(b) PUBLIC SAFETY  
MEMBER (TRANSITION GROUP A) - NORMAL RETIREMENT  
RETIRING DECEMBER 31, 2012  
UNDER BENEFIT PROVISIONS EVALUATED**

---

**Data:**

A.	<u>    \$38,000    </u>	Final Average Earnings
B.	<u>        28        </u>	Years of Credited Service
C.	<u>        49        </u>	Age of Retiree
D.	<u>        46        </u>	Age of Spouse
E.	<u>      100%      </u>	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)

---

**Computations:**

F.	Formula Benefit: $(0.025 \times 25 \text{ years} + 0.021 \times 3 \text{ years}) \times \$38,000 \times 80\% =$	\$ 20,915
G.	Reduction for Line E Election: $\# (1 - 0.91118) \times (F) =$	<u>1,858</u>
H.	Benefit Payable to Retiree while Spouse is Alive: $(F) - (G) =$	19,057
I.	Benefit Payable to Spouse after Retiree's Death	19,057
J.	Benefit Payable to Retiree after Spouse's Death	20,915

---

**Projected Benefits:\***

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2013	\$ 19,057	\$ 19,057	\$ 20,915
2014	19,629	19,629	21,542
2015	20,200	20,200	22,170
2016	20,772	20,772	22,797
2017	21,344	21,344	23,425
2018	21,916	21,916	24,052
2019	22,487	22,487	24,680
2020	23,059	23,059	25,307
2021	23,631	23,631	25,935
2022	24,202	24,202	26,562

\* Assumes the annual percentage change in the Consumer Price Index (CPI) is 3% or greater in all future years.  
# Based on conversion factors for optional forms of payment in effect January 1, 2013.

**SAMPLE BENEFIT COMPUTATION – TRADITIONAL PLAN  
SECTION 145.33 (B)(2)(a) LAW ENFORCEMENT  
MEMBER (TRANSITION GROUP A) - NORMAL RETIREMENT  
RETIRING DECEMBER 31, 2012  
UNDER BENEFIT PROVISIONS EVALUATED**

---

**Data:**

A.	<u>\$38,000</u>	Final Average Earnings
B.	<u>28</u>	Years of Credited Service
C.	<u>49</u>	Age of Retiree
D.	<u>46</u>	Age of Spouse
E.	<u>100%</u>	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)

---

**Computations:**

F.	Formula Benefit: $(0.025 \times 25 \text{ years} + 0.021 \times 3 \text{ years}) \times \$38,000 =$	\$ 26,144
G.	Reduction for Line E Election: $\# (1 - 0.91118) \times (F) =$	<u>2,322</u>
H.	Benefit Payable to Retiree while Spouse is Alive: $(F) - (G) =$	23,822
I.	Benefit Payable to Spouse after Retiree's Death	23,822
J.	Benefit Payable to Retiree after Spouse's Death	26,144

---

**Projected Benefits:\***

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2013	\$ 23,822	\$ 23,822	\$ 26,144
2014	24,537	24,537	26,928
2015	25,251	25,251	27,713
2016	25,966	25,966	28,497
2017	26,681	26,681	29,281
2018	27,395	27,395	30,066
2019	28,110	28,110	30,850
2020	28,825	28,825	31,634
2021	29,539	29,539	32,419
2022	30,254	30,254	33,203

\* Assumes the annual percentage change in the Consumer Price Index (CPI) is 3% or greater in all future years.

# Based on conversion factors for optional forms of payment in effect January 1, 2013.

**SAMPLE BENEFIT COMPUTATION – TRADITIONAL PLAN  
STATE OR LOCAL MEMBER (TRANSITION GROUP A) – TERMINATION BENEFIT  
RETIRING DECEMBER 31, 2012  
UNDER BENEFIT PROVISIONS EVALUATED**

---

**Data:**

A.	\$32,000	Final Average Earnings
B.	15	Years of Credited Service
C.	45	Age of Member
D.	42	Age of Spouse
E.	60:57	Ages at Which Benefits are Payable
F.	100%	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)
G.	\$44,000	Accumulated Contributions with Interest at Termination Date

---

**Computations:**

H.	Formula Benefit: $(0.022 \times 15 \text{ years} + 0.025 \times 0 \text{ years}) \times \$32,000 =$	\$ 10,560
I.	Adjustment Factor for Early Retirement (from schedule)	85%
J.	Adjusted Benefit: $(H) \times (I) =$	8,976
K.	Reduction for Line F Election: $\# (1 - 0.84024) \times (J) =$	<u>1,434</u>
L.	Benefit Payable to Retiree while Spouse is Alive: $(J) - (K) =$	7,542
M.	Benefit Payable to Spouse after Retiree's Death	7,542
N.	Benefit Payable to Retiree after Spouse's Death	8,976
O.	In lieu of a lifetime benefit, terminnee may elect to receive a refund of accumulated contributions with interest plus an additional 67% of eligible accumulated contributions because terminnee had more than 10 years of service.	73,480

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**Projected Benefits:\***

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2013	\$ 7,542	\$ 7,542	\$ 8,976
2014	7,768	7,768	9,245
2015	7,995	7,995	9,515
2016	8,221	8,221	9,784
2017	8,447	8,447	10,053
2018	8,673	8,673	10,322
2019	8,900	8,900	10,592
2020	9,126	9,126	10,861
2021	9,352	9,352	11,130
2022	9,578	9,578	11,400

\* Assumes the annual percentage change in the Consumer Price Index (CPI) is 3% or greater in all future years.

# Based on conversion factors for optional forms of payment in effect January 1, 2013.

**SAMPLE BENEFIT COMPUTATION – TRADITIONAL PLAN**  
**SECTION 145.33 (B)(2)(a) PUBLIC SAFETY/LAW ENFORCEMENT MEMBER**  
**(TRANSITION GROUP A) – TERMINATION BENEFIT**  
**RETIRING DECEMBER 31, 2012**  
**UNDER BENEFIT PROVISIONS EVALUATED**

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**Data:**

A.	\$38,000	Final Average Earnings
B.	15	Years of Credited Service
C.	37	Age of Retiree
D.	34	Age of Spouse
E.	52:49	Ages at Which Benefits are Payable
F.	100%	Percentage of Pension to Continue to Spouse after retiree's death (Retiree makes the choice of 100% Joint and Survivor with Pop-Up)
G.	\$46,000	Accumulated Contributions at Termination Date

---

**Computations:**

H.	Formula Benefit: $(0.015 \times 15 \text{ years}) \times \$38,000 =$	\$ 8,550
I.	Reduction for Line F Election: # $(1 - 0.89538) \times (H) =$	<u>895</u>
J.	Benefit Payable to Retiree while Spouse is Alive: $(H) - (I) =$	7,655
K.	Benefit Payable to Spouse after Retiree's Death	7,655
L.	Benefit Payable to Retiree after Spouse's Death	8,550
M.	In lieu of a lifetime benefit, terminatee may elect to receive a refund of accumulated contributions with interest plus an additional 67% of eligible accumulated contributions because terminatee had more than 10 years of service.	76,820

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**Projected Benefits:\***

Year Ended December 31,	Retiree's Benefit (Both Alive)	Spouse's Benefit (After Retiree's Death)	Retiree's Benefit (After Spouse's Death)
2013	\$ 7,655	\$ 7,655	\$ 8,550
2014	7,885	7,885	8,807
2015	8,114	8,114	9,063
2016	8,344	8,344	9,320
2017	8,574	8,574	9,576
2018	8,803	8,803	9,833
2019	9,033	9,033	10,089
2020	9,263	9,263	10,346
2021	9,492	9,492	10,602
2022	9,722	9,722	10,859

\* Assumes the annual percentage change in the Consumer Price Index (CPI) is 3% or greater in all future years.  
# Based on conversion factors for optional forms of payment in effect January 1, 2013.

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**SECTION IV**

RECOMMENDATIONS FOR RESERVE TRANSFERS

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## **DECEMBER 31, 2012 RETIRED LIFE VALUATION RESERVE TRANSFERS**

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Reserve transfers from the Employer Accumulation Fund to the A & PR Fund and/or Survivor Benefit Funds are recommended in the following instances.

- Whenever the December 31 valuation shows unfunded accrued liabilities or assets in excess of computed liabilities in any of the retired life funds.
- To adjust retired life reserves for the payment of health insurance premiums and Medicare reimbursements for the previous 12 month period if this has not already been done.
- To cover the cost of ad-hoc postretirement benefit increases.
- To adjust retired life reserves for any changes in computed liabilities resulting from assumption changes.

By making these annual adjustments in addition to the regular transfers when allowances are added to the rolls, the ratio of assets to liabilities for retired members and beneficiaries will stay at 100%. Year to year changes in this ratio before recommended transfers will normally be isolated to mortality experience within the retired life group.

In 1992, OPERS began making interim benefit payments for certain retirements to shorten the delay between the retirement effective date and receipt of the first monthly check. However, reserve transfers are not made until benefit amounts are final. Transfers for these cases have been accrued based upon supplemental information supplied by OPERS staff and are shown on the following page. The accruals, when added to other assets, are intended to put retired life reserves in the same position they would have been in if reserve transfers for the interim benefit cases had been coincident with benefit commencement.

It is recommended that the transfers shown on the following page be made from the Employer Accumulation Fund to the Annuity & Pension Reserve Fund and Survivor Benefit Funds as indicated. The Accrued Transfers is an estimate of pending future transfers for interim cases, and does not require a year end transfer. Any accrued transfers that have been made prior to OPERS' extract date and hence are not included in the "Accrued Transfers" column on pages IV-2 through IV-5 should be netted off the "Other" column on pages IV-2 through IV-5.

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**TRADITIONAL PLAN**  
**RESERVE TRANSFERS AFFECTING THE EMPLOYER ACCUMULATION FUND**  
**DECEMBER 31, 2012**

	Assets Before Transfers	Transfers		Assets After Transfers	Liabilities	Ratio
		Accrued	Other			
<b>State</b>						
A&PR FUND						
SR	\$16,462,443,956	\$196,890,765	\$ 92,251,674	\$16,751,586,395	\$16,751,586,395	
MP	38,392,118	83,712	434,126	38,909,956	38,909,956	
AA	244,000	0	6,698	250,698	250,698	
JR	154,134	0	(154,134)	0	0	
CR	74,573,081	0	13,158,268	87,731,349	87,731,349	
DR	2,189,017,296	11,646,471	(3,363,036)	2,197,300,731	2,197,300,731	
BD	454,908,519	12,228,365	622,132	467,759,016	467,759,016	
TOTAL A&PR	19,219,733,104	220,849,313	102,955,728	19,543,538,145	19,543,538,145	100.0%
SBF						
AA	0	0	0	0	0	
S-1	114,451,679	2,488,010	(911,850)	116,027,839	116,027,839	
S-2	479,452,957	3,043,681	(1,887,451)	480,609,187	480,609,187	
TOTAL SBF	593,904,636	5,531,691	(2,799,301)	596,637,026	596,637,026	100.0%
<b>TOTAL STATE</b>	<b>\$19,813,637,740</b>	<b>\$226,381,004</b>	<b>\$100,156,427</b>	<b>\$20,140,175,171</b>	<b>\$20,140,175,171</b>	<b>100.0%</b>
<b>Local</b>						
A&PR FUND						
SR	\$22,539,570,395	\$269,188,708	\$122,474,571	\$22,931,233,674	\$22,931,233,674	
MP	91,346,031	24,043	1,692,872	93,062,946	93,062,946	
AA	50,815,990	802,746	522,625	52,141,361	52,141,361	
JR	223,739	0	(223,739)	0	0	
CR	98,421,328	0	13,483,322	111,904,650	111,904,650	
DR	2,752,693,634	18,233,826	(2,405,647)	2,768,521,813	2,768,521,813	
BD	557,319,562	16,767,061	4,633,356	578,719,979	578,719,979	
TOTAL A&PR	26,090,390,679	305,016,384	140,177,360	26,535,584,423	26,535,584,423	100.0%
SBF						
AA	0	0	0	0	0	
S-1	171,300,844	1,738,985	(1,820,856)	171,218,973	171,218,973	
S-2	802,469,541	2,245,739	(3,614,909)	801,100,371	801,100,371	
TOTAL SBF	973,770,385	3,984,724	(5,435,765)	972,319,344	972,319,344	100.0%
<b>TOTAL LOCAL</b>	<b>\$27,064,161,064</b>	<b>\$309,001,108</b>	<b>\$134,741,595</b>	<b>\$27,507,903,767</b>	<b>\$27,507,903,767</b>	<b>100.0%</b>

**TRADITIONAL PLAN  
RESERVE TRANSFERS AFFECTING THE EMPLOYER ACCUMULATION FUND  
DECEMBER 31, 2012**

	Assets Before Transfers	Transfers		Assets After Transfers	Liabilities	Ratio
		Accrued	Other			
<b>Public Safety</b>						
A&PR FUND						
SR	\$ 8,041,893	\$ 0	\$(5,217)	\$8,036,676	\$8,036,676	
MP	0	0	0	0	0	
AA	0	0	0	0	0	
JR	0	0	0	0	0	
CR	0	0	0	0	0	
DR	13,413,716	0	\$(49,118)	13,364,598	13,364,598	
BD	2,255,586	0	128,987	2,384,573	2,384,573	
TOTAL A&PR	23,711,195	0	74,652	23,785,847	23,785,847	100.0%
SBF						
AA	0	0	0	0	0	
S-1	0	0	0	0	0	
S-2	17,140,929	0	549,914	17,690,843	17,690,843	
TOTAL SBF	17,140,929	0	549,914	17,690,843	17,690,843	100.0%
<b>TOTAL PUBLIC SAFETY</b>	<b>\$40,852,124</b>	<b>\$0</b>	<b>\$624,566</b>	<b>\$41,476,690</b>	<b>\$41,476,690</b>	<b>100.0%</b>
<b>Law Enforcement</b>						
A&PR FUND						
SR	\$1,250,813,339	\$24,278,706	\$2,386,898	\$1,277,478,943	\$1,277,478,943	
MP	\$(32,947)	0	32,947	0	0	
AA	0	0	0	0	0	
JR	0	0	0	0	0	
CR	361,119	0	12,630	373,749	373,749	
DR	550,644,276	3,942,038	5,210,480	559,796,794	559,796,794	
BD	91,768,504	1,767,290	3,881,883	97,417,677	97,417,677	
TOTAL A&PR	1,893,554,291	29,988,034	11,524,838	1,935,067,163	1,935,067,163	100.0%
SBF						
AA	0	0	0	0	0	
S-1	12,287,864	181,961	\$(105,072)	12,364,753	12,364,753	
S-2	30,108,383	35,154	143,267	30,286,804	30,286,804	
TOTAL SBF	42,396,247	217,115	38,195	42,651,557	42,651,557	100.0%
<b>TOTAL LAW ENFORCEMENT</b>	<b>\$ 1,935,950,538</b>	<b>\$ 30,205,149</b>	<b>\$ 11,563,033</b>	<b>\$ 1,977,718,720</b>	<b>\$ 1,977,718,720</b>	<b>100.0%</b>
<b>GRAND TOTAL</b>	<b>\$48,854,601,466</b>	<b>\$565,587,261</b>	<b>\$247,085,621</b>	<b>\$49,667,274,348</b>	<b>\$49,667,274,348</b>	<b>100.0%</b>

**COMBINED PLAN  
RESERVE TRANSFERS AFFECTING THE EMPLOYER ACCUMULATION FUND  
DECEMBER 31, 2012**

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	Assets Before Transfers	Transfers		Assets After Transfers	Liabilities	Ratio
		Accrued	Other			
<b>State</b>						
A&PR FUND						
CA	\$ 212,204	\$0	\$ (3,238)	\$ 208,966	\$ 208,966	
CB	506,875	21,649	12,764	541,288	541,288	
TOTAL A&PR	719,079	21,649	9,526	750,254	750,254	
<b>TOTAL STATE</b>	<b>\$719,079</b>	<b>\$21,649</b>	<b>\$9,526</b>	<b>\$750,254</b>	<b>\$750,254</b>	
<b>Local</b>						
A&PR FUND						
CA	\$1,071,992	\$ 33,901	\$5,237	\$1,111,130	\$1,111,130	
CB	1,323,810	46,395	98,127	1,468,332	1,468,332	
TOTAL A&PR	2,395,802	80,296	103,364	2,579,462	2,579,462	100.0%
<b>TOTAL LOCAL</b>	<b>\$2,395,802</b>	<b>\$80,296</b>	<b>\$103,364</b>	<b>\$2,579,462</b>	<b>\$2,579,462</b>	<b>100.0%</b>
<b>GRAND TOTAL</b>	<b>\$3,114,881</b>	<b>\$101,945</b>	<b>\$112,890</b>	<b>\$3,329,716</b>	<b>\$3,329,716</b>	<b>100.0%</b>

**MEMBER DIRECTED PLAN**  
**RESERVE TRANSFERS AFFECTING THE EMPLOYER ACCUMULATION FUND**  
**DECEMBER 31, 2012**

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	Assets Before Transfers	Transfers		Assets After Transfers	Liabilities	Ratio
		Accrued	Other			
<b>State</b>						
A&PR FUND						
MD	\$ 540,014	\$ 198,554	\$ (50,801)	\$ 687,767	\$ 687,767	
TOTAL A&PR	540,014	198,554	(50,801)	687,767	687,767	
<b>TOTAL STATE</b>	<b>\$ 540,014</b>	<b>\$ 198,554</b>	<b>\$ (50,801)</b>	<b>\$ 687,767</b>	<b>\$ 687,767</b>	
<b>Local</b>						
A&PR FUND						
MD	\$1,864,718	\$ 73,666	\$ 39,401	\$1,977,785	\$1,977,785	
TOTAL A&PR	1,864,718	73,666	39,401	1,977,785	1,977,785	100.0%
<b>TOTAL LOCAL</b>	<b>\$1,864,718</b>	<b>\$ 73,666</b>	<b>\$ 39,401</b>	<b>\$1,977,785</b>	<b>\$1,977,785</b>	<b>100.0%</b>
<b>GRAND TOTAL</b>	<b>\$2,404,732</b>	<b>\$ 272,220</b>	<b>\$(11,400)</b>	<b>\$2,665,552</b>	<b>\$2,665,552</b>	<b>100.0%</b>

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**SECTION V**  
STATE DIVISION

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## STATE DIVISION

Data on active, inactive, retired and money purchase members that was used in the valuation is tabulated briefly below.

### *Defined Benefit Active Members in Valuation December 31, 2012*

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
<b>Traditional Plan</b>					
Men	51,762	\$2,142,021,602	\$41,382	40.5 yrs.	9.5 yrs.
Women	63,133	2,415,464,108	38,260	40.3	9.0
Traditional Plan Total	114,895	\$4,557,485,710	39,667	40.4 yrs.	9.2 yrs.
<b>Combined Plan</b>					
Men	1,030	\$54,030,583	\$52,457	41.7 yrs.	6.1 yrs.
Women	1,505	78,385,062	52,083	41.6	5.8
Combined Plan Total	2,535	132,415,645	52,235	41.6 yrs.	5.9 yrs.
<b>Grand Total</b>	<b>117,430</b>	<b>\$4,689,901,355</b>	<b>\$39,938</b>	<b>40.4 yrs.</b>	<b>9.1 yrs.</b>

Also included in the valuation were 193,145 inactive members and 4,450 members active in the money purchase plan.

### *Retired Members in Valuation December 31, 2012*

Fund/Type of Allowance	Number	Current Monthly Benefits	Actuarial Liabilities
<b>Traditional Plan</b>			
A & PR Fund			
Superannuation Retirement	53,758	\$ 127,200,530	\$ 16,839,568,442
Disability Retirement	8,719	19,896,673	2,665,059,747
Money Purchase	638	321,399	38,909,956
Total A & PR Fund	63,115	147,418,602	19,543,538,145
Total SBF	4,716	5,208,056	596,637,026
Traditional Plan Total	67,831	\$ 152,626,658	\$ 20,140,175,171
<b>Combined Plan</b>			
A & PR Fund			
CMDB	15	\$ 3,732	\$ 541,288
CMDC	6	1,497	208,966
Total A & PR Fund	21	5,229	750,254
Combined Plan Total	21	\$ 5,229	\$ 750,254
<b>Member Directed Plan</b>			
A & PR Fund	13	\$ 4,852	\$ 687,767
Member Directed Plan Total	13	4,852	687,767
<b>Grand Total</b>	<b>67,865</b>	<b>\$ 152,636,739</b>	<b>\$ 20,141,613,192</b>

**STATE DIVISION  
EMPLOYER CONTRIBUTIONS TO SUPPORT  
DEFINED BENEFIT RETIREMENT ALLOWANCES  
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL**

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Valuation Date December 31	2012			2012	2011
Contributions for	2015			2015	2014
<b>Normal Cost</b>	<u>Traditional Plan</u>	<u>Combined Plan</u>	<u>Traditional and Combined Plans</u>	<u>Pre-APD* Traditional and Combined Plans</u>	<u>Traditional and Combined Plans</u>
Age and Service Allowances	7.15 %	4.32 %	7.07 %	8.59 %	8.55 %
Disability Allowances	2.05 %	1.89 %	2.05 %	2.58 %	2.58 %
Survivor's Benefits	0.40 %	0.35 %	0.40 %	0.38 %	0.38 %
Separation Benefits	3.71 %	0.98 %	3.63 %	3.86 %	3.86 %
Total Normal Cost	13.31 %	7.54 %	13.15 %	15.41 %	15.37 %
(Member Contributions)	10.00 %	0.00 %	9.66 %	10.00 %	10.00 %
Employer Normal Cost	3.31 %	7.54 %	3.49 %	5.41 %	5.37 %
<b>Unfunded Actuarial Accrued Liabilities</b>					
Total Available Contribution	7.69 %	3.46 %	7.51 %	8.59 %	8.63 %
Amortization Years	53	1	51	55	38
<b>Total Pension Employer Contribution Rate</b>	<b>11.00 %</b>	<b>11.00 %</b>	<b>11.00 %</b>	<b>14.00 %</b>	<b>14.00 %</b>

\* Alternate Plan Design.

The term "Amortization Years" refers to the period sufficient to produce the Total Employer Contribution Rate for retirement allowances and survivor benefits and incorporates all scheduled employer and member contribution rate increases and scheduled employer rate reallocations between the pension and retiree health programs.

**STATE DIVISION  
COMPARATIVE STATEMENT**

Valuation Date December 31	Contribution Rate Effective January 1	Defined Benefit Active Members in Valuation				Computed Employer Contributions as % of Payroll				
		No.	Annual Payroll			Normal Cost	Unfunded Accrued Liability	Pension Total	Retiree Health	Grand Total
			Total	Average	Increase					
1998	2001	112,323	(\$Millions) \$ 3,500	\$ 31,159	4.4 %	6.21 %	2.80 %	9.01 %	4.30 %	13.31 %
1999#	2002	112,761	3,592	31,851	2.2 %	7.68 %	0.63 %	8.31 %	5.00 %	13.31 %
2000	2003	113,099	3,868	34,201	7.4 %	7.69 %	0.62 %	8.31 %	5.00 %	13.31 %
2001@	2004	109,219	3,996	36,589	7.0 %	6.17 %	3.14 %	9.31 %	4.00 %	13.31 %
2002	2005	110,017	4,129	37,531	2.6 %	5.95 %	3.36 %	9.31 %	4.00 %	13.31 %
2003##	2006	108,249	4,079	37,679	0.4 %	5.70 %	3.34 %	9.04 %	4.50 %	13.54 %
2004	2007	110,207	4,165	37,794	0.3 %	5.67 %	2.60 %	8.27 %	5.50 %	13.77 %
2005@	2008	114,620	4,339	37,858	0.2 %	5.43 %	1.57 %	7.00 %	7.00 %	14.00 %
2006	2009	115,930	4,522	39,005	3.0 %	4.97 %	2.03 %	7.00 %	7.00 %	14.00 %
2007	2010	118,466	4,703	39,695	1.8 %	5.44 %	1.56 %	7.00 %	7.00 %	14.00 %
2008	2011	114,925	4,780	41,590	4.8 %	5.44 %	4.56 %	10.00 %	4.00 %	14.00 %
2009	2012	117,008	4,763	40,704	(2.1)%	5.45 %	4.55 %	10.00 %	4.00 %	14.00 %
2010@	2013	118,240	4,811	40,691	0.0 %	5.36 %	7.64 %	13.00 %	1.00 %	14.00 %
2011	2014	118,273	4,844	40,952	0.6 %	5.37 %	8.63 %	14.00 %	0.00 %	14.00 %
2012	2015	117,430	4,690	39,938	(2.5)%	5.41 %	8.59 %	14.00 %	0.00 %	14.00 %
2012#	2015	117,430	4,690	39,938	(2.5)%	3.49 %	7.51 %	11.00 %	3.00 %	14.00 %

# After benefit changes.

@ Revised actuarial assumptions.

## Combined Plan members are included beginning with the December 31, 2003 valuation.

**STATE DIVISION**  
**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES**  
**DECEMBER 31, 2012**

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Actuarial Present Value	(1) Total Actuarial Present Value	Allocation by Entry Age	
		(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
Allowances currently being paid from the Annuity & Pension Reserve Fund	\$ 19,544,976,166	\$ -	\$ 19,544,976,166
Allowances currently being paid from the Survivors Benefit Fund	596,637,026	-	596,637,026
Age and service allowances based on service rendered before and likely to be rendered after valuation date	13,642,976,138	2,629,496,302	11,013,479,836
Disability allowances likely to be paid present active members who become permanently disabled	1,731,108,055	766,639,422	964,468,633
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	441,512,094	149,228,944	292,283,150
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members	2,279,854,592	1,415,478,019	864,376,573
<b>Total</b>	<b>\$ 38,237,064,071</b>	<b>\$ 4,960,842,687</b>	<b>\$ 33,276,221,384</b>
Actuarial Value of Assets			25,410,873,182
Unfunded Actuarial Accrued Liability			<b>\$ 7,865,348,202</b>

**STATE DIVISION**  
**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES**  
**COMPARATIVE STATEMENT**  
**(\$ IN MILLIONS EXCEPT AVERAGES)**

Dec. 31	Defined Benefit Active Payroll		Active and Inactive Member Accrued Liabilities for Retirement Allowances				Unfunded /Payroll
			Computed Total	Valuation Assets	Unfunded	Amortization Years	
	Total	Average					
1998	3,500	\$31,159	\$ 9,223	\$ 9,666	\$ (443)	-	-
1999#	3,592	31,851	10,298	10,474	(176)	-	-
2000	3,868	34,201	11,273	11,558	(285)	-	-
2001@	3,996	36,589	11,352	11,863	(511)	-	-
2002	4,129	37,531	11,822	8,965	2,857	38	0.69
2003##	4,079	37,679	12,230	9,030	3,200	43	0.78
2004	4,165	37,794	12,441	9,664	2,777	34	0.67
2005@	4,339	37,858	13,326	10,296	3,030	39	0.70
2006	4,522	39,005	14,006	12,131	1,875	35	0.41
2007	4,703	39,695	14,526	13,442	1,084	20	0.23
2008	4,780	41,590	14,872	7,488	7,384	N/A	1.54
2009	4,763	40,704	14,843	6,648	8,195	N/A	1.71
2010@	4,811	40,691	14,903	7,113	7,790	48	1.62
2011	4,844	40,952	14,754	6,616	8,138	37	1.68
2012	4,690	39,938	14,358	5,270	9,088	54	1.94
2012#	4,690	39,938	13,135	5,270	7,865	37	1.68

# After benefit changes.

@ Revised actuarial assumptions.

## Combined Plan members are included beginning with the December 31, 2003 valuation.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll (“UNFUNDED/PAYROLL” above) is significant. Unfunded actuarial accrued liabilities represent plan debt, while active member payroll represents the plan’s capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength, and vice-versa.

**STATE DIVISION**  
**MALE ACTIVE MEMBERS IN DEFINED BENEFIT VALUATION**  
**DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19	749							749
Tot. Pay	\$4,799,957							\$4,799,957
Avg. Pay	\$6,408							\$6,408
20-24	8,697	32						8,729
Tot. Pay	\$82,456,466	\$604,841						\$83,061,307
Avg. Pay	\$9,481	\$18,901						\$9,516
25-29	4,969	792	21					5,782
Tot. Pay	\$121,157,610	\$32,377,407	\$844,462					\$154,379,479
Avg. Pay	\$24,383	\$40,881	\$40,212					\$26,700
30-34	2,686	1,713	518	6				4,923
Tot. Pay	\$84,353,934	\$80,024,591	\$25,956,269	\$316,246				\$190,651,040
Avg. Pay	\$31,405	\$46,716	\$50,109	\$52,708				\$38,727
35-39	1,662	1,222	1,229	353	6			4,472
Tot. Pay	\$57,701,731	\$61,041,089	\$68,224,504	\$19,554,029	\$376,944			\$206,898,297
Avg. Pay	\$34,718	\$49,952	\$55,512	\$55,394	\$62,824			\$46,265
40-44	1,518	1,081	1,162	1,347	470	10		5,588
Tot. Pay	\$55,472,035	\$56,314,594	\$64,602,008	\$81,447,223	\$30,981,673	\$609,122		\$289,426,655
Avg. Pay	\$36,543	\$52,095	\$55,596	\$60,466	\$65,918	\$60,912		\$51,794
45-49	1,259	951	912	1,107	1,382	692	12	6,315
Tot. Pay	\$45,627,795	\$49,338,256	\$50,825,790	\$67,231,687	\$91,783,926	\$44,992,545	\$868,274	\$350,668,273
Avg. Pay	\$36,241	\$51,880	\$55,730	\$60,733	\$66,414	\$65,018	\$72,356	\$55,529
50-54	991	810	870	935	1,152	1,405	322	6,485
Tot. Pay	\$34,754,696	\$42,174,381	\$48,614,607	\$55,309,207	\$75,814,025	\$94,655,243	\$21,482,157	\$372,804,316
Avg. Pay	\$35,070	\$52,067	\$55,879	\$59,154	\$65,811	\$67,370	\$66,715	\$57,487
55-59	809	708	715	803	827	927	443	5,232
Tot. Pay	\$27,968,149	\$37,048,680	\$39,491,676	\$48,716,792	\$52,260,074	\$60,952,279	\$32,528,018	\$298,965,668
Avg. Pay	\$34,571	\$52,329	\$55,233	\$60,668	\$63,192	\$65,752	\$73,427	\$57,142
60-64	496	426	439	453	483	472	333	3,102
Tot. Pay	\$15,458,411	\$22,066,091	\$24,945,969	\$27,411,762	\$30,885,546	\$31,161,186	\$26,242,945	\$178,171,910
Avg. Pay	\$31,166	\$51,798	\$56,825	\$60,512	\$63,945	\$66,019	\$78,808	\$57,438
65-69	222	128	139	130	122	127	108	976
Tot. Pay	\$4,626,341	\$5,534,819	\$7,347,034	\$8,054,878	\$8,402,456	\$9,146,098	\$9,146,041	\$52,257,667
Avg. Pay	\$20,839	\$43,241	\$52,856	\$61,961	\$68,873	\$72,017	\$84,686	\$53,543
70 & Over	193	69	58	37	26	22	34	439
Tot. Pay	\$2,481,668	\$1,528,593	\$2,292,578	\$1,774,183	\$1,682,486	\$1,476,462	\$2,731,646	\$13,967,616
Avg. Pay	\$12,858	\$22,154	\$39,527	\$47,951	\$64,711	\$67,112	\$80,343	\$31,817
<b>Totals</b>	24,251	7,932	6,063	5,171	4,468	3,655	1,252	52,792
<b>Tot. Pay</b>	\$536,858,793	\$388,053,342	\$333,144,897	\$309,816,007	\$292,187,130	\$242,992,935	\$92,999,081	\$2,196,052,185
<b>Avg. Pay</b>	\$22,138	\$48,923	\$54,947	\$59,914	\$65,396	\$66,482	\$74,280	\$41,598

**STATE DIVISION**  
**FEMALE ACTIVE MEMBERS IN DEFINED BENEFIT VALUATION**  
**DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19	988							988
Tot. Pay	\$4,976,683							\$4,976,683
Avg. Pay	\$5,037							\$5,037
20-24	10,885	39						10,924
Tot. Pay	\$98,384,377	\$711,635						\$99,096,012
Avg. Pay	\$9,039	\$18,247						\$9,071
25-29	5,684	879	14					6,577
Tot. Pay	\$149,802,004	\$36,433,744	\$543,107					\$186,778,855
Avg. Pay	\$26,355	\$41,449	\$38,793					\$28,399
30-34	4,476	2,110	595	18				7,199
Tot. Pay	\$117,887,490	\$98,301,601	\$28,553,640	\$959,862				\$245,702,593
Avg. Pay	\$26,338	\$46,588	\$47,989	\$53,326				\$34,130
35-39	2,139	1,515	1,327	386	14			5,381
Tot. Pay	\$76,307,425	\$74,749,218	\$70,351,543	\$20,911,645	\$708,754			\$243,028,585
Avg. Pay	\$35,674	\$49,339	\$53,015	\$54,175	\$50,625			\$45,164
40-44	1,823	1,424	1,234	1,250	495	24		6,250
Tot. Pay	\$67,348,822	\$70,848,163	\$65,529,976	\$72,759,917	\$29,998,811	\$1,233,341		\$307,719,030
Avg. Pay	\$36,944	\$49,753	\$53,104	\$58,208	\$60,604	\$51,389		\$49,235
45-49	1,596	1,323	1,182	1,145	1,291	759	19	7,315
Tot. Pay	\$58,394,951	\$66,064,875	\$59,635,947	\$62,928,268	\$80,595,071	\$46,889,970	\$1,209,626	\$375,718,708
Avg. Pay	\$36,588	\$49,936	\$50,453	\$54,959	\$62,428	\$61,779	\$63,665	\$51,363
50-54	1,471	1,293	1,235	1,104	1,282	1,367	333	8,085
Tot. Pay	\$54,280,446	\$61,222,454	\$63,168,855	\$59,779,800	\$74,939,969	\$88,069,349	\$20,094,430	\$421,555,303
Avg. Pay	\$36,900	\$47,349	\$51,149	\$54,148	\$58,456	\$64,425	\$60,344	\$52,140
55-59	980	1,046	1,108	1,008	1,144	932	438	6,656
Tot. Pay	\$35,144,337	\$50,540,909	\$54,872,599	\$53,224,198	\$65,721,839	\$57,669,386	\$29,075,239	\$346,248,507
Avg. Pay	\$35,862	\$48,318	\$49,524	\$52,802	\$57,449	\$61,877	\$66,382	\$52,021
60-64	479	516	687	600	718	517	268	3,785
Tot. Pay	\$16,858,384	\$24,580,447	\$35,402,998	\$31,430,109	\$41,219,113	\$29,788,210	\$17,589,975	\$196,869,236
Avg. Pay	\$35,195	\$47,637	\$51,533	\$52,384	\$57,408	\$57,617	\$65,634	\$52,013
65-69	108	174	195	156	173	177	100	1,083
Tot. Pay	\$2,334,531	\$6,976,913	\$8,948,007	\$7,951,859	\$9,521,810	\$9,578,356	\$5,615,504	\$50,926,980
Avg. Pay	\$21,616	\$40,097	\$45,887	\$50,973	\$55,039	\$54,115	\$56,155	\$47,024
70 & Over	86	50	60	45	49	50	55	395
Tot. Pay	\$1,361,944	\$1,289,004	\$2,380,926	\$2,219,244	\$2,314,585	\$2,485,831	\$3,177,144	\$15,228,678
Avg. Pay	\$15,837	\$25,780	\$39,682	\$49,317	\$47,236	\$49,717	\$57,766	\$38,554
<b>Totals</b>	30,715	10,369	7,637	5,712	5,166	3,826	1,213	64,638
<b>Tot. Pay</b>	\$683,081,394	\$491,718,963	\$389,387,598	\$312,164,902	\$305,019,952	\$235,714,443	\$76,761,918	\$2,493,849,170
<b>Avg. Pay</b>	\$22,239	\$47,422	\$50,987	\$54,651	\$59,044	\$61,609	\$63,283	\$38,582

**STATE DIVISION**  
**INACTIVE MEMBERS IN DEFINED BENEFIT VALUATION**  
**DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

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Attained Ages	Years of Service to Valuation Date							Total Number
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19								
20-24	17,920							17,920
25-29	34,537	189						34,726
30-34	57,229	594	32					57,855
35-39	24,407	694	172	10				25,283
40-44	16,563	775	342	113	7			17,800
45-49	9,221	860	514	201	77	7		10,880
50-54	7,840	956	686	332	147	58	3	10,022
55-59	6,909	944	778	447	175	40	7	9,300
60-64	4,542	551	373	177	71	16	4	5,734
65-69	2,026	184	80	22	10	4	1	2,327
70 & Over	1,229	45	12	8	1	1	2	1,298
<b>Totals</b>	<b>182,423</b>	<b>5,792</b>	<b>2,989</b>	<b>1,310</b>	<b>488</b>	<b>126</b>	<b>17</b>	<b>193,145</b>

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**SECTION VI**

LOCAL GOVERNMENT DIVISION

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## LOCAL GOVERNMENT DIVISION

Data on active, inactive, retired and money purchase members that was used in the valuation is tabulated briefly below.

### *Defined Benefit Active Members in Valuation December 31, 2012*

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
<b>Traditional Plan</b>					
Men	93,924	\$3,365,866,579	\$35,836	45.1 yrs.	10.2 yrs.
Women	109,851	3,518,226,987	32,027	44.5	10.1
Traditional Plan Total	203,775	\$6,884,093,566	\$33,783	44.7 yrs.	10.2 yrs.
<b>Combined Plan</b>					
Men	1,911	\$83,393,181	\$43,639	44.7 yrs.	6.8 yrs.
Women	2,502	93,827,372	37,501	43.5	6.5
Combined Plan Total	4,413	\$177,220,553	\$40,159	44.0 yrs.	6.6 yrs.
<b>Grand Total</b>	<b>208,188</b>	<b>\$7,061,314,119</b>	<b>\$33,918</b>	<b>44.7 yrs.</b>	<b>10.1 yrs.</b>

Also included in the valuation were 269,326 inactive members and 16,805 members active in the money purchase plan.

### *Retired Members in Valuation December 31, 2012*

Fund/Type of Allowance	Number	Current Monthly Benefits	Actuarial Liabilities
<b>Traditional Plan</b>			
A & PR Fund			
Superannuation Retirement	98,839	\$175,573,752	\$23,095,279,685
Disability Retirement	12,428	25,545,785	3,347,241,792
Money Purchase	1,957	780,548	93,062,946
Total A & PR Fund	113,224	201,900,085	26,535,584,423
Total SBF	9,886	8,612,775	972,319,344
Traditional Plan Total	123,110	\$210,512,860	\$27,507,903,767
<b>Combined Plan</b>			
A & PR Fund			
CMDB	42	\$ 10,001	\$ 1,468,332
CMDC	32	7,757	1,111,130
Total A & PR Fund	74	\$ 17,758	\$ 2,579,462
Combined Plan Total	74	\$ 17,758	\$ 2,579,462
<b>Member Directed Plan</b>			
A & PR Fund	49	\$ 13,312	\$ 1,977,785
Member Directed Plan Total	49	\$ 13,312	\$ 1,977,785
<b>Grand Total</b>	<b>123,233</b>	<b>\$210,543,930</b>	<b>\$27,512,461,014</b>

**LOCAL GOVERNMENT DIVISION  
EMPLOYER CONTRIBUTIONS TO SUPPORT  
DEFINED BENEFIT RETIREMENT ALLOWANCES  
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL**

Valuation Date December 31	2012			2012	2011
Contributions for	2015			2015	2014
Normal Cost	<u>Traditional Plan</u>	<u>Combined Plan</u>	<u>Traditional and Combined Plans</u>	<u>Pre-APD* Traditional and Combined Plans</u>	<u>Traditional and Combined Plans</u>
Age and Service Allowances	7.24 %	4.47 %	7.16 %	8.82 %	8.80 %
Disability Allowances	1.63 %	1.45 %	1.62 %	2.05 %	2.06 %
Survivor's Benefits	0.47 %	0.42 %	0.47 %	0.46 %	0.45 %
Separation Benefits	3.64 %	1.07 %	3.58 %	3.83 %	3.83 %
Total Normal Cost	12.98 %	7.41 %	12.83 %	15.16 %	15.14 %
(Member Contributions)	10.00 %	0.00 %	9.70 %	10.00 %	10.00 %
Employer Normal Cost	2.98 %	7.41 %	3.13 %	5.16 %	5.14 %
<b>Unfunded Actuarial Accrued Liabilities</b>					
Total Available Contribution	8.02 %	3.59 %	7.87 %	8.84 %	8.86 %
Amortization Years	18	0	18	22	26
<b>Total Pension Employer Contribution Rate</b>	<b>11.00 %</b>	<b>11.00 %</b>	<b>11.00 %</b>	<b>14.00 %</b>	<b>14.00 %</b>

\* Alternate Plan Design.

The term "Amortization Years" refers to the period sufficient to produce the Total Employer Contribution Rate for retirement allowances and survivor benefits and incorporates all scheduled employer and member contribution rate increases and scheduled employer rate reallocations between the pension and retiree health programs.

**LOCAL GOVERNMENT DIVISION  
COMPARATIVE STATEMENT**

Valuation Date December 31	Contribution Rate Effective January 1	Defined Benefit Active Members in Valuation				Computed Employer Contributions as % of Payroll				
		No.	Annual Payroll			Normal Cost	Unfunded Accrued Liability	Pension Total	Retiree Health	Grand Total
			Total (\$Millions)	Average	Increase					
1998	2001	234,601	\$5,240	\$22,334	4.0 %	6.17 %	3.08 %	9.25 %	4.30 %	13.55 %
1999#	2002	240,005	5,586	23,276	4.2 %	7.68 %	0.87 %	8.55 %	5.00 %	13.55 %
2000	2003	245,831	5,999	24,401	4.8 %	7.68 %	0.87 %	8.55 %	5.00 %	13.55 %
2001@	2004	243,202	6,451	26,526	8.7 %	6.14 %	3.41 %	9.55 %	4.00 %	13.55 %
2002	2005	247,377	6,721	27,171	2.4 %	5.92 %	3.63 %	9.55 %	4.00 %	13.55 %
2003##	2006	237,082	6,702	28,269	4.0 %	5.66 %	3.54 %	9.20 %	4.50 %	13.70 %
2004	2007	236,907	6,896	29,110	3.0 %	5.57 %	2.78 %	8.35 %	5.50 %	13.85 %
2005@	2008	236,073	7,066	29,933	2.8 %	5.00 %	2.00 %	7.00 %	7.00 %	14.00 %
2006	2009	237,981	7,234	30,399	1.6 %	4.53 %	2.47 %	7.00 %	7.00 %	14.00 %
2007	2010	237,225	7,438	31,354	3.1 %	5.12 %	1.88 %	7.00 %	7.00 %	14.00 %
2008	2011	233,163	7,566	32,451	3.5 %	5.14 %	4.86 %	10.00 %	4.00 %	14.00 %
2009	2012	223,004	7,334	32,889	1.3 %	5.14 %	4.86 %	10.00 %	4.00 %	14.00 %
2010@	2013	215,144	7,196	33,447	1.7 %	5.12 %	7.88 %	13.00 %	1.00 %	14.00 %
2011	2014	209,452	7,115	33,968	1.6 %	5.14 %	8.86 %	14.00 %	0.00 %	14.00 %
2012	2015	208,188	7,061	33,918	(0.1)%	5.16 %	8.84 %	14.00 %	0.00 %	14.00 %
2012#	2015	208,188	7,061	33,918	(0.1)%	3.13 %	7.87 %	11.00 %	3.00 %	14.00 %

# After benefit changes.

@ Revised actuarial assumptions.

## Combined Plan members are included beginning with the December 31, 2003 valuation.

**LOCAL GOVERNMENT DIVISION**  
**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES**  
**DECEMBER 31, 2012**

<b>Actuarial Present Value</b>	<b>(1) Total Actuarial Present Value</b>	<b>Allocation by Entry Age</b>	
		<b>(2) Portion Covered By Future Normal Cost Contributions</b>	<b>(3) Actuarial Accrued Liabilities (1)-(2)</b>
Allowances currently being paid from the Annuity & Pension Reserve Fund	\$26,540,141,670	\$ -	\$26,540,141,670
Allowances currently being paid from the Survivors Benefit Fund	972,319,344	-	972,319,344
Age and service allowances based on service rendered before and likely to be rendered after valuation date	20,662,258,501	4,069,037,826	16,593,220,675
Disability allowances likely to be paid present active members who become permanently disabled	2,056,903,190	933,457,458	1,123,445,732
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	793,993,615	262,086,555	531,907,060
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members	3,489,165,456	2,154,952,703	1,334,212,753
<b>Total</b>	<b>\$54,514,781,776</b>	<b>\$7,419,534,542</b>	<b>\$47,095,247,234</b>
Actuarial Value of Assets			39,493,293,851
Unfunded Actuarial Accrued Liability			\$7,601,953,383

**LOCAL GOVERNMENT DIVISION**  
**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES**  
**COMPARATIVE STATEMENT**  
**(\$ IN MILLIONS EXCEPT AVERAGES)**

Dec. 31	Defined Benefit Active Payroll		Active and Inactive Member Accrued Liabilities for Retirement Allowances				Unfunded /Payroll
			Computed Total	Valuation Assets	Unfunded	Amortization Years	
	Total	Average					
1998	\$ 5,240	\$22,334	\$ 12,912	\$ 13,135	\$ (223)	-	-
1999#	5,586	23,276	14,643	14,498	145	2	0.03
2000	5,999	24,401	15,881	16,131	(250)	-	-
2001@	6,451	26,526	15,983	16,651	(668)	-	-
2002	6,721	27,171	16,710	12,682	4,028	25	0.60
2003##	6,702	28,269	17,645	13,148	4,497	27	0.67
2004	6,896	29,110	18,269	14,223	4,046	23	0.59
2005@	7,066	29,933	19,484	14,921	4,563	25	0.65
2006	7,234	30,399	20,147	17,523	2,624	19	0.36
2007	7,438	31,354	20,838	19,656	1,182	9	0.16
2008	7,566	32,451	21,590	11,561	10,029	N/A	1.33
2009	7,334	32,889	21,620	11,599	10,021	N/A	1.37
2010@	7,196	33,447	21,668	13,212	8,456	22	1.18
2011	7,115	33,968	21,631	11,418	10,213	25	1.44
2012	7,061	33,918	21,505	11,981	9,524	21	1.35
2012#	7,061	33,918	19,583	11,981	7,602	15	1.08

# After benefit changes.

@ Revised actuarial assumptions.

## Combined Plan members are included beginning with the December 31, 2003 valuation.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll (“UNFUNDED / PAYROLL” above) is significant. Unfunded accrued liabilities represent plan debt, while active member payroll represents the plan’s capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength, and vice-versa.

**LOCAL GOVERNMENT DIVISION**  
**MALE ACTIVE MEMBERS IN DEFINED BENEFIT VALUATION**  
**DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19	4,267							4,267
Tot. Pay	\$29,557,297							\$29,557,297
Avg. Pay	\$6,927							\$6,927
20-24	6,787	153						6,940
Tot. Pay	\$89,063,619	\$3,499,041						\$92,562,660
Avg. Pay	\$13,123	\$22,870						\$13,338
25-29	4,922	1,527	84					6,533
Tot. Pay	\$112,910,728	\$55,304,714	\$3,070,380					\$171,285,822
Avg. Pay	\$22,940	\$36,218	\$36,552					\$26,219
30-34	3,463	2,570	1,177	75				7,285
Tot. Pay	\$89,337,826	\$105,601,254	\$52,916,439	\$3,503,334				\$251,358,853
Avg. Pay	\$25,798	\$41,090	\$44,959	\$46,711				\$34,504
35-39	2,698	2,157	2,152	774	43			7,824
Tot. Pay	\$71,758,367	\$92,513,053	\$106,459,138	\$38,962,519	\$2,268,560			\$311,961,637
Avg. Pay	\$26,597	\$42,890	\$49,470	\$50,339	\$52,757			\$39,872
40-44	2,811	2,128	2,352	2,048	846	35		10,220
Tot. Pay	\$73,869,078	\$89,373,453	\$116,914,338	\$110,931,727	\$47,215,055	\$1,748,172		\$440,051,823
Avg. Pay	\$26,279	\$41,999	\$49,708	\$54,166	\$55,810	\$49,948		\$43,058
45-49	2,528	2,055	2,185	1,943	1,957	924	30	11,622
Tot. Pay	\$62,781,789	\$81,061,309	\$106,875,957	\$106,834,118	\$111,702,682	\$53,369,359	\$2,029,381	\$524,654,595
Avg. Pay	\$24,835	\$39,446	\$48,913	\$54,984	\$57,079	\$57,759	\$67,646	\$45,143
50-54	2,565	1,987	2,193	1,982	2,168	1,911	521	13,327
Tot. Pay	\$59,587,443	\$74,571,908	\$100,192,460	\$100,509,583	\$120,968,663	\$115,002,207	\$32,767,453	\$603,599,717
Avg. Pay	\$23,231	\$37,530	\$45,687	\$50,711	\$55,797	\$60,179	\$62,893	\$45,291
55-59	2,403	1,802	1,915	1,862	1,843	1,593	879	12,297
Tot. Pay	\$52,352,345	\$62,776,127	\$81,732,552	\$87,501,349	\$99,507,328	\$92,053,358	\$56,977,770	\$532,900,829
Avg. Pay	\$21,786	\$34,837	\$42,680	\$46,993	\$53,992	\$57,786	\$64,821	\$43,336
60-64	1,875	1,388	1,316	1,112	1,157	907	570	8,325
Tot. Pay	\$32,517,637	\$43,497,612	\$52,958,277	\$50,890,524	\$60,537,917	\$54,210,383	\$37,528,689	\$332,141,039
Avg. Pay	\$17,343	\$31,338	\$40,242	\$45,765	\$52,323	\$59,769	\$65,840	\$39,897
65-69	1,392	813	587	420	339	237	206	3,994
Tot. Pay	\$14,584,982	\$18,918,169	\$20,832,024	\$17,137,136	\$16,969,055	\$12,349,354	\$12,415,458	\$113,206,178
Avg. Pay	\$10,478	\$23,270	\$35,489	\$40,803	\$50,056	\$52,107	\$60,269	\$28,344
70 & Over	1,276	778	520	273	146	102	106	3,201
Tot. Pay	\$9,197,013	\$8,071,288	\$8,860,396	\$6,266,006	\$4,704,707	\$3,347,695	\$5,532,205	\$45,979,310
Avg. Pay	\$7,208	\$10,374	\$17,039	\$22,952	\$32,224	\$32,821	\$52,191	\$14,364
<b>Totals</b>	36,987	17,358	14,481	10,489	8,499	5,709	2,312	95,835
<b>Tot. Pay</b>	\$697,518,124	\$635,187,928	\$650,811,961	\$522,536,296	\$463,873,967	\$332,080,528	\$147,250,956	\$3,449,259,760
<b>Avg. Pay</b>	\$18,858	\$36,593	\$44,942	\$49,818	\$54,580	\$58,168	\$63,690	\$35,992

**LOCAL GOVERNMENT DIVISION**  
**FEMALE ACTIVE MEMBERS IN DEFINED BENEFIT VALUATION**  
**DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19	4,599							4,599
Tot. Pay	\$27,302,398							\$27,302,398
Avg. Pay	\$5,937							\$5,937
20-24	6,932	191						7,123
Tot. Pay	\$81,933,604	\$2,862,450						\$84,796,054
Avg. Pay	\$11,820	\$14,987						\$11,905
25-29	5,719	1,591	96					7,406
Tot. Pay	\$133,090,892	\$49,811,835	\$2,876,158					\$185,778,885
Avg. Pay	\$23,272	\$31,309	\$29,960					\$25,085
30-34	4,881	3,398	1,387	90				9,756
Tot. Pay	\$113,909,127	\$126,472,871	\$54,863,636	\$3,385,205				\$298,630,839
Avg. Pay	\$23,337	\$37,220	\$39,556	\$37,613				\$30,610
35-39	3,433	2,775	2,903	978	53			10,142
Tot. Pay	\$83,875,921	\$104,747,066	\$124,796,037	\$43,225,307	\$2,117,013			\$358,761,344
Avg. Pay	\$24,432	\$37,747	\$42,989	\$44,198	\$39,944			\$35,374
40-44	3,700	2,737	2,998	2,505	1,019	53		13,012
Tot. Pay	\$87,691,343	\$99,389,166	\$128,454,839	\$118,408,244	\$46,840,721	\$2,387,461		\$483,171,774
Avg. Pay	\$23,700	\$36,313	\$42,847	\$47,269	\$45,967	\$45,046		\$37,133
45-49	3,555	2,699	2,786	2,214	2,228	1,038	42	14,562
Tot. Pay	\$78,171,783	\$93,159,829	\$116,008,575	\$101,955,173	\$110,308,923	\$50,604,640	\$2,032,957	\$552,241,880
Avg. Pay	\$21,989	\$34,516	\$41,640	\$46,050	\$49,510	\$48,752	\$48,404	\$37,923
50-54	3,349	2,808	3,119	2,442	2,287	1,944	466	16,415
Tot. Pay	\$66,946,378	\$91,563,227	\$119,832,629	\$101,881,752	\$110,682,636	\$101,493,768	\$23,936,439	\$616,336,829
Avg. Pay	\$19,990	\$32,608	\$38,420	\$41,721	\$48,396	\$52,209	\$51,366	\$37,547
55-59	2,748	2,354	2,893	2,528	2,320	1,393	657	14,893
Tot. Pay	\$53,108,940	\$72,234,745	\$104,735,730	\$102,700,195	\$105,901,546	\$71,459,998	\$35,962,482	\$546,103,636
Avg. Pay	\$19,326	\$30,686	\$36,203	\$40,625	\$45,647	\$51,299	\$54,737	\$36,668
60-64	1,531	1,417	1,757	1,538	1,571	916	414	9,144
Tot. Pay	\$26,456,607	\$41,919,131	\$61,622,224	\$60,533,304	\$67,443,149	\$43,831,401	\$22,885,986	\$324,691,802
Avg. Pay	\$17,281	\$29,583	\$35,072	\$39,358	\$42,930	\$47,851	\$55,280	\$35,509
65-69	790	588	582	532	485	325	173	3,475
Tot. Pay	\$8,444,262	\$13,583,959	\$18,247,654	\$18,424,664	\$19,469,103	\$14,857,081	\$8,435,866	\$101,462,589
Avg. Pay	\$10,689	\$23,102	\$31,353	\$34,633	\$40,142	\$45,714	\$48,762	\$29,198
70 & Over	591	318	292	215	185	117	108	1,826
Tot. Pay	\$3,870,058	\$3,652,980	\$5,080,621	\$5,134,476	\$5,750,061	\$4,693,605	\$4,594,528	\$32,776,329
Avg. Pay	\$6,548	\$11,487	\$17,399	\$23,881	\$31,081	\$40,116	\$42,542	\$17,950
<b>Totals</b>	41,828	20,876	18,813	13,042	10,148	5,786	1,860	112,353
<b>Tot. Pay</b>	\$764,801,313	\$699,397,259	\$736,518,103	\$555,648,320	\$468,513,152	\$289,327,954	\$97,848,258	\$3,612,054,359
<b>Avg. Pay</b>	\$18,284	\$33,502	\$39,149	\$42,605	\$46,168	\$50,005	\$52,607	\$32,149

**LOCAL GOVERNMENT DIVISION  
INACTIVE MEMBERS IN DEFINED BENEFIT VALUATION  
DECEMBER 31, 2012  
BY ATTAINED AGE AND YEARS OF SERVICE**

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Attained Ages	Years of Service to Valuation Date							Total Number
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19								
20-24	29,003							29,003
25-29	37,808	394						38,202
30-34	44,279	950	93					45,322
35-39	31,758	1,268	341	33				33,400
40-44	25,277	1,604	711	161	24			27,777
45-49	18,887	1,673	962	392	121	14		22,049
50-54	19,164	1,994	1,311	561	211	84	8	23,333
55-59	18,536	2,167	1,650	770	332	38	20	23,513
60-64	12,510	1,375	806	331	116	16	11	15,165
65-69	6,567	504	185	68	25	5	9	7,363
70 & Over	3,953	174	47	14	6	4	1	4,199
<b>Totals</b>	<b>247,742</b>	<b>12,103</b>	<b>6,106</b>	<b>2,330</b>	<b>835</b>	<b>161</b>	<b>49</b>	<b>269,326</b>

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**SECTION VII**

**PUBLIC SAFETY DIVISION**

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## PUBLIC SAFETY DIVISION

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Data on active, inactive, retired and money purchase members that was used in the valuation is tabulated briefly below.

### *Active Members in Valuation December 31, 2012*

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	80	\$3,455,699	\$43,196	37.6 yrs.	8.9 yrs.
Women	7	295,642	42,235	43.7	12.2
<b>Totals</b>	<b>87</b>	<b>\$3,751,341</b>	<b>\$43,119</b>	<b>38.0 yrs.</b>	<b>9.1 yrs.</b>

Also included in the valuation were 38 inactive members and 2 members active in the money purchase plan.

### *Retired Members in Valuation December 31, 2012*

Fund/Type of Allowance	Number	Current Monthly Benefits	Actuarial Liabilities
A & PR Fund			
Superannuation Retirement	30	\$ 50,916	\$ 8,036,676
Disability Retirement	38	107,879	15,749,171
Money Purchase	0	0	0
Total A & PR Fund	68	158,795	23,785,847
Total SBF	103	127,952	17,690,843
<b>Grand Total</b>	<b>171</b>	<b>\$286,747</b>	<b>\$41,476,690</b>

**PUBLIC SAFETY DIVISION  
EMPLOYER CONTRIBUTIONS TO SUPPORT  
RETIREMENT ALLOWANCES  
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL**

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<b>Valuation Date December 31</b>	<b>2012</b>	<b>2012</b>	<b>2011</b>
<b>Contributions for</b>	<b>2015</b>	<b>2015</b>	<b>2014</b>
<b>Normal Cost</b>		<b><u>Pre-APD*</u></b>	
Age and Service Allowances	7.15 %	8.40 %	8.41 %
Disability Allowances	3.48 %	4.16 %	4.22 %
Survivor's Benefits	0.54 %	0.52 %	0.51 %
Separation Benefits	4.79 %	5.01 %	4.98 %
<b>Total Normal Cost</b>	<b>15.96 %</b>	<b>18.09 %</b>	<b>18.12 %</b>
(Member Contributions)	12.00 %	12.00 %	12.00 %
<b>Employer Normal Cost</b>	<b>3.96 %</b>	<b>6.09 %</b>	<b>6.12 %</b>
<b>Unfunded Actuarial Accrued Liabilities</b>			
Total Available Contribution	11.14 %	12.01 %	11.98 %
Amortization Years	N/A	N/A	46
<b>Total Pension Employer Contribution Rate</b>	<b>15.10 %</b>	<b>18.10 %</b>	<b>18.10 %</b>

\* *Alternate Plan Design.*

*N/A The unfunded actuarial accrued liabilities are unable to be amortized based upon the total pension contribution rate.*

The term "Amortization Years" refers to the period sufficient to produce the Total Employer Contribution Rate for retirement allowances and survivor benefits and incorporates all scheduled employer and member contribution rate increases and scheduled employer rate reallocations between the pension and retiree health programs.

**PUBLIC SAFETY DIVISION  
COMPARATIVE STATEMENT \***

Valuation Date December 31	Contribution Rate Effective January 1	Active Members in Valuation				Computed Employer Contributions as % of Payroll				
		No.	Annual Payroll			Normal Cost	Unfunded Accrued Liability	Pension Total	Retiree Health	Grand Total
			Total	Average	Increase					
			(\$Thousands)							
2005@	2008	135	\$6,078	\$45,023	6.7 %	9.01 %	1.39 %	10.40 %	7.00 %	17.40 %
2006	2009	127	5,851	46,067	2.3 %	8.73 %	1.90 %	10.63 %	7.00 %	17.63 %
2007	2010	120	5,638	46,985	2.0 %	8.95 %	1.92 %	10.87 %	7.00 %	17.87 %
2008	2011	127	6,219	48,969	4.2 %	8.32 %	5.78 %	14.10 %	4.00 %	18.10 %
2009	2012	94	4,061	43,205	(11.8)%	7.77 %	6.33 %	14.10 %	4.00 %	18.10 %
2010@	2013	88	3,650	41,480	(4.0)%	6.22 %	10.88 %	17.10 %	1.00 %	18.10 %
2011	2014	84	3,629	43,202	4.2 %	6.12 %	11.98 %	18.10 %	0.00 %	18.10 %
2012	2015	87	3,751	43,119	(0.2)%	6.09 %	12.01 %	18.10 %	0.00 %	18.10 %
2012#	2015	87	3,751	43,119	(0.2)%	3.96 %	11.14 %	15.10 %	3.00 %	18.10 %

# After benefit changes.

\* Prior to 2005, Public Safety and Law Enforcement results were reported together. Historical information prior to 2005 may be found on page VIII-3.

@ Revised actuarial assumptions.

**PUBLIC SAFETY DIVISION**  
**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES**  
**DECEMBER 31, 2012**

Actuarial Present Value	(1) Total Actuarial Present Value	Allocation by Entry Age	
		(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
Allowances currently being paid from the Annuity & Pension Reserve Fund	\$23,785,847	\$ -	\$23,785,847
Allowances currently being paid from the Survivors Benefit Fund	17,690,843	-	17,690,843
Age and service allowances based on service rendered before and likely to be rendered after valuation date	7,891,584	2,399,911	5,491,673
Disability allowances likely to be paid present active members who become permanently disabled	2,367,089	1,151,584	1,215,505
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	396,105	176,510	219,595
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members	2,231,481	1,675,853	555,628
<b>Total</b>	<b>\$54,362,949</b>	<b>\$5,403,858</b>	<b>\$48,959,091</b>
Actuarial Value of Assets			27,699,548
Unfunded Actuarial Accrued Liability			<b>\$21,259,543</b>

**PUBLIC SAFETY DIVISION**  
**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES**  
**COMPARATIVE STATEMENT \***  
**(\$ IN MILLIONS EXCEPT AVERAGES)**

Dec. 31	Defined Benefit Active Payroll		Active and Inactive Member Accrued Liabilities for Retirement Allowances				Unfunded /Payroll
			Computed	Valuation	Unfunded	Amortization	
	Total	Average	Total	Assets		Years	
2005@	\$6	\$45,023	\$16	\$(44)	\$60	N/A	10.00
2006	6	46,067	16	(64)	80	N/A	13.33
2007	6	46,985	18	(82)	100	N/A	16.67
2008	6	48,969	18	9	9	79	1.50
2009	4	43,205	12	0	12	N/A	3.00
2010@	4	41,480	7	(7)	14	N/A	3.50
2011	4	43,202	8	(1)	9	45	2.25
2012	4	43,119	8	(14)	22	N/A	5.50
2012#	4	43,119	7	(14)	21	N/A	5.25

# After benefit changes.

N/A The unfunded actuarial accrued liabilities are unable to be amortized based upon the total pension contribution rate.

\* Prior to 2005, Public Safety and Law Enforcement results were reported together. Historical information prior to 2005 may be found on page VIII-5.

@ Revised actuarial assumptions.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll (“UNFUNDED/PAYROLL” above) is significant. Unfunded accrued liabilities represent plan debt, while active member payroll represents the plan’s capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength, and vice-versa.

**PUBLIC SAFETY DIVISION**  
**MALE ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19								
Tot. Pay								
Avg. Pay								
20-24	8	1						9
Tot. Pay	\$333,005	\$50,108						\$383,113
Avg. Pay	\$41,626	\$50,108						\$42,568
25-29	12	2						14
Tot. Pay	\$521,700	\$81,742						\$603,442
Avg. Pay	\$43,475	\$40,871						\$43,103
30-34	4	5	3					12
Tot. Pay	\$164,019	\$234,930	\$148,397					\$547,346
Avg. Pay	\$41,005	\$46,986	\$49,466					\$45,612
35-39	2	7	4	1				14
Tot. Pay	\$84,765	\$254,882	\$198,738	\$46,958				\$585,343
Avg. Pay	\$42,383	\$36,412	\$49,685	\$46,958				\$41,810
40-44	1	2	4	3	2			12
Tot. Pay	\$30,734	\$84,439	\$160,709	\$142,445	\$88,473			\$506,800
Avg. Pay	\$30,734	\$42,220	\$40,177	\$47,482	\$44,237			\$42,233
45-49		2	3	1	2			8
Tot. Pay		\$98,130	\$126,669	\$5,990	\$82,163			\$312,952
Avg. Pay		\$49,065	\$42,223	\$5,990	\$41,082			\$39,119
50-54	1	1		1				3
Tot. Pay	\$35,892	\$61,665		\$40,803				\$138,360
Avg. Pay	\$35,892	\$61,665		\$40,803				\$46,120
55-59				3		1		4
Tot. Pay				\$137,729		\$48,271		\$186,000
Avg. Pay				\$45,910		\$48,271		\$46,500
60-64		2			2			4
Tot. Pay		\$100,061			\$92,282			\$192,343
Avg. Pay		\$50,031			\$46,141			\$48,086
65-69								
Tot. Pay								
Avg. Pay								
70 & Over								
Tot. Pay								
Avg. Pay								
<b>Totals</b>	28	22	14	9	6	1		80
<b>Tot. Pay</b>	\$1,170,115	\$965,957	\$634,513	\$373,925	\$262,918	\$48,271	\$ -	\$3,455,699
<b>Avg. Pay</b>	\$41,790	\$43,907	\$45,322	\$41,547	\$43,820	\$48,271		\$43,196

**PUBLIC SAFETY DIVISION**  
**FEMALE ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

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Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19								
Tot. Pay								
Avg. Pay								
20-24								
Tot. Pay								
Avg. Pay								
25-29		1						1
Tot. Pay		\$45,406						\$45,406
Avg. Pay		\$45,406						\$45,406
30-34		1						1
Tot. Pay		\$40,036						\$40,036
Avg. Pay		\$40,036						\$40,036
35-39								
Tot. Pay								
Avg. Pay								
40-44						2		2
Tot. Pay					\$112,408			\$112,408
Avg. Pay					\$56,204			\$56,204
45-49								
Tot. Pay								
Avg. Pay								
50-54			1			1		2
Tot. Pay			\$31,269			\$36,920		\$68,189
Avg. Pay			\$31,269			\$36,920		\$34,095
55-59			1					1
Tot. Pay			\$29,603					\$29,603
Avg. Pay			\$29,603					\$29,603
60-64								
Tot. Pay								
Avg. Pay								
65-69								
Tot. Pay								
Avg. Pay								
70 & Over								
Tot. Pay								
Avg. Pay								
<b>Totals</b>	2	2			3			7
<b>Tot. Pay</b>	\$85,442	\$60,872	\$ -	\$ -	\$149,328	\$ -	\$ -	\$295,642
<b>Avg. Pay</b>	\$42,721	\$30,436			\$49,776			\$42,235

**PUBLIC SAFETY DIVISION**  
**INACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

---

Attained Ages	Years of Service to Valuation Date							Total Number
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19								
20-24	1							1
25-29	11	1						12
30-34	10	1						11
35-39	6	2						8
40-44	4							4
45-49	1			1				2
50-54								
55-59								
60-64								
65-69								
70 & Over								
<b>Totals</b>	<b>33</b>	<b>4</b>		<b>1</b>				<b>38</b>

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**SECTION VIII**

LAW ENFORCEMENT DIVISION

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## LAW ENFORCEMENT DIVISION

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Data on active, inactive, retired and money purchase members that was used in the valuation is tabulated briefly below.

### *Active Members in Valuation December 31, 2012*

Groups	Number	Annual Payroll	Average		
			Pay	Age	Service
Men	6,577	\$389,434,659	\$59,212	41.4 yrs.	14.3 yrs.
Women	893	49,065,743	54,945	41.3	13.5
<b>Totals</b>	<b>7,470</b>	<b>\$438,500,402</b>	<b>\$58,702</b>	<b>41.4 yrs.</b>	<b>14.2 yrs.</b>

Also included in the valuation were 909 inactive members and 56 members active in the money purchase plan.

### *Retired Members in Valuation December 31, 2012*

Fund/Type of Allowance	Number	Current Monthly Benefits	Actuarial Liabilities
A & PR Fund			
Superannuation Retirement	2,620	\$ 8,408,401	\$ 1,277,852,692
Disability Retirement	1,575	4,701,050	657,214,471
Money Purchase	0	0	0
Total A & PR Fund	4,195	13,109,451	1,935,067,163
Total SBF	315	340,471	42,651,557
<b>Grand Total</b>	<b>4,510</b>	<b>\$13,449,922</b>	<b>\$1,977,718,720</b>

**LAW ENFORCEMENT DIVISION  
EMPLOYER CONTRIBUTIONS TO SUPPORT  
RETIREMENT ALLOWANCES  
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL**

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<b>Valuation Date December 31</b>	<b>2012</b>	<b>2012</b>	<b>2011</b>
<b>Contributions for</b>	<b>2015</b>	<b>2015</b>	<b>2014</b>
<b>Normal Cost</b>		<u><b>Pre-APD*</b></u>	
Age and Service Allowances	11.39 %	12.16 %	12.14 %
Disability Allowances	4.03 %	4.80 %	4.81 %
Survivor's Benefits	0.55 %	0.53 %	0.53 %
Separation Benefits	2.46 %	2.71 %	2.70 %
<b>Total Normal Cost</b>	<b>18.43 %</b>	<b>20.20 %</b>	<b>20.18 %</b>
(Member Contributions)	13.00 %	13.00 %	13.00 %
<b>Employer Normal Cost</b>	<b>5.43 %</b>	<b>7.20 %</b>	<b>7.18 %</b>
<b>Unfunded Actuarial Accrued Liabilities</b>			
Total Available Contribution	9.67 %	10.90 %	10.92 %
Amortization Years	16	17	24
<b>Total Pension Employer Contribution Rate</b>	<b>15.10 %</b>	<b>18.10 %</b>	<b>18.10 %</b>

\* *Alternate Plan Design.*

The term "Amortization Years" refers to the period sufficient to produce the Total Employer Contribution Rate for retirement allowances and survivor benefits and incorporates all scheduled employer and member contribution rate increases and scheduled employer rate reallocations between the pension and retiree health programs.

**LAW ENFORCEMENT DIVISION  
COMPARATIVE STATEMENT \***

Valuation Date December 31	Contribution Rate Effective January 1	Active Members in Valuation				Computed Employer Contributions as % of Payroll				
		No.	Annual Payroll			Normal Cost	Unfunded Accrued Liability	Pension Total	Retiree Health	Grand Total
			Total	Average	Increase					
			(\$Thousands)							
1998	2001	7,507	\$277,239	\$36,931	3.5 %	10.48 %	1.92 %	12.40 %	4.30 %	16.70 %
1999#	2002	7,766	299,040	38,506	4.3 %	11.54 %	0.16 %	11.70 %	5.00 %	16.70 %
2000	2003	8,045	324,918	40,387	4.9 %	11.59 %	0.11 %	11.70 %	5.00 %	16.70 %
2001@	2004	7,892	335,432	42,503	5.2 %	8.88 %	3.82 %	12.70 %	4.00 %	16.70 %
2002	2005	8,030	356,694	44,420	4.5 %	8.77 %	3.93 %	12.70 %	4.00 %	16.70 %
2003	2006	8,253	384,388	46,576	4.9 %	8.65 %	3.78 %	12.43 %	4.50 %	16.93 %
2004	2007	8,173	392,672	48,045	3.2 %	8.63 %	3.04 %	11.67 %	5.50 %	17.17 %
2005@	2008	7,976	395,189	49,547	3.0 %	9.65 %	0.75 %	10.40 %	7.00 %	17.40 %
2006	2009	8,092	413,182	51,061	3.1 %	9.65 %	0.98 %	10.63 %	7.00 %	17.63 %
2007	2010	8,265	437,223	52,901	3.6 %	9.95 %	0.92 %	10.87 %	7.00 %	17.87 %
2008	2011	8,173	448,694	54,900	3.8 %	8.43 %	5.67 %	14.10 %	4.00 %	18.10 %
2009	2012	8,006	447,232	55,862	1.8 %	8.16 %	5.94 %	14.10 %	4.00 %	18.10 %
2010@	2013	7,702	438,830	56,976	2.0 %	7.56 %	9.54 %	17.10 %	1.00 %	18.10 %
2011	2014	7,545	437,605	57,999	1.8 %	7.18 %	10.92 %	18.10 %	0.00 %	18.10 %
2012	2015	7,470	438,500	58,702	1.2 %	7.20 %	10.90 %	18.10 %	0.00 %	18.10 %
2012#	2015	7,470	438,500	58,702	1.2 %	5.43 %	9.67 %	15.10 %	3.00 %	18.10 %

# After benefit changes.

@ Revised actuarial assumptions.

\* Prior to 2005, Law Enforcement and Public Safety are combined for purposes of this schedule.

**LAW ENFORCEMENT DIVISION**  
**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES**  
**DECEMBER 31, 2012**

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Actuarial Present Value	(1) Total Actuarial Present Value	Allocation by Entry Age	
		(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
Allowances currently being paid from the Annuity & Pension Reserve Fund	\$ 1,935,067,163	\$ -	\$ 1,935,067,163
Allowances currently being paid from the Survivors Benefit Fund	42,651,557	-	42,651,557
Age and service allowances based on service rendered before and likely to be rendered after valuation date	1,701,634,514	451,653,255	1,249,981,259
Disability allowances likely to be paid present active members who become permanently disabled	335,023,605	158,949,632	176,073,973
Survivor benefits likely to be paid to spouses and children of present active members who die before retiring	52,632,980	21,403,774	31,229,206
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members	120,805,816	98,107,106	22,698,710
Total	\$4,187,815,635	\$730,113,767	\$3,457,701,868
Actuarial Value of Assets			2,922,919,952
Unfunded Actuarial Accrued Liability			\$ 534,781,916

**LAW ENFORCEMENT DIVISION**  
**DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES**  
**COMPARATIVE STATEMENT \***  
**(\$ IN MILLIONS EXCEPT AVERAGES)**

Dec. 31	Defined Benefit Active Payroll		Active and Inactive Member Accrued Liabilities for Retirement Allowances				Unfunded /Payroll
			Computed Total	Valuation Assets	Unfunded	Amortization Years	
	Total	Average					
1998	\$277	\$36,931	\$ 914	\$ 895	\$ 19	5	0.07
1999#	299	38,506	1,080	1,038	42	20	0.14
2000	325	40,387	1,175	1,137	38	18	0.12
2001@	335	42,503	1,071	1,149	(78)	-	-
2002	357	44,420	1,135	854	281	36	0.79
2003	384	46,576	1,170	838	332	41	0.86
2004	393	48,045	1,197	868	329	43	0.84
2005@	395	49,547	1,298	926	372	N/A	0.94
2006	413	51,061	1,356	1,069	287	N/A	0.69
2007	437	52,901	1,430	1,214	216	N/A	0.49
2008	449	54,900	1,500	771	729	N/A	1.62
2009	447	55,862	1,534	807	727	N/A	1.63
2010@	439	56,976	1,542	966	576	19	1.31
2011	438	57,999	1,546	813	733	23	1.67
2012	439	58,702	1,562	945	617	16	1.41
2012#	439	58,702	1,480	945	535	14	1.22

# After benefit changes.

@ Revised actuarial assumptions.

\* Prior to 2005, Law Enforcement and Public Safety are combined for purposes of this schedule.

While no one or two numeric indices can fully describe the financial condition of a retirement plan, the ratio of unfunded actuarial accrued liabilities divided by active member payroll (“UNFUNDED/PAYROLL” above) is significant. Unfunded accrued liabilities represent plan debt, while active member payroll represents the plan’s capacity to collect contributions to pay toward debt --- thus the ratio is a relative index of condition. The lower the ratio, the greater the financial strength, and vice-versa.

**LAW ENFORCEMENT DIVISION**  
**MALE ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19								
Tot. Pay								
Avg. Pay								
20-24	105	2						107
Tot. Pay	\$3,647,259	\$126,502						\$3,773,761
Avg. Pay	\$34,736	\$63,251						\$35,269
25-29	337	199	8					544
Tot. Pay	\$14,405,294	\$10,260,486	\$501,577					\$25,167,357
Avg. Pay	\$42,746	\$51,560	\$62,697					\$46,264
30-34	152	434	268	6				860
Tot. Pay	\$6,923,286	\$24,311,860	\$16,354,444	\$409,492				\$47,999,082
Avg. Pay	\$45,548	\$56,018	\$61,024	\$68,249				\$55,813
35-39	107	234	650	238	2			1,231
Tot. Pay	\$4,588,773	\$12,889,747	\$39,675,000	\$14,906,828	\$147,909			\$72,208,257
Avg. Pay	\$42,886	\$55,084	\$61,038	\$62,634	\$73,955			\$58,658
40-44	58	158	367	735	275	6		1,599
Tot. Pay	\$2,392,004	\$8,620,895	\$21,863,929	\$47,090,800	\$18,164,154	\$469,609		\$98,601,391
Avg. Pay	\$41,241	\$54,563	\$59,575	\$64,069	\$66,051	\$78,268		\$61,664
45-49	33	57	158	291	390	144	2	1,075
Tot. Pay	\$1,471,208	\$3,096,710	\$9,262,480	\$18,399,252	\$25,841,409	\$10,212,486	\$134,593	\$68,418,138
Avg. Pay	\$44,582	\$54,328	\$58,623	\$63,228	\$66,260	\$70,920	\$67,297	\$63,645
50-54	11	30	61	103	196	182	36	619
Tot. Pay	\$530,630	\$1,608,486	\$3,623,990	\$6,086,169	\$12,534,288	\$12,533,788	\$2,832,847	\$39,750,198
Avg. Pay	\$48,239	\$53,616	\$59,410	\$59,089	\$63,950	\$68,867	\$78,690	\$64,217
55-59	12	21	40	68	85	76	57	359
Tot. Pay	\$459,885	\$1,207,385	\$2,351,585	\$4,000,256	\$5,039,614	\$5,391,858	\$4,183,865	\$22,634,448
Avg. Pay	\$38,324	\$57,495	\$58,790	\$58,827	\$59,290	\$70,946	\$73,401	\$63,049
60-64	3	7	15	22	37	26	32	142
Tot. Pay	\$98,817	\$379,292	\$737,927	\$1,201,681	\$2,283,224	\$1,715,988	\$2,288,527	\$8,705,456
Avg. Pay	\$32,939	\$54,185	\$49,195	\$54,622	\$61,709	\$66,000	\$71,516	\$61,306
65-69	2	4	5	8	8	4		31
Tot. Pay	\$22,751	\$221,548	\$246,446	\$458,564	\$436,722	\$202,943		\$1,588,974
Avg. Pay	\$11,376	\$55,387	\$49,289	\$57,321	\$54,590	\$50,736		\$51,257
70 & Over		3	4			1	2	10
Tot. Pay		\$121,427	\$248,555			\$36,733	\$180,882	\$587,597
Avg. Pay		\$40,476	\$62,139			\$36,733	\$90,441	\$58,760
<b>Totals</b>	820	1,149	1,576	1,471	993	439	129	6,577
<b>Tot. Pay</b>	\$34,539,907	\$62,844,338	\$94,865,933	\$92,553,042	\$64,447,320	\$30,563,405	\$9,620,714	\$389,434,659
<b>Avg. Pay</b>	\$42,122	\$54,695	\$60,194	\$62,918	\$64,902	\$69,621	\$74,579	\$59,212

**LAW ENFORCEMENT DIVISION**  
**FEMALE ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Ages	Years of Service To Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19								
Tot. Pay								
Avg. Pay								
20-24	21							21
Tot. Pay	\$637,579							\$637,579
Avg. Pay	\$30,361							\$30,361
25-29	45	18	1					64
Tot. Pay	\$2,036,929	\$903,226	\$50,953					\$2,991,108
Avg. Pay	\$45,265	\$50,179	\$50,953					\$46,736
30-34	30	62	45					137
Tot. Pay	\$1,417,049	\$3,320,216	\$2,554,783					\$7,292,048
Avg. Pay	\$47,235	\$53,552	\$56,773					\$53,227
35-39	12	35	75	38	2			162
Tot. Pay	\$494,059	\$1,758,030	\$4,386,826	\$2,233,276	\$100,636			\$8,972,827
Avg. Pay	\$41,172	\$50,229	\$58,491	\$58,770	\$50,318			\$55,388
40-44	13	24	41	90	20	2		190
Tot. Pay	\$440,098	\$1,276,715	\$2,448,805	\$5,341,495	\$1,317,763	\$122,112		\$10,946,988
Avg. Pay	\$33,854	\$53,196	\$59,727	\$59,350	\$65,888	\$61,056		\$57,616
45-49	3	16	31	39	41	14	1	145
Tot. Pay	\$96,570	\$828,136	\$1,715,844	\$2,312,303	\$2,559,687	\$852,591	\$58,010	\$8,423,141
Avg. Pay	\$32,190	\$51,759	\$55,350	\$59,290	\$62,431	\$60,899	\$58,010	\$58,091
50-54	3	7	10	26	29	15	2	92
Tot. Pay	\$108,092	\$309,422	\$519,359	\$1,426,655	\$1,668,614	\$1,005,140	\$148,393	\$5,185,675
Avg. Pay	\$36,031	\$44,203	\$51,936	\$54,871	\$57,538	\$67,009	\$74,197	\$56,366
55-59		5	9	15	13	16	4	62
Tot. Pay		\$252,180	\$495,200	\$801,369	\$751,892	\$988,928	\$267,752	\$3,557,321
Avg. Pay		\$50,436	\$55,022	\$53,425	\$57,838	\$61,808	\$66,938	\$57,376
60-64	1	1	4	4	5	1	2	18
Tot. Pay	\$11,571	\$57,595	\$238,884	\$182,578	\$272,165	\$59,149	\$145,887	\$967,829
Avg. Pay	\$11,571	\$57,595	\$59,721	\$45,645	\$54,433	\$59,149	\$72,944	\$53,768
65-69			1			1		2
Tot. Pay			\$36,738			\$54,489		\$91,227
Avg. Pay			\$36,738			\$54,489		\$45,614
70 & Over								
Tot. Pay								
Avg. Pay								
<b>Totals</b>	128	168	217	212	110	49	9	893
<b>Tot. Pay</b>	\$5,241,947	\$8,705,520	\$12,447,392	\$12,297,676	\$6,670,757	\$3,082,409	\$620,042	\$49,065,743
<b>Avg. Pay</b>	\$40,953	\$51,819	\$57,361	\$58,008	\$60,643	\$62,906	\$68,894	\$54,945

**LAW ENFORCEMENT DIVISION**  
**INACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

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Attained Ages	Years of Service to Valuation Date							Total Number
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19								
20-24	8							8
25-29	61	1						62
30-34	97	27	4					128
35-39	110	27	15	1				153
40-44	124	31	18	11	2			186
45-49	90	12	15	11	5	2		135
50-54	49	15	14	13	4	2		97
55-59	35	7	10	8	7	1	1	69
60-64	34	3	1	2				40
65-69	12	3						15
70 & Over	15				1			16
<b>Totals</b>	<b>635</b>	<b>126</b>	<b>77</b>	<b>46</b>	<b>19</b>	<b>5</b>	<b>1</b>	<b>909</b>

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**SECTION IX**

ALLOWANCES BEING PAID TO  
RETIREES AND BENEFICIARIES

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**MONTHLY ALLOWANCES OF RETIRED LIVES  
BY YEAR OF RETIREMENT  
AS OF DECEMBER 31, 2012**

<b>Year of Retirement</b>	<b>No.</b>	<b>Initial</b>	<b>Post-Ret. Increase</b>	<b>Total</b>	<b>Average</b>
2012	11,809	\$24,687,417	\$ 102,530	\$ 24,789,947	\$2,099
2011	12,194	27,211,079	933,495	28,144,574	2,308
2010	11,075	22,480,470	1,447,366	23,927,836	2,161
2009	10,915	22,785,913	2,109,117	24,895,030	2,281
2008	9,527	18,064,549	2,214,914	20,279,463	2,129
2007	9,088	16,675,310	2,555,168	19,230,478	2,116
2006	9,668	16,876,341	3,074,969	19,951,310	2,064
2005	9,021	16,190,821	3,428,764	19,619,585	2,175
2004	8,479	14,339,832	3,461,650	17,801,482	2,099
2003	7,983	13,642,314	3,689,811	17,332,125	2,171
2002	8,811	14,674,328	4,420,040	19,094,368	2,167
2001	7,268	11,401,535	3,763,787	15,165,322	2,087
2000	6,972	10,216,039	3,632,657	13,848,696	1,986
1999	6,128	8,515,192	3,167,835	11,683,027	1,906
1998	6,032	7,749,382	3,021,983	10,771,365	1,786
1997	5,572	7,330,084	3,049,642	10,379,726	1,863
1996	5,432	6,594,083	2,925,647	9,519,730	1,753
1991-1995	20,487	21,726,543	11,344,422	33,070,965	1,614
1986-1990	15,153	13,137,852	9,169,265	22,307,117	1,472
1981-1985	8,617	5,199,535	4,622,088	9,821,623	1,140
1976-1980	3,989	1,706,118	2,260,142	3,966,260	994
1971-1975	1,158	322,129	621,761	943,890	815
1966-1970	265	60,210	184,353	244,563	923
1961-1965	107	23,744	75,283	99,027	925
Before 1961	29	6,087	23,742	29,829	
<b>TOTAL</b>	<b>195,779</b>	<b>\$301,616,907</b>	<b>\$75,300,431</b>	<b>\$376,917,338</b>	<b>\$1,925</b>

**MONTHLY ALLOWANCES OF RETIRED LIVES  
BY YEARS OF SERVICE  
AS OF DECEMBER 31, 2012**

<b>Years of Service</b>	<b>No.</b>	<b>Initial</b>	<b>Post-Ret. Increase</b>	<b>Total</b>	<b>Average</b>
<5 or n/a	6,949	\$ 2,391,881	\$ 410,716	\$ 2,802,597	\$403
5	4,282	1,637,243	439,873	2,077,116	485
6	3,405	1,430,490	381,072	1,811,562	532
7	3,222	1,450,011	385,025	1,835,036	570
8	3,038	1,484,380	370,793	1,855,173	611
9	2,285	1,254,214	308,801	1,563,015	684
10	9,427	4,463,559	1,232,578	5,696,137	604
11	5,636	3,163,323	833,532	3,996,855	709
12	5,533	3,280,402	893,147	4,173,549	754
13	5,039	3,388,796	905,314	4,294,110	852
14	4,792	3,326,700	914,279	4,240,979	885
15	5,256	3,951,224	1,096,112	5,047,336	960
16	5,056	3,996,113	1,132,823	5,128,936	1,014
17	4,669	4,133,295	1,165,144	5,298,439	1,135
18	4,618	4,309,713	1,230,930	5,540,643	1,200
19	4,553	4,479,426	1,265,388	5,744,814	1,262
20	5,672	6,108,460	1,670,040	7,778,500	1,371
21	4,866	5,592,836	1,588,621	7,181,457	1,476
22	4,604	5,738,341	1,599,324	7,337,665	1,594
23	4,538	5,989,804	1,651,184	7,640,988	1,684
24	4,302	6,187,679	1,671,984	7,859,663	1,827
25	8,833	13,948,797	3,736,103	17,684,900	2,002
26	5,513	9,428,015	2,630,793	12,058,808	2,187
27	5,529	10,267,698	2,845,416	13,113,114	2,372
28	6,029	12,667,336	3,415,227	16,082,563	2,668
29	5,940	13,515,869	3,265,914	16,781,783	2,825
30	26,178	64,287,672	14,007,440	78,295,112	2,991
31	8,037	20,504,030	4,687,936	25,191,966	3,134
32	6,263	16,515,783	3,889,494	20,405,277	3,258
33	4,840	13,320,344	3,060,076	16,380,420	3,384
34	3,815	10,735,035	2,613,074	13,348,109	3,499
35	3,514	10,143,795	2,486,932	12,630,727	3,594
36	2,504	7,238,861	1,809,531	9,048,392	3,614
37	1,982	5,796,222	1,456,735	7,252,957	3,659
38	1,442	4,151,000	1,103,164	5,254,164	3,644
39	1,150	3,276,659	926,528	4,203,187	3,655
40 & Over	2,468	8,061,901	2,219,388	10,281,289	4,166
<b>TOTAL</b>	<b>195,779</b>	<b>\$301,616,907</b>	<b>\$75,300,431</b>	<b>\$376,917,338</b>	<b>\$1,925</b>

**ANNUITY AND PENSION RESERVE FUND**  
**ANNUAL ALLOWANCE, REPORTED ASSETS AND ACTUARIAL LIABILITIES**  
**COMPARATIVE STATEMENT**  
**(\$ MILLIONS)**

Valuation Date	Annual Allowances			Reported Assets*	Actuarial Liabilities	Ratio of Assets to Liabilities	Ratio of DB Active to Retired
	No.	\$ Millions	% of DB Payroll				
12/31/1983	74,442	\$ 333	8.7 % **	\$ 3,554	\$ 3,428	103.7 %	3.3
12/31/1984	77,493	386	9.5 % **	3,993	3,993	100.0 %	3.2
12/31/1985	80,999	429	10.0 % **	4,498	4,456	100.9 %	3.1
12/31/1986	84,892	474	10.4 % **	4,965	4,935	100.6 %	3.0
12/31/1987	86,924	518	10.6 % **	5,485	5,437	100.9 %	3.0
12/31/1988	89,972	581	10.9 % **	6,182	6,173	100.1 %	2.9
12/31/1989@	92,504	661	12.4 % **	6,985	6,911	101.1 %	2.9
12/31/1990	94,088	706	11.7 % **	7,438	7,338	101.4 %	3.0
12/31/1991	95,843	762	11.5 % **	8,014	7,904	101.4 %	3.4
12/31/1992	98,609	835	12.1 % **	8,814	8,692	101.4 %	3.4
12/31/1993	100,651	901	12.5 % **	9,390	9,356	100.4 %	3.4
12/31/1994	102,587	958	12.6 % **	9,964	9,893	100.7 %	3.3
12/31/1995	104,806	1,036	13.0 % **	10,808	10,737	100.7 %	3.3
12/31/1996@	107,617	1,141	13.7 % **	11,819	11,762	100.5 %	3.3
12/31/1997	110,470	1,233	14.3 % **	12,843	12,755	100.7 %	3.2
12/13/1998	113,000	1,327	14.7 % **	13,885	13,751	101.0 %	3.1
12/31/1999+	115,431	1,530	16.1 % **	14,978	16,139	92.8 %	3.1
12/31/2000	118,620	1,641	16.1 % **	16,980	16,980	100.0 %	3.1
12/31/2001@	121,875	1,775	16.5 % **	18,001	18,001	100.0 %	3.0
12/31/2002	126,409	1,958	17.5 % **	20,085	20,085	100.0 %	2.9
12/31/2003	130,433	2,136	19.1 % **	22,535	22,535	100.0 %	2.7
12/31/2004	134,535	2,311	20.2 % **	24,470	24,470	100.0 %	2.6
12/31/2005@	138,996	2,508	21.2 % **	27,084	27,084	100.0 %	2.6
12/31/2006	144,037	2,710	22.3 % **	29,304	29,304	100.0 %	2.5
12/31/2007	148,493	2,916	23.2 % **	31,547	31,547	100.0 %	2.5
12/31/2008	153,931	3,148	24.6 % **	34,060	34,060	100.0 %	2.3
12/31/2009	159,518	3,419	27.2 % **	37,098	37,098	100.0 %	2.2
12/31/2010@	166,247	3,705	29.8 % **	40,184	40,818	100.0 %	2.1
12/31/2011	174,679	4,065	32.8 % **	45,001	45,001	100.0 %	1.9
12/31/2012	180,759	4,352	35.7 % **	48,044	48,044	100.0 %	1.8

\* Including certain recommended transfers and accrued transfers.

@ Revised actuarial assumptions.

\*\* Excluding health insurance and Medicare payments.

+ Including estimated effect of legislated benefit changes.

**ANNUITY AND PENSION RESERVE FUND  
 RETIREES AND BENEFICIARIES DECEMBER 31, 2012  
 TYPE OF BENEFIT, MONTHLY AMOUNT AND ACTUARIAL LIABILITIES**

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Type of Allowance	Number	Current Total	Actuarial Liabilities
Superannuation Retirement			
Plan A - Joint & 50%	22,643	\$ 52,838,772	\$ 7,399,069,841
Plan B - Straight Life	71,838	135,942,727	16,335,572,082
Plan C - Special Joint & Survivor	17,898	44,697,110	6,292,954,965
Plan D - Joint & 100%	24,428	55,597,963	8,906,445,867
Plan E - Life & 0 to 5 Years Guaranteed	372	619,599	77,142,836
- Life & 6 to 10 Years Guaranteed	546	954,681	117,667,772
- Life & 11 to 15 Years Guaranteed	746	1,102,341	139,009,670
- Life & 16 to 20 Years Guaranteed	69	146,953	23,011,031
Plan F - Multiple Continuing Beneficiaries	680	1,680,351	316,817,748
Money Purchase	2,595	1,101,947	131,972,902
Survivor Beneficiary - Life Benefit	16,108	17,612,878	1,614,698,378
Survivor Beneficiary - Temporary Benefit	76	81,375	4,342,573
<b>Total Superannuation</b>	<b>157,999</b>	<b>\$ 312,376,697</b>	<b>\$ 41,358,705,665</b>
Disability Retirement	22,760	\$ 50,251,387	\$ 6,685,265,181
<b>Total from A &amp; PR</b>	<b>180,759</b>	<b>\$ 362,628,084</b>	<b>\$ 48,043,970,846</b>

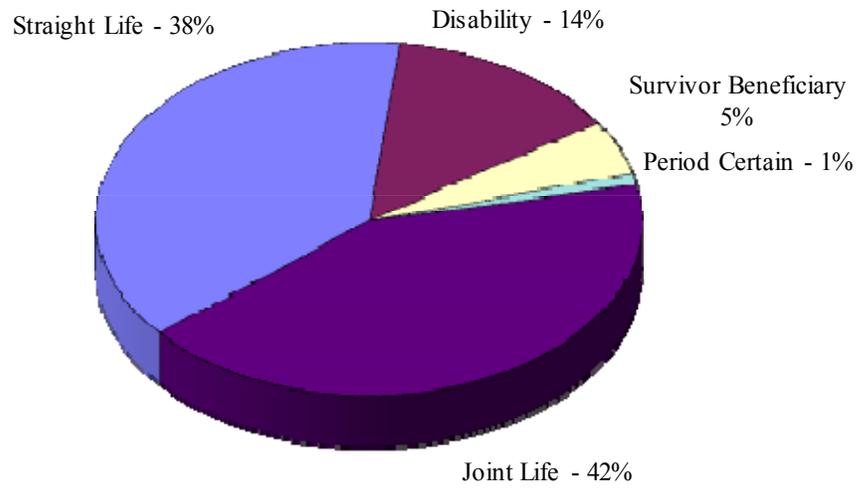
**ANNUITY AND PENSION RESERVE FUND  
 RETIREES AND BENEFICIARIES DECEMBER 31, 2012  
 TYPE OF BENEFIT AND AMOUNT BY GENDER OF RECIPIENT**

Type of Allowance	Men		Women		Total	
	Number	Monthly Allowances	Number	Monthly Allowances	Number	Monthly Allowances
Superannuation Retirement						
Plan A - Joint & 50%	15,057	\$ 37,358,355	7,586	\$ 15,480,417	22,643	\$ 52,838,772
Plan B - Straight Life	21,913	47,645,169	49,925	88,297,558	71,838	135,942,727
Plan C - Special Joint & Survivor	7,489	22,668,093	10,409	22,029,017	17,898	44,697,110
Plan D - Joint & 100%	19,625	46,560,359	4,803	9,037,604	24,428	55,597,963
Plan E - Life & 0 to 5 Years Guaranteed	149	268,029	223	351,570	372	619,599
- Life & 6 to 10 Years Guaranteed	274	485,569	272	469,112	546	954,681
- Life & 11 to 15 Years Guaranteed	423	605,726	323	496,615	746	1,102,341
- Life & 16 to 20 Years Guaranteed	43	85,398	26	61,555	69	146,953
Plan F - Multiple Continuing Beneficiaries	255	779,174	425	901,177	680	1,680,351
Money Purchase	1,741	878,679	854	223,268	2,595	1,101,947
Survivor Beneficiary - Life Benefit	1,636	1,130,813	14,472	16,482,065	16,108	17,612,878
Survivor Beneficiary - Temporary Benefit	20	16,519	56	64,856	76	81,375
Total Superannuation	68,625	\$ 158,481,883	89,374	\$ 153,894,814	157,999	\$ 312,376,697
Disability Retirement	11,604	\$ 28,304,237	11,156	\$ 21,947,150	22,760	\$ 50,251,387
<b>Total from A &amp; PR</b>	<b>80,229</b>	<b>\$ 186,786,120</b>	<b>100,530</b>	<b>\$ 175,841,964</b>	<b>180,759</b>	<b>\$ 362,628,084</b>

**ANNUITIES BEING PAID BY TYPE**  
**DECEMBER 31, 2012**

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**Annuity and Pension Reserve Fund**

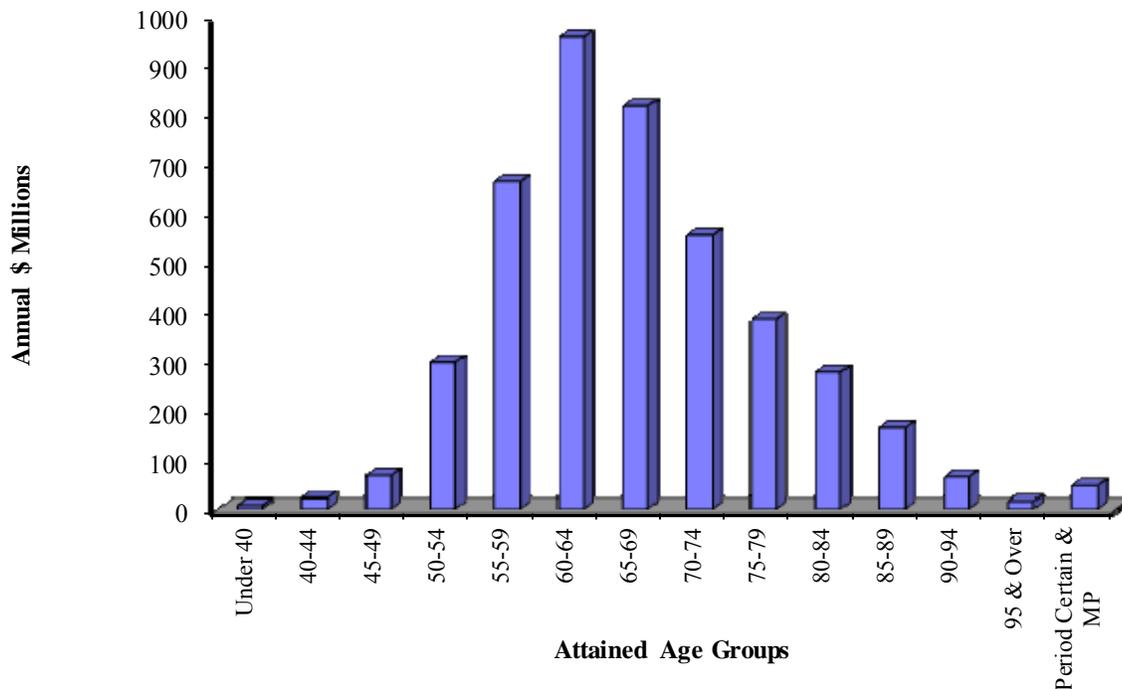
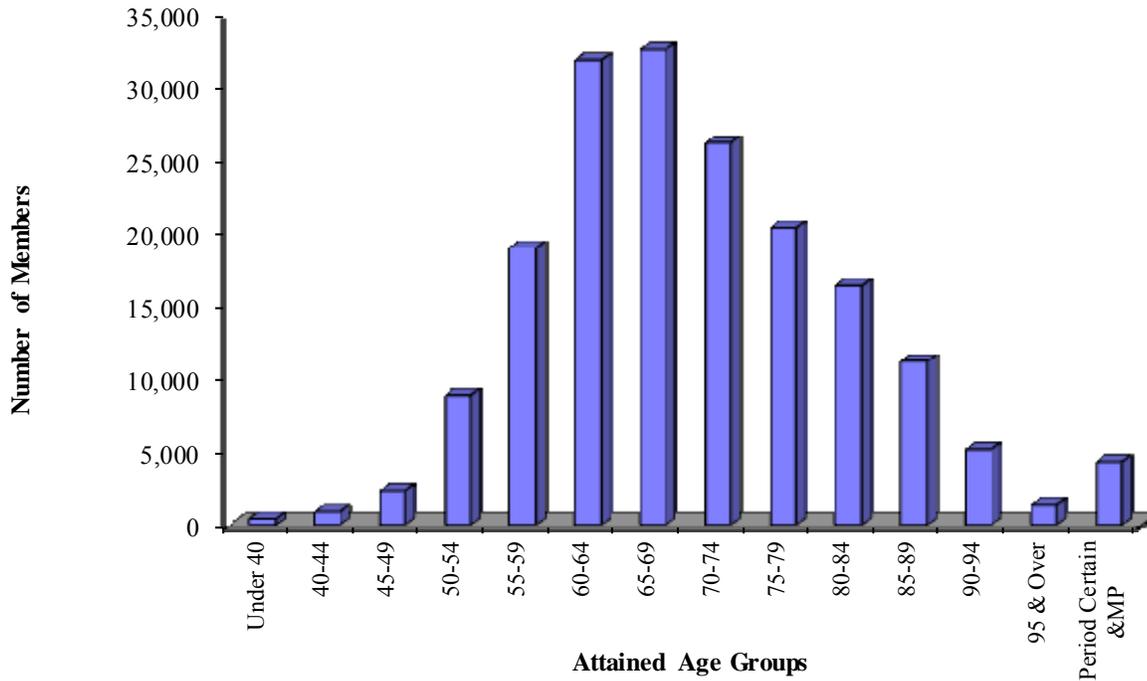


**ANNUITY AND PENSION RESERVE FUND  
RETIREES AND BENEFICIARIES DECEMBER 31, 2012  
CURRENT MONTHLY TOTAL \$ BY ATTAINED AGES**

Attained Ages	Superannuation		Disability		Totals	
	No.	Monthly Total	No.	Monthly Total	No.	Monthly Total
Under 20	13	\$ 7,467			13	\$ 7,467
20-24	12	9,337			12	9,337
25-29	17	12,902	5	\$ 8,589	22	21,491
30-34	28	15,361	64	99,696	92	115,057
35-39	23	10,547	271	460,772	294	471,319
40-44	57	41,056	848	1,813,095	905	1,854,151
45-49	424	1,015,019	1,865	4,659,458	2,289	5,674,477
50-54	5,267	15,810,061	3,607	9,135,288	8,874	24,945,349
55-59	13,859	43,258,306	5,112	12,160,959	18,971	55,419,265
60-64	26,714	68,660,544	5,127	11,287,908	31,841	79,948,452
65-69	29,673	62,063,322	2,860	5,994,766	32,533	68,058,088
70-74	24,678	43,800,543	1,473	2,571,956	26,151	46,372,499
75-79	19,571	30,998,460	772	1,153,116	20,343	32,151,576
80-84	15,957	22,596,898	440	562,151	16,397	23,159,049
85-89	10,954	13,516,442	236	260,518	11,190	13,776,960
90-94	5,085	5,378,693	72	76,904	5,157	5,455,597
95 & Over	1,339	1,256,218	8	6,211	1,347	1,262,429
Period Certain & Money Purchase	4,328	3,925,521			4,328	3,925,521
<b>Totals</b>	<b>157,999</b>	<b>\$312,376,697</b>	<b>22,760</b>	<b>\$50,251,387</b>	<b>180,759</b>	<b>\$362,628,084</b>

**ANNUITY AND PENSION RESERVE FUND  
BENEFITS BEING PAID BY ATTAINED AGES  
DECEMBER 31, 2012**

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**ANNUITY AND PENSION RESERVE FUND  
PERCENT OF RECIPIENTS  
BY AGE GROUPS  
AND YEAR**

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<b>Attained Age Group</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2009</b>	<b>2008</b>	<b>2007</b>	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>	<b>2000</b>	<b>1999</b>	<b>1997</b>
Under 30	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
30-39	0.2%	0.2%	0.3%	0.3%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%
40-49	1.8%	2.0%	2.2%	2.5%	2.7%	2.9%	3.1%	3.3%	3.4%	3.5%	3.5%	3.3%	3.2%	3.1%	2.8%
50-59	15.4%	15.9%	15.9%	16.0%	15.9%	15.9%	16.1%	15.8%	14.7%	13.7%	12.9%	11.7%	10.7%	9.8%	8.6%
60-69	35.5%	34.8%	33.5%	32.6%	31.4%	30.7%	29.6%	28.9%	28.8%	28.6%	28.3%	28.1%	28.2%	28.9%	29.4%
70-79	25.8%	25.4%	25.7%	26.2%	26.7%	27.2%	27.7%	28.5%	29.4%	30.4%	31.5%	32.7%	34.0%	35.5%	37.1%
80-89	15.3%	15.8%	16.6%	16.9%	17.4%	17.7%	17.9%	18.0%	18.2%	18.3%	18.4%	18.7%	18.5%	18.7%	18.4%
90 & Over	3.6%	3.6%	3.6%	3.4%	3.4%	3.3%	3.2%	3.2%	3.2%	3.2%	3.1%	3.1%	3.0%	3.1%	2.9%
Period Certain & MP	2.4%	2.3%	2.2%	2.1%	2.1%	1.9%	1.9%	1.8%	1.8%	1.8%	1.7%	1.8%	1.8%	0.3%	0.2%
<b>TOTALS</b>	<b>100.0%</b>														
Average Age	69.9	69.9	70.0	70.0	70.1	70.1	70.2	70.2	70.4	70.6	70.7	71.0	71.2	71.4	71.6

**STATE DIVISION**  
**SURVIVOR BENEFIT FUND TABULATED BY**  
**TYPE OF BENEFIT BEING PAID AND MONTHLY AMOUNT**  
**DECEMBER 31, 2012**

Group	Number	Current Total	Actuarial Liabilities
<b>S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation</b>			
Men	161	\$ 170,004	\$ 17,815,838
Women	648	950,439	98,212,001
Totals	809	\$1,120,443	\$116,027,839
<b>S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount</b>			
Widower - no child	660	\$ 730,420	\$ 91,834,878
Widower - child	53	53,376	8,845,388
Child's record	135	78,980	5,173,885
Parent	0	0	0
Other	0	0	0
Child only	180	151,988	7,681,976
Subtotals - male	1,028	1,014,764	\$ 113,536,127
Widower - no child	2,175	\$2,507,149	\$310,870,297
Widower - child	132	150,844	26,897,956
Child's record	138	78,982	5,996,183
Parent	2	2,382	144,390
Other	2	1,623	258,589
Child only	197	157,485	7,944,066
Subtotals - female	2,646	2,898,465	352,111,481
Totals	3,674	\$3,913,229	\$465,647,608
<b>Total Benefits Being Paid from Survivor Benefit Fund</b>			
Men	1,189	\$ 1,184,768	\$131,351,965
Women	3,294	3,848,904	450,323,482
<b>Totals</b>	<b>4,483</b>	<b>\$5,033,672</b>	<b>\$581,675,447</b>

**LOCAL GOVERNMENT DIVISION  
SURVIVOR BENEFIT FUND TABULATED BY  
TYPE OF BENEFIT BEING PAID AND MONTHLY AMOUNT  
DECEMBER 31, 2012**

Group	Number	Current Total	Actuarial Liabilities
<b>S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation</b>			
Men	206	\$ 172,081	\$ 16,791,634
Women	1,353	1,518,995	154,427,338
<b>Totals</b>	<b>1,559</b>	<b>1,691,076</b>	<b>171,218,972</b>
<b>S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount</b>			
Widower - no child	1,082	\$ 873,439	\$ 106,456,314
Widower - child	86	70,138	12,065,815
Child's record	228	113,766	8,172,921
Parent	0	0	0
Other	3	1,760	188,849
Child only	321	232,362	15,032,227
Subtotals - male	1,720	1,291,465	141,916,126
Widower - no child	5,089	\$4,581,213	\$549,111,130
Widower - child	296	296,624	51,680,119
Child's record	319	174,229	13,267,817
Parent	2	2,091	121,472
Other	5	3,431	442,561
Child only	348	239,371	12,180,786
Subtotals - female	6,059	5,296,959	626,803,885
<b>Totals</b>	<b>7,779</b>	<b>6,588,424</b>	<b>768,720,011</b>
<b>Total Benefits Being Paid from Survivor Benefit Fund</b>			
Men	1,926	\$1,463,546	\$158,707,760
Women	7,412	6,815,954	781,231,223
<b>Totals</b>	<b>9,338</b>	<b>\$8,279,500</b>	<b>\$939,938,983</b>

**PUBLIC SAFETY DIVISION  
SURVIVOR BENEFIT FUND TABULATED BY  
TYPE OF BENEFIT BEING PAID AND MONTHLY AMOUNT  
DECEMBER 31, 2012**

Group	Number	Current Total	Actuarial Liabilities
<b>S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation</b>			
Men	0	\$ 0	\$ 0
Women	0	0	0
<b>Totals</b>	<b>0</b>	<b>\$ 0</b>	<b>\$ 0</b>
<b>S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount</b>			
Widower - no child	3	\$ 3,632	\$ 307,042
Widower - child	0	0	0
Child's record	3	2,027	69,621
Other	0	0	0
Child only	6	5,331	336,715
Subtotals - male	12	10,990	713,378
Widower - no child	76	\$ 103,947	\$15,664,304
Widower - child	3	3,574	644,468
Child's record	1	765	66,192
Other	7	6,735	424,938
Child only	0	0	0
Subtotals - female	87	115,021	16,799,902
<b>Totals</b>	<b>99</b>	<b>\$ 126,011</b>	<b>\$17,513,280</b>
<b>Total Benefits Being Paid from Survivor Benefit Fund</b>			
Men	12	\$ 10,990	\$ 713,378
Women	87	115,021	16,799,902
<b>Totals</b>	<b>99</b>	<b>\$ 126,011</b>	<b>\$17,513,280</b>

**LAW ENFORCEMENT DIVISION  
SURVIVOR BENEFIT FUND TABULATED BY  
TYPE OF BENEFIT BEING PAID AND MONTHLY AMOUNT  
DECEMBER 31, 2012**

Group	Number	Current Total	Actuarial Liabilities
<b>S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation</b>			
Men	0	\$ 0	\$ 0
Women	59	103,656	12,364,753
<b>Totals</b>	<b>59</b>	<b>\$ 103,656</b>	<b>\$12,364,753</b>
<b>S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount</b>			
Widower - no child	9	\$ 8,896	\$ 1,436,335
Widower - child	1	810	153,023
Child's record	13	7,474	684,370
Other	0	0	0
Child only	19	16,544	1,058,548
Subtotals - male	42	33,724	3,332,276
Widower - no child	141	\$ 145,951	\$20,557,402
Widower - child	21	22,807	4,230,133
Child's record	24	11,835	856,118
Other	17	12,639	336,978
Child only	0	0	0
Subtotals - female	203	193,232	25,980,631
<b>Totals</b>	<b>245</b>	<b>\$ 226,956</b>	<b>\$29,312,907</b>
<b>Total Benefits Being Paid from Survivor Benefit Fund</b>			
Men	42	\$ 33,724	\$ 3,332,276
Women	262	296,888	38,345,384
<b>Totals</b>	<b>304</b>	<b>\$ 330,612</b>	<b>\$41,677,660</b>

**STATE DIVISION  
DEFERRED SURVIVOR BENEFICIARIES  
TABULATED BY GENDER AND DEFERRED AGE  
DECEMBER 31, 2012**

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Group	Number	Current Total	Actuarial Liabilities
Widowers			
Deferred to age 50	0	\$ 0	\$ 0
Deferred to age 62	63	41,236	3,820,413
Deferred to age 65	0	0	0
Total	63	41,236	3,820,413
Widows			
Deferred to age 50	1	887	125,937
Deferred to age 62	168	131,354	10,970,136
Deferred to age 65	1	907	45,093
Total	170	133,148	11,141,166
<b>Totals</b>	<b>233</b>	<b>\$174,384</b>	<b>\$14,961,579</b>

**LOCAL GOVERNMENT DIVISION  
DEFERRED SURVIVOR BENEFICIARIES  
TABULATED BY GENDER AND DEFERRED AGE  
DECEMBER 31, 2012**

---

<b>Group</b>	<b>Number</b>	<b>Current Total</b>	<b>Actuarial Liabilities</b>
Widowers			
Deferred to age 50	0	\$ 0	\$ 0
Deferred to age 62	121	68,569	6,268,493
Deferred to age 65	0	0	0
Total	121	68,569	6,268,493
Widows			
Deferred to age 50	3	2,884	464,568
Deferred to age 62	424	261,822	25,647,300
Deferred to age 65	0	0	0
Total	427	264,706	26,111,868
<b>Totals</b>	<b>548</b>	<b>\$333,275</b>	<b>\$32,380,361</b>

**PUBLIC SAFETY DIVISION  
 DEFERRED SURVIVOR BENEFICIARIES  
 TABULATED BY GENDER AND DEFERRED AGE  
 DECEMBER 31, 2012**

---

<b>Group</b>	<b>Number</b>	<b>Current Total</b>	<b>Actuarial Liabilities</b>
Widowers			
Deferred to age 50	0	\$ 0	\$ 0
Total	0	0	0
Widows			
Deferred to age 50	0	\$ 0	\$ 0
Deferred to age 62	4	1,941	177,563
Total	4	1,941	177,563
<b>Totals</b>	<b>4</b>	<b>\$ 1,941</b>	<b>\$177,563</b>

**LAW ENFORCEMENT DIVISION  
 DEFERRED SURVIVOR BENEFICIARIES  
 TABULATED BY GENDER AND DEFERRED AGE  
 DECEMBER 31, 2012**

---

Group	Number	Current Total	Actuarial Liabilities
Widowers			
Deferred to age 50	0	\$ 0	\$ 0
Deferred to age 62	0	0	0
Total	0	0	0
Widows			
Deferred to age 50	0	\$ 0	\$ 0
Deferred to age 62	11	9,859	973,897
Total	11	9,859	973,897
<b>Totals</b>	<b>11</b>	<b>\$ 9,859</b>	<b>\$973,897</b>

**SURVIVOR BENEFIT FUND**  
**REPORTED ASSETS AND LIABILITIES**  
**DIVISIONS COMBINED**

Valuation Date	Monthly Allowances				\$ Millions		Ratio of Assets to Liabilities
	Current		Deferred		Reported Assets+	Actuarial Liabilities	
	No.	Amount	No.	Amount			
6/30/1979	8,824	\$ 1,914,251	1,039	\$ 146,549	\$ 355.2	\$ 245.1	145 %
12/31/1979	8,971	2,033,403	1,044	155,890	383.0	259.5	148 %
12/31/1980	9,389	2,220,641	1,022	170,246	429.4	285.4	150 %
12/31/1981@	9,629	2,468,950	1,045	191,228	460.6	336.0	137 %
12/31/1982@	9,913	2,654,686	1,006	199,239	499.7	330.6	151 %
12/31/1983	10,132	2,812,639	1,020	225,475	454.7	352.8	129 %
12/31/1984*	11,819	3,119,531	990	248,373	492.2	451.1	109 %
12/31/1985	11,889	3,278,253	979	259,842	532.8	469.6	113 %
12/31/1986	12,054	3,489,915	960	268,931	575.5	451.2	128 %
12/31/1987	12,153	3,656,420	933	279,327	626.1	472.9	132 %
12/31/1988	12,237	3,822,085	941	283,026	490.8	490.8	100 %
12/31/1989@	12,198	4,177,540	941	320,792	525.3	522.1	101 %
12/31/1990	12,182	4,330,622	907	321,218	542.5	537.1	101 %
12/31/1991	12,268	4,528,326	860	314,414	567.9	557.1	102 %
12/31/1992	12,318	4,750,848	852	329,509	589.8	583.3	101 %
12/31/1993	12,437	4,985,681	862	345,937	620.7	607.7	102 %
12/31/1994	12,569	5,207,186	845	347,178	641.5	628.5	102 %
12/31/1995	12,608	5,408,577	866	376,573	668.9	652.4	103 %
12/31/1996@	12,724	5,822,113	878	395,594	711.6	710.6	100 %
12/31/1997	12,856	6,074,566	932	433,430	743.0	740.5	100 %
12/13/1998	13,079	6,337,739	1,060	500,514	780.2	779.6	100 %
12/31/1999#	13,236	7,345,740	989	550,153	801.4	910.9	88 %
12/31/2000	13,317	9,026,315	666	348,886	1,037.4	1,037.4	100 %
12/31/2001@	13,588	9,449,543	993	490,441	1,086.4	1,086.4	100 %
12/31/2002	13,708	9,764,826	902	470,284	1,120.2	1,120.2	100 %
12/31/2003	13,988	10,246,174	842	493,329	1,193.1	1,193.1	100 %
12/31/2004	13,903	10,503,169	858	524,733	1,227.1	1,227.1	100 %
12/31/2005@	14,108	10,948,727	831	528,162	1,289.3	1,289.3	100 %
12/31/2006	14,172	11,333,735	832	508,430	1,332.6	1,332.6	100 %
12/31/2007	14,186	11,714,551	832	510,846	1,375.9	1,375.9	100 %
12/31/2008	14,238	12,122,501	847	526,623	1,425.6	1,425.6	100 %
12/31/2009	14,301	12,576,956	840	527,032	1,479.4	1,479.4	100 %
12/31/2010@	14,407	13,047,857	829	524,242	1,545.7	1,545.7	100 %
12/31/2011	14,370	13,424,237	800	505,111	1,589.7	1,589.7	100 %
12/31/2012	14,224	13,769,795	796	519,459	1,629.3	1,629.3	100 %

@ Revised actuarial assumptions.

\* Benefits increased.

# After benefit changes.

+ Includes certain recommended transfers and accrued transfers.

## RETIREES AND BENEFICIARIES DECEMBER 31, 2012

### HISTORICAL AVERAGES

All Retirees								
December 31	# count	Average Age at Retirement	Average Service at Retirement	Average Pension at Retirement	Average Age on Valuation Date	Average Pension on Valuation Date	Median Pension on Valuation Date	Average FAS at Retirement
2012	195,779	57.4	22.7	\$18,827	69.3	\$23,461	\$20,088	\$37,743
2011	189,849	57.3	22.6	\$18,218	69.3	\$22,611	\$19,212	\$36,552
2010	181,483	57.2	22.4	\$17,379	69.3	\$21,598	\$18,144	\$35,025
2009	174,659	57.2	22.2	\$16,724	69.3	\$20,730	\$17,256	\$33,808
2008	169,016	57.2	22.0	\$15,942	69.4	\$19,750	\$16,284	\$32,401
2007	163,511	57.2	21.9	\$15,318	69.4	\$18,917	\$15,480	\$31,214
2006	159,041	57.3	21.7	\$14,711	69.4	\$18,096	\$14,700	\$29,975
Traditional Plan								
December 31	# count	Average Age at Retirement	Average Service at Retirement	Average Pension at Retirement	Average Age on Valuation Date	Average Pension on Valuation Date	Median Pension on Valuation Date	Average FAS at Retirement
2012	195,622	57.4	22.7	\$18,832	69.3	\$23,468	\$20,088	\$37,741
2011	189,753	57.3	22.6	\$18,221	69.3	\$22,614	\$19,224	\$36,549
2010	181,433	57.2	22.4	\$17,380	69.3	\$21,600	\$18,144	\$35,025
2009	174,637	57.2	22.2	\$16,725	69.3	\$20,731	\$17,256	\$33,808
2008	169,000	57.2	22.0	\$15,942	69.4	\$19,751	\$16,284	\$32,401
2007	163,505	57.2	21.9	\$15,318	69.4	\$18,917	\$15,480	\$31,214
2006	159,039	57.3	21.7	\$14,711	69.4	\$18,096	\$14,700	\$29,974
Combined Plan								
December 31	# count	Average Age at Retirement	Average Service at Retirement	Average Pension at Retirement	Average Age on Valuation Date	Average Pension on Valuation Date	Median Pension on Valuation Date	Average FAS at Retirement
2012	95	64.2	8.5	\$2,785	66.2	\$2,891	\$2,556	\$45,218
2011	58	64.2	7.9	\$2,757	66.0	\$2,828	\$2,202	\$49,751
2010	32	64.3	7.9	\$2,158	65.9	\$2,219	\$1,962	\$40,548
2009	12	65.0	7.6	\$1,590	66.6	\$1,635	\$1,740	\$35,139
2008	12	64.0	7.4	\$1,239	64.8	\$1,260	\$1,092	\$29,454
2007	4	61.1	4.8	\$1,620	62.0	\$1,644	\$1,644	\$43,743
2006	2	62.1	3.8	\$1,656	62.3	\$1,656	\$1,656	\$50,116
Member Directed Plan								
December 31	# count	Average Age at Retirement	Average Service at Retirement	Average Pension at Retirement	Average Age on Valuation Date	Average Pension on Valuation Date	Median Pension on Valuation Date	Average FAS at Retirement
2012	62	NA	NA	NA	NA	NA	NA	NA
2011	38	NA	NA	NA	NA	NA	NA	NA
2010	18	NA	NA	NA	NA	NA	NA	NA
2009	10	NA	NA	NA	NA	NA	NA	NA
2008	4	NA	NA	NA	NA	NA	NA	NA
2007	2	NA	NA	NA	NA	NA	NA	NA
2006	NA							

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**SECTION X**

ACTUARIAL METHODS AND ASSUMPTIONS

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**SUMMARY OF  
ACTUARIAL METHODS AND ASSUMPTIONS USED FOR OPERS  
ACTUARIAL VALUATIONS  
ASSUMPTIONS ADOPTED BY THE RETIREMENT BOARD  
AFTER CONSULTING WITH THE ACTUARY**

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*The individual entry age actuarial cost method of valuation* was used in determining liabilities and normal cost. Differences in the past between assumed experience and actual experience (“actuarial gains and losses”) become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce payments (principal & interest) which are level percent of payroll contributions.

*The actuarial assumptions used* in the valuation are shown in this Section. Assumptions were established following the December 31, 2010 actuarial valuation and updated in conjunction with the passage of Senate Bill 343.

***ECONOMIC ASSUMPTIONS***

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*The investment return rate* assumed in the valuations was 8.00% per year, compounded annually (net after administrative expenses).

*The wage inflation rate* assumed in this valuation was 3.75% per year. The wage inflation rate is defined to be the portion of total pay increases for an individual that are due to macroeconomic forces including productivity, price inflation, and labor market conditions. The wage inflation rate does not include pay changes related to individual merit and seniority effects.

*The price inflation* component of the investment return rate and the wage inflation rate is assumed to be 3.00%.

*The assumed real rate of return* over wage inflation is defined to be the portion of total investment return that is more than the assumed total wage growth rate. Considering other economic assumptions, the 8.00% investment return rate translates to an assumed real rate of return over wage inflation of 4.25%. The assumed real rate of return over price inflation is 5.00%.

*The active member population* (the sum of the Traditional and Combined Plan active members) is assumed to remain constant. For purposes of financing the unfunded actuarial accrued liabilities, total payroll (the sum of the Traditional and Combined Plan active payroll) is assumed to grow at the wage inflation rate – 3.75% per year.

*Pay increase assumptions* for individual active members are shown for sample ages on pages X-8, X-9, X-10 & X-11. Part of the assumption for each age is for merit and/or seniority increase, and the other 3.75% recognizes wage inflation, including price inflation, productivity increases, and other macroeconomic forces.

## NON-ECONOMIC ASSUMPTIONS

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***The post-retirement mortality rates*** used in evaluating age and service and survivor benefit allowances to be paid are based upon the RP-2000 mortality table projected 20 years using Projection Scale AA. For males, 105% of the Combined Healthy male mortality rates are used. For females, 100% of the Combined Healthy female mortality rates are used. Related values are shown on page X-12. The mortality rates used in evaluating disability allowances are based upon the RP-2000 mortality table with no projection. For males, 120% of the Disabled female mortality rates are used set forward 2 years. For females, 100% of the Disabled female mortality rates are used. The mortality rates were established based upon the experience of the OPERS membership in total. Based upon the experience observed during the most recent 5-year period study, it appears that the current rates provide for an approximate 13% margin for future mortality improvement.

***The probabilities of unreduced and reduced age and service retirement*** are shown on pages X-3 through X-7. For State and Local Government members that satisfy the 30-year unreduced retirement condition prior to age 65, the service-based unreduced retirement probabilities are used. For State and Local Government members that satisfy the 30-year unreduced retirement condition on or after age 65, the age-based unreduced retirement probabilities are used.

***The probabilities of withdrawal from service, disability and death-in-service*** are shown for sample ages on pages X-8, X-9, X-10 & X-11. For withdrawal from service it was assumed that members terminating before age 35, members terminating with less than 5 years of service, and a percentage of all other members would withdraw their contributions and forfeit their entitlement to an employer financed benefit. The percentage is 100% at age 35 and is reduced for each year of age after 35, becoming 0% at age 55 (age 45 for law members).

***For purposes of death-in-service and disability benefits***, it is assumed that Combined Plan members will take a benefit from the Traditional Plan, unless a lump sum distribution from the Combined Plan would have a greater value.

***The Funding Value of Defined Benefit Assets*** recognizes assumed investment return fully each year. Differences between actual and assumed investment return are phased in over a closed 4-year period. Funding value is not permitted to deviate from market value by more than 12%. Traditional and Combined Plan retiree health funding values of assets are developed independently beginning with the December 31, 2004 valuation.

***Present assets (cash & investments) at funding value*** are shown on pages II-2 through II-9.

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The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA). Great care was taken in the production of this report, but there may be cases where schedules do not add, or where they do not exactly balance to other related schedules due to rounding.

# PROBABILITIES OF UNREDUCED AGE AND SERVICE RETIREMENT

## Transition Group A

Ages	Percent of Eligible Active Members Retiring Within Next Year			
	State		Local Government	
	Men	Women	Men	Women
65	22%	22%	20%	20%
66	22%	22%	20%	20%
67	20%	20%	15%	20%
68	20%	20%	15%	17%
69	20%	20%	15%	17%
70	20%	20%	15%	17%
71	20%	20%	15%	17%
72	15%	20%	15%	17%
73	15%	20%	15%	17%
74	15%	20%	15%	17%
75	15%	20%	15%	17%
76	15%	20%	15%	17%
77	15%	25%	15%	17%
78	15%	25%	15%	17%
79	15%	25%	15%	22%
80	25%	25%	20%	22%
81	25%	25%	20%	22%
82	25%	25%	20%	22%
83	25%	25%	20%	22%
84	25%	25%	20%	22%
85 & Over	100%	100%	100%	100%
Ref	2094	2095	2096	2097

Ages	Percent of Eligible Active Members Retiring Within Next Year	
	Public Safety	Law Enforcement
	48	
49		20%
50		20%
51		20%
52	30%	20%
53	30%	20%
54	25%	20%
55	25%	20%
56	25%	23%
57	25%	23%
58	20%	25%
59	20%	25%
60	35%	30%
61	35%	25%
62	35%	25%
63	35%	25%
64	35%	25%
65	35%	25%
66	35%	25%
67	35%	25%
68	35%	25%
69	35%	25%
70 & Over	100%	100%
Ref	1334	2084

Service	Percent of Eligible Active Members Retiring Within Next Year			
	State		Local Government	
	Men	Women	Men	Women
30	37%	40%	35%	35%
31	28%	33%	26%	30%
32-39	24%	26%	23%	24%
40	35%	33%	32%	24%
41	35%	33%	32%	24%
42	35%	33%	32%	24%
43	35%	33%	32%	20%
44	35%	33%	32%	20%
45	25%	25%	32%	20%
46	25%	25%	25%	20%
47	25%	25%	25%	20%
48	25%	25%	25%	20%
49	25%	25%	25%	20%
50 & Over	100%	100%	100%	100%
Ref	2091	2093	2098	2099

# PROBABILITIES OF UNREDUCED AGE AND SERVICE RETIREMENT

## Transition Group B

Ages	Percent of Eligible Active Members Retiring Within Next Year			
	State		Local Government	
	Men	Women	Men	Women
66	22%	22%	20%	20%
67	22%	22%	20%	20%
68	20%	20%	15%	20%
69	20%	20%	15%	17%
70	20%	20%	15%	17%
71	20%	20%	15%	17%
72	20%	20%	15%	17%
73	15%	20%	15%	17%
74	15%	20%	15%	17%
75	15%	20%	15%	17%
76	15%	20%	15%	17%
77	15%	20%	15%	17%
78	15%	25%	15%	17%
79	15%	25%	15%	17%
80	15%	25%	15%	22%
81	25%	25%	20%	22%
82	25%	25%	20%	22%
83	25%	25%	20%	22%
84	25%	25%	20%	22%
85	100%	100%	100%	100%
86 & Over	100%	100%	100%	100%
Ref	2094	2095	2096	2097

Ages	Percent of Eligible Active Members Retiring Within Next Year	
	Public Safety	Law Enforcement
	50	
51		20%
52		20%
53		20%
54	25%	20%
55	25%	20%
56	25%	20%
57	25%	20%
58	20%	23%
59	20%	23%
60	35%	25%
61	35%	25%
62	35%	30%
63	35%	25%
64	35%	25%
65	35%	25%
66	35%	25%
67	35%	25%
68	35%	25%
69	35%	25%
70	100%	25%
71		25%
72 & Over		100%
Ref	1334	2084

Service	Percent of Eligible Active Members Retiring Within Next Year			
	State		Local Government	
	Men	Women	Men	Women
32	37%	40%	35%	35%
33	28%	33%	26%	30%
34-41	24%	26%	23%	24%
42	35%	33%	32%	24%
43	35%	33%	32%	24%
44	35%	33%	32%	24%
45	35%	33%	32%	20%
46	35%	33%	32%	20%
47	25%	25%	32%	20%
48	25%	25%	25%	20%
49	25%	25%	25%	20%
50	25%	25%	25%	20%
51	25%	25%	25%	20%
52 & Over	100%	100%	100%	100%
Ref	2091	2093	2098	2099

# PROBABILITIES OF UNREDUCED AGE AND SERVICE RETIREMENT

## Transition Group C

67&5 Condition	Percent of Eligible Active Members Retiring Within Next Year			
	State		Local Government	
	Men	Women	Men	Women
Age				
67	22%	22%	20%	20%
68	22%	22%	20%	20%
69	20%	20%	15%	20%
70	20%	20%	15%	17%
71	20%	20%	15%	17%
72	20%	20%	15%	17%
73	20%	20%	15%	17%
74	15%	20%	15%	17%
75	15%	20%	15%	17%
76	15%	20%	15%	17%
77	15%	20%	15%	17%
78	15%	20%	15%	17%
79	15%	25%	15%	17%
80	15%	25%	15%	17%
81	15%	25%	15%	22%
82	25%	25%	20%	22%
83	25%	25%	20%	22%
84	25%	25%	20%	22%
85	100%	100%	100%	100%
86 & Over	100%	100%	100%	100%
Ref	2094	2095	2096	2097

Ages	Percent of Eligible Active Members Retiring Within Next Year	
	Public Safety	Law Enforcement
	52	
53		20%
54		20%
55		20%
56	25%	20%
57	25%	20%
58	20%	20%
59	20%	20%
60	35%	23%
61	35%	23%
62	35%	25%
63	35%	25%
64	35%	30%
65	35%	25%
66	35%	25%
67	35%	25%
68	35%	25%
69	35%	25%
70	100%	25%
71		25%
72		25%
73		25%
74 & Over		100%
Ref	1334	2084

55&32 Condition	Percent of Eligible Active Members Retiring Within Next Year				
	Year of Eligibility	State		Local Government	
		Men	Women	Men	Women
1	37%	40%	35%	35%	
2	28%	33%	26%	30%	
3-10	24%	26%	23%	24%	
11	35%	33%	32%	24%	
12	35%	33%	32%	24%	
13	35%	33%	32%	24%	
14	35%	33%	32%	20%	
15	35%	33%	32%	20%	
16	25%	25%	32%	20%	
17	25%	25%	25%	20%	
18	25%	25%	25%	20%	
19	25%	25%	25%	20%	
20	25%	25%	25%	20%	
21 & over	100%	100%	100%	100%	
Ref	2091	2093	2098	2099	

## PROBABILITIES OF REDUCED RETIREMENT

### Transition Group A

Ages	Percent of Eligible Active Members Retiring Within Next Year				
	State		Local Government		Public Safety
	Men	Women	Men	Women	
48					8%
49					8%
50					8%
51					8%
52					
53					
54					
55	10%	10%	9%	11%	
56	10%	10%	9%	11%	
57	10%	10%	9%	11%	
58	10%	10%	9%	11%	
59	10%	11%	9%	11%	
60	10%	12%	9%	11%	
61	10%	13%	9%	12%	
62	15%	15%	13%	13%	
63	15%	15%	14%	14%	
64	15%	15%	12%	15%	
Ref	2085	2086	2087	2088	1496

### Transition Group B

Ages	Percent of Eligible Active Members Retiring Within Next Year					
	State		Local Government		Public Safety	Law Enforcement
	Men	Women	Men	Women		
48					8%	8%
49					8%	8%
50					8%	
51					8%	
52					8%	
53					8%	
54						
55	10%	10%	9%	11%		
56	10%	10%	9%	11%		
57	10%	10%	9%	11%		
58	10%	10%	9%	11%		
59	10%	11%	9%	11%		
60	10%	12%	9%	11%		
61	10%	13%	9%	12%		
62	15%	15%	13%	13%		
63	15%	15%	14%	14%		
64	15%	15%	12%	15%		
65	15%	15%	12%	15%		
Ref	2085	2086	2087	2088	469	1496

**PROBABILITIES OF REDUCED RETIREMENT**

**Transition Group C**

Ages	Percent of Eligible Active Members Retiring Within Next Year					
	State		Local Government		Public Safety	Law Enforcement
	Men	Women	Men	Women		
48						8%
49						8%
50						8%
51						8%
52					8%	
53					8%	
54					8%	
55					8%	
56						
57	10%	10%	9%	11%		
58	10%	10%	9%	11%		
59	10%	10%	9%	11%		
60	10%	10%	9%	11%		
61	10%	11%	9%	11%		
62	10%	12%	9%	11%		
63	10%	13%	9%	12%		
64	15%	15%	13%	13%		
65	15%	15%	14%	14%		
66	15%	15%	12%	15%		
Ref	2085	2086	2087	2088	1496	1496

**STATE  
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT  
& INDIVIDUAL PAY INCREASE ASSUMPTIONS**

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year						Pay Increase Assumptions For An Individual Employee		
		Death		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year
		Men	Women	Men	Women	Men	Women			
	0			45.00%	45.00%					
	1			30.00%	30.00%					
	2			17.00%	18.00%					
	3			12.00%	13.00%					
	4			10.00%	10.00%					
25	5 & Over	0.03%	0.01%	7.20%	8.28%	0.12%	0.12%	4.30%	3.75%	8.05%
30		0.04%	0.02%	5.16%	6.66%	0.15%	0.15%	3.00%	3.75%	6.75%
35		0.07%	0.03%	3.82%	4.82%	0.26%	0.26%	2.20%	3.75%	5.95%
40		0.10%	0.04%	2.82%	3.32%	0.42%	0.42%	1.80%	3.75%	5.55%
45		0.14%	0.06%	2.14%	2.50%	0.58%	0.58%	1.40%	3.75%	5.15%
50		0.19%	0.09%	1.90%	2.30%	0.74%	0.74%	1.20%	3.75%	4.95%
55		0.33%	0.17%	1.90%	2.30%	1.10%	1.10%	0.90%	3.75%	4.65%
60		0.61%	0.34%	1.90%	2.30%	1.78%	1.78%	0.70%	3.75%	4.45%
Ref		#506x0.9sb0	#455x0.75sb0	751 #1202x1	755 #1203x1	#385x0.808	#385x0.808	301		

The pay increase assumptions are age based only, and not service based.

**LOCAL GOVERNMENT  
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT  
& INDIVIDUAL PAY INCREASE ASSUMPTIONS**

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year						Pay Increase Assumptions For An Individual Employee		
		Death		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year
		Men	Women	Men	Women	Men	Women			
	0			40.00%	40.00%					
	1			26.00%	26.00%					
	2			16.00%	17.00%					
	3			11.00%	13.00%					
	4			10.00%	10.00%					
25	5 & Over	0.03%	0.01%	6.74%	8.30%	0.11%	0.10%	4.30%	3.75%	8.05%
30		0.04%	0.02%	5.24%	6.54%	0.14%	0.11%	3.00%	3.75%	6.75%
35		0.07%	0.03%	3.96%	4.94%	0.23%	0.17%	2.20%	3.75%	5.95%
40		0.10%	0.04%	2.86%	3.52%	0.36%	0.27%	1.80%	3.75%	5.55%
45		0.14%	0.06%	2.38%	2.76%	0.50%	0.36%	1.40%	3.75%	5.15%
50		0.19%	0.09%	2.30%	2.60%	0.73%	0.53%	1.20%	3.75%	4.95%
55		0.33%	0.17%	2.30%	2.60%	1.08%	0.79%	0.90%	3.75%	4.65%
60	0.61%	0.34%	2.30%	2.60%	1.24%	1.09%	0.70%	3.75%	4.45%	
Ref		#506x0.9sb0	#455x0.75sb0	752 #1205x1	754 #1206x1	#333x0.808	#334x0.808	301		

The pay increase assumptions are age based only, and not service based.

**PUBLIC SAFETY**  
**SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT**  
**& INDIVIDUAL PAY INCREASE ASSUMPTIONS**

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year						Pay Increase Assumptions For An Individual Employee		
		Death		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year
		Men	Women	Men	Women	Men	Women			
	0			19.00%	19.00%					
	1			17.00%	17.00%					
	2			10.00%	10.00%					
	3			10.00%	10.00%					
	4			10.00%	10.00%					
25	5 & Over	0.03%	0.01%	10.00%	10.00%	0.21%	0.34%	6.30%	3.75%	10.05%
30		0.04%	0.02%	8.80%	8.80%	0.38%	0.45%	4.00%	3.75%	7.75%
35		0.07%	0.03%	6.20%	6.20%	0.65%	0.88%	1.60%	3.75%	5.35%
40		0.10%	0.04%	3.50%	3.50%	0.83%	1.22%	0.85%	3.75%	4.60%
45		0.14%	0.06%	2.20%	2.20%	1.01%	1.60%	0.60%	3.75%	4.35%
50		0.19%	0.09%	2.00%	2.00%	1.70%	2.01%	0.50%	3.75%	4.25%
55		0.33%	0.17%	2.00%	2.00%	2.37%	2.92%	0.50%	3.75%	4.25%
60	0.61%	0.34%	2.00%	2.00%	3.01%	3.44%	0.50%	3.75%	4.25%	
Ref		#506x0.9sb0	#455x0.75sb0	756 #1211xl	756 #1211xl	#699x0.86	#743x0.86	303		

The pay increase assumptions are age based only, and not service based.

**LAW ENFORCEMENT**  
**SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT**  
**& INDIVIDUAL PAY INCREASE ASSUMPTIONS**

Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year						Pay Increase Assumptions For An Individual Employee		
		Death		Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next Year
		Men	Women	Men	Women	Men	Women			
	0			16.00%	16.00%					
	1			10.00%	12.00%					
	2			8.00%	8.00%					
	3			6.00%	7.00%					
	4			5.00%	7.00%					
25	5 & Over	0.03%	0.01%	3.54%	3.80%	0.21%	0.34%	6.30%	3.75%	10.05%
30		0.04%	0.02%	2.66%	2.90%	0.38%	0.45%	4.00%	3.75%	7.75%
35		0.07%	0.03%	2.14%	2.30%	0.65%	0.88%	1.60%	3.75%	5.35%
40		0.10%	0.04%	1.48%	1.50%	0.83%	1.22%	0.85%	3.75%	4.60%
45		0.14%	0.06%	1.20%	1.30%	1.01%	1.60%	0.60%	3.75%	4.35%
50		0.19%	0.09%	1.20%	1.20%	1.70%	2.01%	0.50%	3.75%	4.25%
55		0.33%	0.17%	1.20%	1.20%	2.37%	2.92%	0.50%	3.75%	4.25%
60		0.61%	0.34%	1.20%	1.20%	3.01%	3.44%	0.50%	3.75%	4.25%
Ref		#506x0.9sb0	#455x0.75sb0	753 #876x1	445 #575x1	#699x0.86	#743x0.86	303		

The pay increase assumptions are age based only, and not service based.

## SINGLE LIFE RETIREMENT VALUES

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Sample Attained Ages	Present Value of \$1 Monthly for Life Increasing 3.0% Annually (First Increase After 1 Year)		Future Life Expectancy (years)	
	Males	Females	Males	Females
50	\$177.31	\$181.07	32.36	34.63
55	165.65	170.43	27.64	29.88
60	151.34	157.52	23.09	25.31
65	134.71	142.57	18.81	21.02
70	116.28	125.95	14.89	17.06
75	95.74	107.82	11.29	13.47
80	74.64	88.38	8.17	10.23
Ref:	#454x1.05sb0	#455x1sb0		

## MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

### DECEMBER 31, 2012

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<b>Marriage Assumption:</b>	70% of males and 60% of females are assumed to be married for purposes of death-in-service benefits for State and Local members. 90% of males and 90% of females are assumed to be married for purposes of death-in-service benefits for Law members. Male spouses are assumed to be three years older than female spouses for active member valuation purposes. In retired or inactive cases where spouse information is needed, but not available, the three year age difference is also assumed.
<b>Pay Increase Timing:</b>	Beginning of year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
<b>Final Average Salary:</b>	For present value of future benefit purposes, final average salary was calculated in accordance with pay increase assumptions, but was not permitted to fall below the final average salary reported in the data.
<b>Decrement Timing:</b>	Decrements are assumed to occur mid-year.
<b>Eligibility Testing:</b>	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.
<b>Decrement Relativity:</b>	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
<b>Decrement Operation:</b>	Disability and mortality decrements do not operate during the first 5 years of service.
<b>Death after Disability:</b>	Death after disability benefits were approximated by assuming that the disability benefit would be paid as a joint and 35% survivor benefit for people in the original disability plan and as a joint and 20% survivor benefit for people in the post 1992 plan.
<b>Service Credit Accruals:</b>	It is assumed that members accrue one year of service credit per year. A (0.80)% factor is applied to State active member liabilities (other than for refunds) and a (1.00)% factor is applied to Local active member liabilities (other than for refunds) to recognize that a portion of the membership is part time.

## MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

### DECEMBER 31, 2012 (CONCLUDED)

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<b>Miscellaneous Loads:</b>	<ul style="list-style-type: none"><li>• A load of approximately 0.3% of payroll is included in the computed normal cost to recognize subsidized service purchases.</li><li>• Law active accrued liabilities for retirement are reduced by 10% to recognize that total service reported is not entirely Law service, and that non-Law service cannot be used to satisfy Law eligibility conditions.</li><li>• A load of approximately 1% of Combined Plan payroll is included in the Combined Plan computed normal cost to recognize expected administrative expenses.</li><li>• Approximately \$9 million was added to the Combined Plan actuarial accrued liability to reflect assumed future transfers out of Combined Plan assets to repay start-up loans.</li></ul>
<b>Transition Groups Under Senate Bill #343:</b>	A member's transition group (i.e., Group A, Group B, or Group C) was determined as of the valuation date based upon the assumption (for transition group determination only) that active members would continue in active service.
<b>Cost of Living Adjustments:</b>	For individuals retiring after January 7, 2013, cost of living adjustments were assumed to be 3% for calendar years 2013 through 2017 and 2.8% thereafter.
<b>Incidence of Contributions:</b>	Contributions are assumed to be received continuously throughout the year based upon contribution rates presented in the Summary of Benefits, and the actual payroll payable at the time contributions are made.
<b>Benefit Service:</b>	Exact fractional service is used to determine the amount of benefit payable.
<b>Normal Form of Benefit:</b>	The assumed normal form of benefit is a straight life benefit, except where otherwise noted.
<b>Missing Member Data:</b>	Active and inactive records with missing dates of birth were given dates of birth that resulted in an entry age of 30 based upon the reported service. Active and inactive records with missing gender codes were assumed to be female.

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**SECTION XI**  
FINANCIAL PRINCIPLES

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## FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES OF OPERS

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***Promises Made, and To Be Paid For.*** As each year is completed, OPERS in effect hands an “IOU” to each member then acquiring a year of service credit --- the “IOU” says: “The Ohio Public Employees Retirement System owes you one year’s worth of retirement benefits, payments in cash commencing when you qualify for retirement.”

The related *key financial questions* are:

***Which generation of taxpayers contributes the money to cover the IOU?***

***The present taxpayers***, who receive the benefit of the member’s present year of service? ***Or the future taxpayers***, who happen to be in Ohio at the time the IOU becomes a cash demand, years and often decades later?

***The law governing OPERS financing intends that this year’s taxpayers contribute the money to cover the IOUs being handed out this year.*** With this financial objective, ***the employer contribution rate is expected to remain approximately level from generation to generation of taxpayers.***

There are systems which have a design for deferring contributions to future taxpayers. Lured by a lower contribution rate now, they put aside the consequence that the contribution rate must then relentlessly grow to a level much higher than would be required if a level contribution pattern were followed.

An inevitable by-product of the level-cost design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. ***Investment income*** becomes ***the 3<sup>rd</sup> and largest contributor*** for benefits to employees, and is interlocked with the contribution amounts required from employees and employers.

Translated to actuarial terminology, this level-cost objective means that the contribution rates must total at least the following:

Normal Cost (the cost of members' service being rendered this year)

... plus ...

Interest on Unfunded Actuarial Accrued Liabilities (unfunded actuarial accrued liabilities are the difference between: liabilities for service already rendered; and the accrued assets of OPERS).

***Computing Contributions to Support Fund Benefits.*** From a given schedule of benefits and from employee and asset data, the actuary calculates the contribution rates to support the benefits by means of *an actuarial valuation and a funding method.*

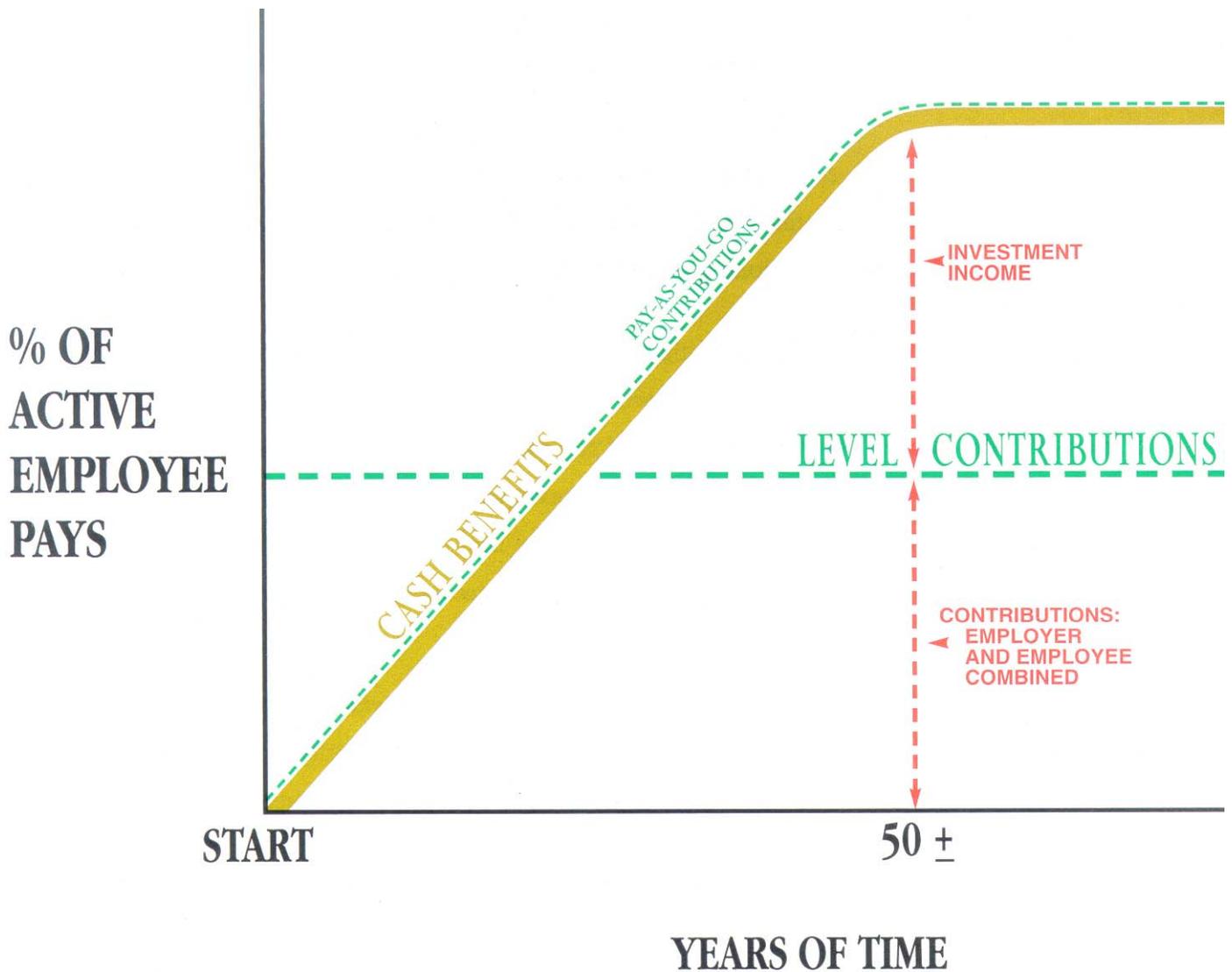
An actuarial valuation has a number of ingredients such as: the rate of investment return which plan assets will earn; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of pay increases; and the assumed age or ages at actual retirement.

In an actuarial valuation, assumptions must be made as to what the above rates will be for the next year and for decades in the future. The assumptions are established by the Retirement Board after receiving the advice of the actuary.

***Reconciling Differences Between Assumed Experience and Actual Experience.*** Once actual experience has occurred and has been observed, it will not coincide exactly with assumed experience, regardless of the skill of the actuary and the many calculations made. The future can not be predicted with 100% precision.

OPERS copes with these continually changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is *continuing adjustments in financial position.*

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**CASH BENEFITS LINE.** This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

**LEVEL CONTRIBUTION LINE.** Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

Economic Risk Areas

- Rates of investment return
- Rates of pay increase
- Changes in active member group size

Non-Economic Risk Areas

- Ages at actual retirement
- Rates of mortality
- Rates of withdrawal of active members (turnover)
- Rates of disability

## THE ACTUARIAL VALUATION PROCESS

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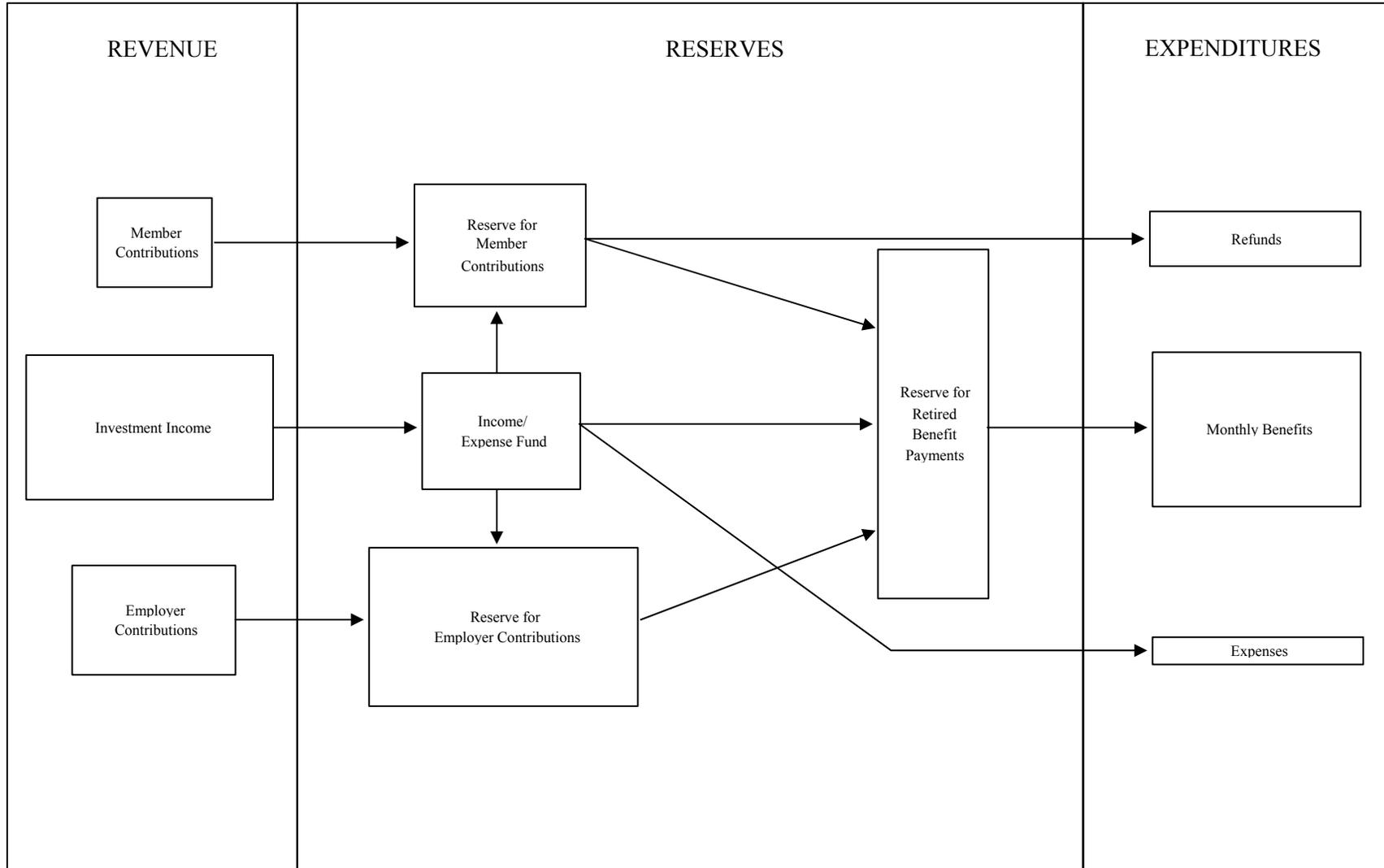
*The financing diagram* on the opposite page shows the relationship between *the two fundamentally different philosophies of paying* for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program) which is thus an *increasing contribution method*; and, the *level contribution method* which attempts to equalize contributions between the generations.

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*The actuarial valuation* is the mathematical process by which the level contribution rate is determined. The activity constituting the valuation may be summarized as follows:

- A. **Census Data**, including:
  - Retired lives now receiving benefits
  - Former employees with vested benefits not yet payable
  - Active employees
  
- B. + **Asset data** (cash & investments)
  
- C. + **Benefit provisions** that establish eligibility and amounts of payments to members
  
- D. + **Assumptions concerning future experience** in various risk areas
  
- E. + **The funding method** for employer contributions (the long-term, planned pattern for employer contributions)
  
- F. + **Mathematically combining the assumptions, the funding method, and the data**
  
- G. = Determination of:
  - Plan Financial Position; and/or
  - New Employer Contribution Rate

# Flow of Money Through the Retirement System



## GLOSSARY

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***Accrued Service.*** The service credited under the plan which was rendered before the date of the actuarial valuation.

***Accumulated Benefit Obligation.*** The actuarial present value of vested and non-vested benefits based on service to date and past and current salary levels.

***Actuarial Accrued Liability.*** The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

***Actuarial Assumptions.*** Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

***Actuarial Cost Method.*** A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

***Actuarial Equivalent.*** A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

***Actuarial Present Value.*** The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

**Actuary.** A person who is trained in the applications of probability and compound interest to problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries (MAAA). The Society of Actuaries is an international research, education and membership organization for actuaries in the life and health insurance, employee benefits, and pension fields. It administers a series of examinations leading initially to Associateship and the designation ASA and ultimately to Fellowship with the designation FSA.

**Amortization.** Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

**Experience Gain (Loss).** A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

**Funding Value of Assets.** The value of current plan assets recognized for valuation purposes. Generally based on a phased-in recognition of all or a portion of market related investment return. Sometimes referred to as Actuarial Value of Assets.

**Normal Cost.** The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

**Plan Termination Liability.** The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a “going concern” basis and is not normally determined in a routine actuarial valuation.

**Reserve Account.** An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

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

## MEANING OF “UNFUNDED ACTUARIAL ACCRUED LIABILITIES”

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“*Actuarial accrued liabilities*” are *the present value of the portions of promised benefits that are not covered by future normal cost contributions* --- a liability has been established (“accrued”) because the service has been rendered but the resulting monthly cash benefit may not be payable until years in the future.

If “actuarial accrued liabilities” at any time exceed the plan’s accrued assets (cash & investments), the difference is “*unfunded actuarial accrued liabilities.*” This is the common condition. If the plan’s assets equaled the plan’s “actuarial accrued liabilities”, the plan would be termed “fully funded.” This is an unusual condition.

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Each time a plan adds a new benefit which applies to service already rendered, an “actuarial accrued liability” is created, which is also an “unfunded actuarial accrued liability” because the plan can’t print instant cash to cover the value of the new benefit promises. Payment for such unfunded actuarial accrued liabilities is spread over a period of years, commonly in the 15-30 year range.

Unfunded actuarial accrued liabilities can occur in another way: if actual plan experience is less favorable than assumed, the difference is added to unfunded actuarial accrued liabilities. For example, in plans where benefits are directly related to an employee’s pay near time of retirement, unfunded actuarial accrued liabilities increased rapidly during the 1970’s because unexpected rates of pay increase created additional actuarial accrued liabilities which could not be matched by reasonable investment results. Most of the unexpected pay increases were the direct result of inflation, which is a very destructive force on financial stability.

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The existence of unfunded actuarial accrued liabilities is not bad but the changes from year to year in amount of unfunded actuarial accrued liabilities are important--- “bad” or “good” or somewhere in between.

Nor are unfunded actuarial accrued liabilities a bill payable immediately, but it is important that policy-makers prevent the amount from becoming unreasonably high and *it is vital for plans to have a sound method for making payments toward them* so that they are controlled.

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## **SECTION XII**

### **GASB REPORTING**

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**This information is presented in draft form for review by the System's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the System's financial statements.**

**SCHEDULE OF DEFINED BENEFIT FUNDING PROGRESS  
FOR COMPLIANCE WITH GASB STATEMENT NO. 25  
(\$ AMOUNTS IN MILLIONS)  
TRADITIONAL, COMBINED, AND MEMBER DIRECTED PLANS**

The schedule below measures the funding progress with respect to the *retirement allowance* portion of OPERS benefits for compliance with GASB Statement No. 25. Assets and liabilities related to post-employment health care benefits are specifically excluded from the schedule. Assets do, however, include market value adjustments.

<b>Valuation Year</b>	<b>Actuarial Accrued Liabilities (AAL)</b>	<b>Valuation Assets</b>	<b>Unfunded Actuarial Accrued Liabilities (UAAL)</b>	<b>Ratio of Assets to AAL</b>	<b>Active Member Payroll</b>	<b>UAAL as a % of Active Member Payroll</b>
1993	\$26,506	\$23,063	\$3,443	87 %	\$7,236	48 %
1994	28,260	25,066	3,194	89 %	7,625	42 %
1995	30,556	27,651	2,905	90 %	7,973	36 %
1995*	30,224	27,651	2,573	91 %	7,973	32 %
1996	32,631	30,534	2,097	94 %	8,340	25 %
1997	34,971	33,846	1,125	97 %	8,640	13 %
1998	37,714	38,360	(646)	102 %	9,017	0 %
1999	43,070	43,060	10	100 %	9,477	0 %
2000	46,347	46,844	(497)	101 %	10,192	0 %
2001	49,095	48,748	347	99 %	10,782	3 %
2001*	47,492	48,748	(1,256)	103 %	10,782	0 %
2002	50,872	43,706	7,166	86 %	11,207	64 %
2003	54,774	46,746	8,028	85 %	11,165	72 %
2004	57,604	50,452	7,152	88 %	11,454	62 %
2005	61,146	54,473	6,673	89 %	11,807	57 %
2005*	62,498	54,473	8,025	87 %	11,807	68 %
2006	66,161	61,296	4,865	93 %	12,175	40 %
2007	69,734	67,151	2,583	96 %	12,583	21 %
2008	73,466	55,315	18,150	75 %	12,801	142 %
2009	76,555	57,629	18,926	75 %	12,548	151 %
2010	79,630	60,600	19,031	76 %	12,450	153 %
2010*	80,485	63,649	16,836	79 %	12,450	135 %
2011	84,530	65,436	19,094	77 %	12,399	154 %
2012	87,105	67,855	19,250	78 %	12,193	158 %
2012#	83,878	67,855	16,023	81 %	12,193	131 %

\* Revised actuarial assumptions.

# After benefit changes.

**SCHEDULE OF DEFINED BENEFIT FUNDING PROGRESS  
FOR COMPLIANCE WITH GASB STATEMENT NO. 25  
(\$ AMOUNTS IN MILLIONS)  
TRADITIONAL PLAN**

The schedule below measures the funding progress with respect to the *retirement allowance* portion of OPERS benefits for compliance with GASB Statement No. 25. Assets and liabilities related to post-employment health care benefits are specifically excluded from the schedule. Assets do, however, include market value adjustments.

<b>Valuation Year</b>	<b>Actuarial Accrued Liabilities (AAL)</b>	<b>Valuation Assets</b>	<b>Unfunded Actuarial Accrued Liabilities (UAAL)</b>	<b>Ratio of Assets to AAL</b>	<b>Active Member Payroll</b>	<b>UAAL as a % of Active Member Payroll</b>
1993	\$26,506	\$23,063	\$3,443	87 %	\$7,236	48 %
1994	28,260	25,066	3,194	89 %	7,625	42 %
1995	30,556	27,651	2,905	90 %	7,973	36 %
1995*	30,224	27,651	2,573	91 %	7,973	32 %
1996	32,631	30,534	2,097	94 %	8,340	25 %
1997	34,971	33,846	1,125	97 %	8,640	13 %
1998	37,714	38,360	(646)	102 %	9,017	0 %
1999	43,070	43,060	10	100 %	9,477	0 %
2000	46,347	46,844	(497)	101 %	10,192	0 %
2001	49,095	48,748	347	99 %	10,782	3 %
2001*	47,492	48,748	(1,256)	103 %	10,782	0 %
2002	50,872	43,706	7,166	86 %	11,207	64 %
2003	54,756	46,737	8,019	85 %	11,056	73 %
2004	57,573	50,430	7,143	88 %	11,313	63 %
2005	61,099	54,433	6,666	89 %	11,633	57 %
2005*	62,447	54,433	8,014	87 %	11,633	69 %
2006	66,089	61,235	4,854	93 %	11,971	41 %
2007	69,639	67,067	2,572	96 %	12,347	21 %
2008	73,346	55,230	18,116	75 %	12,546	144 %
2009	76,407	57,519	18,888	75 %	12,290	154 %
2010	79,459	60,461	18,997	76 %	12,165	156 %
2010*	80,307	63,515	16,792	79 %	12,165	138 %
2011	84,325	65,274	19,052	77 %	12,103	157 %
2012	86,876	67,670	19,206	78 %	11,884	162 %
2012#	83,664	67,670	15,994	81 %	11,884	135 %

\* Revised actuarial assumptions.

# After benefit changes.

**SCHEDULE OF DEFINED BENEFIT FUNDING PROGRESS  
FOR COMPLIANCE WITH GASB STATEMENT NO. 25  
(\$ AMOUNTS IN MILLIONS)  
COMBINED PLAN**

The schedule below measures the funding progress with respect to the *retirement allowance* portion of OPERS benefits for compliance with GASB Statement No. 25. Assets and liabilities related to post-employment health care benefits are specifically excluded from the schedule. Assets do, however, include market value adjustments.

<b>Valuation Year</b>	<b>Actuarial Accrued Liabilities (AAL)</b>	<b>Valuation Assets</b>	<b>Unfunded Actuarial Accrued Liabilities (UAAL)</b>	<b>Ratio of Assets to AAL</b>	<b>Active Member Payroll</b>	<b>UAAL as a % of Active Member Payroll</b>
1993						
1994						
1995						
1995						
1996						
1997						
1998						
1999						
2000						
2001						
2001						
2002						
2003	\$18	\$9	\$9	50 %	\$109	8 %
2004	31	22	9	71 %	141	6 %
2005	47	40	7	85 %	174	4 %
2005*	51	40	11	78 %	174	6 %
2006	72	61	11	85 %	205	5 %
2007	95	84	11	88 %	236	5 %
2008	120	85	35	71 %	255	14 %
2009	148	110	38	74 %	258	15 %
2010	171	138	33	81 %	284	12 %
2010*	177	134	43	76 %	284	15 %
2011	203	161	42	79 %	296	14 %
2012	226	183	43	81 %	310	14 %
2012#	212	183	29	86 %	310	9 %

\* Revised actuarial assumptions.

# After benefit changes.

**SCHEDULE OF DEFINED BENEFIT FUNDING PROGRESS  
FOR COMPLIANCE WITH GASB STATEMENT NO. 25  
(\$ AMOUNTS)  
MEMBER DIRECTED PLAN**

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The schedule below measures the funding progress with respect to the *retirement allowance* portion of OPERS benefits for compliance with GASB Statement No. 25. Assets and liabilities related to post-employment health care benefits are specifically excluded from the schedule. Assets do, however, include market value adjustments.

<b>Valuation Year</b>	<b>Actuarial Accrued Liabilities (AAL)</b>	<b>Valuation Assets</b>	<b>Unfunded Actuarial Accrued Liabilities (UAAL)</b>	<b>Ratio of Assets to AAL</b>	<b>Active Member Payroll</b>	<b>UAAL as a % of Active Member Payroll</b>
1991						
1992						
1993						
1994						
1995						
1995						
1996						
1997						
1998						
1999						
2000						
2001						
2001						
2002						
2003						
2004						
2005						
2005*						
2006						
2007						
2008	\$166,354	\$147,976	\$18,378	89 %	NA	NA
2009	252,670	205,639	47,031	81 %	NA	NA
2010	489,792	438,982	50,810	90 %	NA	NA
2010*	496,004	454,025	41,979	92 %	NA	NA
2011	1,172,900	1,156,151	16,749	99 %	NA	NA
2012	2,665,552	2,523,879	141,673	95 %	NA	NA

\* Revised actuarial assumptions.

**SCHEDULE OF EMPLOYER CONTRIBUTIONS\***  
**FOR COMPLIANCE WITH GASB STATEMENT NO. 25**

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<b>Traditional Plan</b>		
<b>Valuation Date December 31</b>	<b>Year Ended December 31</b>	<b>Annual Required Contributions</b>
2004	2006	8.44%
2005	2008	7.12%
2006	2009	7.13%
2007	2010	7.14%
2008	2011	13.33%
2009	2012	13.64%
2010	2013	13.52%
2011	2014	14.15%
2012	2015	11.16%

<b>Combined Plan</b>		
<b>Valuation Date December 31</b>	<b>Year Ended December 31</b>	<b>Annual Required Contributions</b>
2004	2006	8.33%
2005	2008	7.29%
2006	2009	7.33%
2007	2010	7.22%
2008	2011	10.00%
2009	2012	10.00%
2010	2013	13.00%
2011	2014	14.00%
2012	2015	11.00%

<b>Member Directed Plan</b>		
<b>Valuation Date December 31</b>	<b>Year Ended December 31</b>	<b>Annual Required Contributions</b>
2008	2011	\$ 1,570
2009	2012	\$ 4,019
2010	2013	\$ 4,342
2011	2014	\$ 1,669
2012	2015	\$ 14,121

\* The amounts reported in this schedule do not include contributions for post-employment healthcare benefits.

**SCHEDULE OF UNFUNDED ACTUARIAL ACCRUED LIABILITY@  
FOR COMPLIANCE WITH GASB STATEMENT NO. 25  
TRADITIONAL, COMBINED AND MEMBER DIRECTED PLANS**

	December 31, 2012					
	State Group	Local Group	General Group	Public Safety Group	Law Enforcement Group	Total
<b>Accrued Liabilities</b>						
Active and Inactive Members	\$13,134,608,192	\$19,582,786,220	\$32,717,394,412	\$ 7,482,401	\$1,479,983,148	\$34,204,859,961
Retirees and Beneficiaries	20,141,613,192	27,512,461,014	47,654,074,206	41,476,690	1,977,718,720	49,673,269,616
Total Accrued Liabilities	\$33,276,221,384	\$47,095,247,234	\$80,371,468,618	\$ 48,959,091	\$3,457,701,868	\$83,878,129,577
<b>Assets</b>						
Active and Inactive Members						
EAF*	\$ 444,026,283	\$ 4,566,280,141	\$ 5,010,306,424	\$ (16,856,833)	\$ 439,046,902	\$ 5,432,496,493
ESF	4,785,055,392	7,352,118,460	12,137,173,852	3,035,076	501,446,540	12,641,655,468
Unallocated	40,231,315	62,527,772	102,759,087	43,981	4,640,932	107,444,000
Market Value Adjustment	(53,000)	(93,536)	(146,536)	634	66,858	(79,044)
Total Active and Inactive Assets	\$ 5,269,259,990	\$11,980,832,837	\$17,250,092,827	\$ (13,777,142)	\$945,201,232	\$18,181,516,917
Retirees and Beneficiaries						
A & PR Fund*	\$19,544,976,166	\$26,540,141,670	\$46,085,117,836	\$ 23,785,847	\$1,935,067,163	\$48,043,970,846
SBF Fund*	596,637,026	972,319,344	1,568,956,370	17,690,843	42,651,557	1,629,298,770
Total R&B Assets	\$20,141,613,192	\$27,512,461,014	\$47,654,074,206	\$ 41,476,690	\$1,977,718,720	\$49,673,269,616
Total Assets	\$25,410,873,182	\$39,493,293,851	\$64,904,167,033	\$ 27,699,548	\$2,922,919,952	\$67,854,786,533
Unfunded Actuarial Accrued Liability	\$7,865,348,202	\$7,601,953,383	\$15,467,301,585	\$ 21,259,543	\$ 534,781,916	\$16,023,343,044

@ The amounts reported in this schedule do not include contributions for post-employment healthcare benefits.

\* After reserve transfers.

**SCHEDULE OF UNFUNDED ACTUARIAL ACCRUED LIABILITY@  
FOR COMPLIANCE WITH GASB STATEMENT NO. 25  
TRADITIONAL PLAN**

	December 31, 2012					
	State Group	Local Group	General Group	Public Safety Group	Law Enforcement Group	Total
<b>Accrued Liabilities</b>						
Active and Inactive Members	\$13,047,645,243	\$19,461,320,364	\$32,508,965,607	\$ 7,482,401	\$1,479,983,148	\$33,996,431,156
Retirees and Beneficiaries	20,140,175,171	27,507,903,767	47,648,078,938	41,476,690	1,977,718,720	49,667,274,348
Total Accrued Liabilities	\$33,187,820,414	\$46,969,224,131	\$80,157,044,545	\$ 48,959,091	\$3,457,701,868	\$83,663,705,504
<b>Assets</b>						
Active and Inactive Members						
EAF*	\$ 373,009,779	\$ 4,458,267,561	\$ 4,831,277,340	\$ (16,856,833)	\$ 439,046,902	\$ 5,253,467,409
ESF	4,784,213,523	7,351,210,903	12,135,424,426	3,035,076	501,446,540	12,639,906,042
Unallocated	40,231,315	62,527,772	102,759,087	43,981	4,640,932	107,444,000
Market Value Adjustment	579,590	900,803	1,480,393	634	66,858	1,547,885
Total Active and Inactive Assets	\$ 5,198,034,207	\$11,872,907,039	\$17,070,941,246	\$ (13,777,142)	\$ 945,201,232	\$18,002,365,336
Retirees and Beneficiaries						
A & PR Fund*	\$19,543,538,145	\$26,535,584,423	\$46,079,122,568	\$ 23,785,847	\$1,935,067,163	\$48,037,975,578
SBF Fund*	596,637,026	972,319,344	1,568,956,370	17,690,843	42,651,557	1,629,298,770
Total R&B Assets	\$20,140,175,171	\$27,507,903,767	\$47,648,078,938	\$ 41,476,690	\$1,977,718,720	\$49,667,274,348
Total Assets	\$25,338,209,378	\$39,380,810,806	\$64,719,020,184	\$ 27,699,548	\$2,922,919,952	\$67,669,639,684
Unfunded Actuarial Accrued Liability	\$ 7,849,611,036	\$ 7,588,413,325	\$15,438,024,361	\$ 21,259,543	\$ 534,781,916	\$15,994,065,820

@ The amounts reported in this schedule do not include contributions for post-employment healthcare benefits.

\* After reserve transfers.

**SCHEDULE OF UNFUNDED ACTUARIAL ACCRUED LIABILITY@  
FOR COMPLIANCE WITH GASB STATEMENT NO. 25  
COMBINED PLAN**

	December 31, 2012					
	State Group	Local Group	General Group	Public Safety Group	Law Enforcement Group	Total
<b>Accrued Liabilities</b>						
Active and Inactive Members	\$ 86,962,949	\$121,465,856	\$208,428,805			\$208,428,805
Retirees and Beneficiaries	750,254	2,579,462	3,329,716			3,329,716
Total Accrued Liabilities	\$ 87,713,203	\$124,045,318	\$211,758,521			\$211,758,521
<b>Assets</b>						
Active and Inactive Members						
EAF*	\$71,170,497	\$ 108,081,663	\$179,252,160			\$179,252,160
ESF	744,642	861,830	1,606,472			1,606,472
Unallocated	0	0	0			0
Market Value Adjustment	(617,568)	(947,810)	(1,565,378)			(1,565,378)
Total Active and Inactive Assets	\$71,297,571	\$ 107,995,683	\$179,293,254			\$179,293,254
Retirees and Beneficiaries						
A & PR Fund*	\$ 750,254	\$ 2,579,462	\$ 3,329,716			\$ 3,329,716
SBF Fund*	0	0	0			0
Total R&B Assets	\$ 750,254	\$ 2,579,462	\$ 3,329,716			\$ 3,329,716
Total Assets	\$72,047,825	\$ 110,575,145	\$182,622,970			\$182,622,970
Unfunded Actuarial Accrued Liability	\$ 15,665,378	\$ 13,470,173	\$ 29,135,551			\$ 29,135,551

@ The amounts reported in this schedule do not include contributions for post-employment healthcare benefits.

\* After reserve transfers.

**SCHEDULE OF UNFUNDED ACTUARIAL ACCRUED LIABILITY@  
FOR COMPLIANCE WITH GASB STATEMENT NO. 25  
MEMBER DIRECTED PLAN**

	December 31, 2012					
	State Group	Local Group	General Group	Public Safety Group	Law Enforcement Group	Total
<b>Accrued Liabilities</b>						
Active and Inactive Members	\$ -	\$ -	\$ -			\$ -
Retirees and Beneficiaries	687,767	1,977,785	2,665,552			2,665,552
<b>Total Accrued Liabilities</b>	<b>\$ 687,767</b>	<b>\$ 1,977,785</b>	<b>\$ 2,665,552</b>			<b>\$ 2,665,552</b>
<b>Assets</b>						
Active and Inactive Members						
EAF*	\$ (153,993)	\$ (69,083)	\$ (223,076)			\$ (223,076)
ESF	97,227	45,727	142,954			142,954
Unallocated	0	0	0			0
Market Value Adjustment	(15,022)	(46,529)	(61,551)			(61,551)
<b>Total Active and Inactive Assets</b>	<b>\$ (71,788)</b>	<b>\$ (69,885)</b>	<b>\$ (141,673)</b>			<b>\$ (141,673)</b>
Retirees and Beneficiaries						
A & PR Fund*	\$ 687,767	\$ 1,977,785	\$ 2,665,552			\$ 2,665,552
SBF Fund*	0	0	0			0
<b>Total R&amp;B Assets</b>	<b>\$ 687,767</b>	<b>\$ 1,977,785</b>	<b>\$ 2,665,552</b>			<b>\$ 2,665,552</b>
<b>Total Assets</b>	<b>\$ 615,979</b>	<b>\$ 1,907,900</b>	<b>\$ 2,523,879</b>			<b>\$ 2,523,879</b>
<b>Unfunded Actuarial Accrued Liability</b>	<b>\$ 71,788</b>	<b>\$ 69,885</b>	<b>\$ 141,673</b>			<b>\$ 141,673</b>

@ The amounts reported in this schedule do not include contributions for post-employment healthcare benefits.

\* After reserve transfers.

## REQUIRED SUPPLEMENTARY INFORMATION FOR COMPLIANCE WITH GASB STATEMENT NO. 25

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The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest valuation date follows:

Valuation date	December 31, 2012
Actuarial cost method	Individual entry age
Amortization method for unfunded actuarial accrued liabilities	Level percent closed - Traditional and Combined Level dollar closed - Member Directed
Equivalent Single Amortization Period (Years from December 31, 2014)	
Traditional Plan	21
Combined Plan	0
Member Directed Plan	30
Asset valuation method	4-year smoothed market
Actuarial assumptions:	
Investment rate of return	8.00%
Projected salary increases including wage inflation at 3.75%	4.25% - 10.05%
Cost-of-living adjustments	Current Retirees: 3.0% simple Future Retirees: 3.0% simple for next five years, then 2.8%

	<b>Traditional</b>	<b>Member Combined</b>	<b>Directed</b>	<b>Total</b>
Retirees and beneficiaries receiving benefits	195,622	95	62	195,779
Terminated plan members entitled to but not yet receiving benefits				
Less than 5 years of service	429,898	994	0	430,892
5 or more years of service	32,064	462	0	32,526
Total	461,962	1,456	0	463,418
Active plan members				
Less than 5 years of service	132,178	2,581	0	134,759
5 or more years of service	194,049	4,367	0	198,416
Total	326,227	6,948	0	333,175
Total				
Less than 5 years of service	562,076	3,575	0	565,651
5 or more years of service	421,735	4,924	62	426,721
Total	983,811	8,499	62	992,372

August 29, 2013

Ms. Karen E. Carraher  
Executive Director  
Ohio Public Employees Retirement System  
277 East Town Street  
Columbus, Ohio 43215

**Re: Report of December 31, 2012 Actuarial Valuation**

Dear Karen:

Enclosed are the 20 additional bound copies of the final report.

Sincerely,

A handwritten signature in cursive script that reads "Mita Drazilov".

Mita Drazilov, MAAA, ASA

MD:mrh  
Enclosures

cc: Mr. Tom Heseltine  
Clifton Larson Allen