## GP Gabriel Roeder Smith \& Company Consultants \& Actuaries

## OHIO PUBLIC EMPLOYEES RETIREMENT SYSTEM

ACTUARIAL VALUATION OF DEFINED BENEFIT ALLOWANCES TRADITIONAL, COMBINED AND MEMBER DIRECTED PLANS DECEMBER 31, 2010

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## The Retirement Board

Ohio Public Employees Retirement System
Columbus, Ohio
Ladies and Gentlemen:
The results of the December 31, 2010 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 information provided.

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 Ohio Public Employees Retirement System 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.

The signing actuaries are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,
Banc BIMmp

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## SECTION I

EXECUTIVE SUMMARY

## INTRODUCTION

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, 2010 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:

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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
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There have been no material benefit changes since the last valuation. Actuarial assumptions and methods are consistent with the prior actuarial valuation and are based upon an experience study issued October 30, 2006.

A summary of the primary valuation results as of December 31, 2010 is presented on the following page.

# Summary of Pension Defined Benefit Valuation Results Traditional, Combined, and Member Directed Plans DECEMBER 31 <br> (\$ IN MilliOns) 

|  | 2010 |  |  |  |  |  |  | 2009 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | General |  |  | Law |  |  | Grand Total | Grand <br> Total |
|  | State | Local | Total <br> General | Public <br> Safety | Law <br> Enforcement | Total <br> Law |  |  |
| A. Demographic Information |  |  |  |  |  |  |  |  |
| 1. Active Number Counts |  |  |  |  |  |  |  |  |
| a. Traditional Plan | 115,886 | 210,831 | 326,717 | 88 | 7,702 | 7,790 | 334,507 | 341,777 |
| b. Combined Plan | 2,354 | 4,313 | 6,667 | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | 6,667 | 6,335 |
| c. Total | 118,240 | 215,144 | 333,384 | 88 | 7,702 | 7,790 | 341,174 | 348,112 |
| 2. Active Payroll |  |  |  |  |  |  |  |  |
| a. Traditional Plan | \$ 4,693 | \$ 7,030 | \$ 11,723 | \$ 4 | \$ 439 | \$ 442 | \$ 12,165 | \$ 12,289 |
| b. Combined Plan | $\underline{119}$ | 166 | $\underline{284}$ | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | $\underline{284}$ | $\underline{259}$ |
| c. Total | \$ 4,811 | \$ 7,196 | \$ 12,007 | \$ 4 | \$ 439 | \$ 442 | \$ 12,450 | \$ 12,548 |
| 3. Retired Number Counts | 62,838 | 114,414 | 177,252 | 158 | 4,073 | 4,231 | 181,483 | 174,659 |
| 4. Deferred / Inactive Number Counts | 149,603 | 253,458 | 403,061 | 28 | 920 | 948 | 404,009 | 383,571 |
| 5. Member Directed Active Number Counts | 3,030 | 5,622 | 8,652 | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ | 8,652 | 7,848 |
| 6. Total Number Counts | 333,711 | 588,638 | 922,349 | 274 | 12,695 | 12,969 | 935,318 | 914,190 |


| B. Defined Benefit Assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. Market Value (MV) | \$ | 24,222 | \$ | 36,746 | \$ | 60,968 | \$ | 31 | \$ | 2,650 | \$ | 2,681 | \$ 63,649 | \$ 57,734 |
| 2. Rate of Return on MV |  |  |  |  |  |  |  |  |  |  |  |  | 13.43 \% | 20.08 \% |
| 3. Funding Value (FV) | \$ | 23,061 | \$ | 34,986 | \$ | 58,048 | \$ | 29 | \$ | 2,523 | \$ | 2,552 | \$ 60,600 | \$ 57,629 |
| 4. Rate of Return on FV |  |  |  |  |  |  |  |  |  |  |  |  | 8.26 \% | 6.86 \% |
| 5. Ratio of FV to MV |  |  |  |  |  |  |  |  |  |  |  |  | 95.2\% | 99.8\% |


| C. Defined Benefit Actuarial Results |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. Normal Cost as a \% of Payroll | 15.49\% | 15.15\% | 15.28\% | 19.62\% | 20.50\% | 20.49\% | 15.47\% | 15.43\% |
| 2. Actuarial Accrued Liability (AAL) |  |  |  |  |  |  |  |  |
| a. Active | \$ 13,837 | \$ 20,210 | \$ 34,048 | \$ 7 | \$ 1,510 | \$ 1,517 | \$ 35,564 | \$ 35,716 |
| b. Retired | 16,841 | 23,188 | 40,029 | 36 | 1,651 | 1,688 | 41,717 | 38,578 |
| c. Deferred/Inactive | $\underline{950}$ | 1,373 | 2,323 | 1 | $\underline{26}$ | $\underline{26}$ | 2,349 | 2,261 |
| d. Total | \$ 31,628 | \$ 44,771 | \$ 76,400 | \$ 44 | \$ 3,187 | \$ 3,230 | \$ 79,630 | \$ 76,555 |
| 3. Unfunded AAL (UAAL) | \$ 8,567 | \$ 9,785 | \$ 18,352 | \$ 15 | \$ 664 | \$ 678 | \$ 19,031 | \$ 18,926 |
| 4. Funded Ratio | 72.9 \% | 78.1 \% | 76.0 \% | 66.6 \% | 79.2 \% | 79.0 \% | 76.1 \% | 75.3 \% |
| D. Amortization Years to | 43 | 24 | 30 | N/A | 21 | 22 | 29 | 30 |


| E. Contribution Rates | CY 2013 |  |  |  |  |  |  | CY 2012 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. Pension Contributions |  |  |  |  |  |  |  |  |
| a. Employer Normal Cost | 5.49\% | 5.15\% | 5.28\% | 7.62\% | 7.90\% | 7.89\% | 5.38\% | 5.35\% |
| b. Member Contribution Rate | 10.00\% | 10.00\% | 10.00\% | 12.00\% | 12.60\% | 12.60\% | 10.09\% | 10.08\% |
| c. UAAL Contribution Rate | 7.51\% | 7.85\% | 7.72\% | 9.48\% | 9.20\% | 9.21\% | 7.77\% | 4.80\% |
| d. Total | 23.00\% | 23.00\% | 23.00\% | 29.10\% | 29.70\% | 29.70\% | 23.24\% | 20.23\% |
| 2. Retiree Health Contribution Rate | 1.00\% | 1.00\% | 1.00\% | 1.00\% | 1.00\% | 1.00\% | 1.00\% | 4.00\% |
| 3. Total Employer Contribution Rate | 14.00\% | 14.00\% | 14.00\% | 18.10\% | 18.10\% | 18.10\% | 14.15\% | 14.15\% |

* Based on schedule of employer and member contribution rates shown on page III-3. For the 2010 results, the amortization years shown are from December 31, 2011. For GASB purposes, amortization years are determined based upon scheduled contribution rate increases through 2013. See page XII-10 for additional explanation.

Reported pays for certain State employees were increased by 4\% assuming these employees will experience fewer future furlough days than experienced during 2010.

# Summary of Pension Defined Benefit Valuation Results Traditional Plan <br> DECEMBER 31 <br> (\$ IN MiLLIONS) 

|  | 2010 |  |  |  |  |  | Grand Total | 2009 <br> Grand <br> Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | General |  |  | Law |  |  |  |  |
|  | State | Local | Total General | Public Safety | Law <br> Enforcement | $\begin{aligned} & \hline \text { Total } \\ & \text { Law } \\ & \hline \end{aligned}$ |  |  |
| A. Demographic Information |  |  |  |  |  |  |  |  |
| 1. Active Number Counts | 115,886 | 210,831 | 326,717 | 88 | 7,702 | 7,790 | 334,507 | 341,777 |
| 2. Active Payroll | \$ 4,693 | \$ 7,030 | \$ 11,723 |  | \$ 439 | \$ 442 | \$ 12,165 | \$ 12,288 |
| 3. Retired Number Counts | 62,830 | 114,372 | 177,202 | 158 | 4,073 | 4,231 | 181,433 | 174,637 |
| 4. Deferred / Inactive Number Counts | 149,175 | 252,746 | 401,921 | 28 | 920 | 948 | 402,869 | 382,556 |
| 5. Total Number Counts | 327,891 | 577,949 | 905,840 | 274 | 12,695 | 12,969 | 918,809 | 898,970 |
| B. Defined Benefit Assets |  |  |  |  |  |  |  |  |
| 1. Market Value (MV) <br> 2. Rate of Return on MV | \$ 24,170 | \$ 36,664 | \$ 24,170 | \$ 31 | \$ 2,650 | \$ 2,681 | $\begin{gathered} \$ 63,515 \\ 13.44 \% \end{gathered}$ | $\begin{gathered} \$ 57,630 \\ 20.11 \% \end{gathered}$ |
| 3. Funding Value (FV) <br> 4. Rate of Return on FV | \$ 23,008 | \$ 34,902 | \$ 57,909 | \$ 29 | \$ 2,523 | \$ 2,552 | $\begin{array}{r} 60,461 \\ 8.27 \% \end{array}$ | $\begin{array}{r} \$ 57,519 \\ 6.86 \% \end{array}$ |
| 5. Ratio of FV to MV |  |  |  |  |  |  | 95.2\% | 99.8\% |
| C. Defined Benefit Actuarial Results |  |  |  |  |  |  |  |  |
| 1. Normal Cost as a \% of Payroll | 15.39\% | 15.05\% | 15.18\% | 19.62\% | 20.50\% | 20.49\% | 15.37\% | 15.35\% |
| 2. Actuarial Accrued Liability (AAL) |  |  |  |  |  |  |  |  |
| a. Active | \$ 13,770 | \$ 20,111 | \$ 33,881 | \$ 7 | \$ 1,510 | \$ 1,517 | \$ 35,398 | \$ 35,574 |
| b. Retired | 16,841 | 23,187 | 40,028 | 36 | 1,651 | 1,688 | 41,715 | 38,577 |
| c. Deferred/Inactive | 949 | 1,371 | 2,319 | 1 | $\underline{26}$ | $\underline{26}$ | 2,345 | 2,256 |
| d. Total | \$ 31,559 | \$ 44,669 | \$ 76,228 | \$ 44 | \$ 3,187 | \$ 3,230 | \$ 79,459 | \$ 76,407 |
| 3. Unfunded AAL (UAAL) | \$ 8,551 | \$ 9,767 | \$ 18,319 | \$ 15 | \$ 664 | \$ 678 | \$ 18,997 | \$ 18,888 |
| 4. Funded Ratio | 72.9 \% | 78.1 \% | 76.0 \% | 66.6 \% | 79.2 \% | 79.0 \% | 76.1 \% | 75.3 \% |
| D. Amortization Years to Fully Amortize UAAL * | 45 | 24 | 30 | N/A | 21 | 22 | 30 | 30 |
| E. Contribution Rates |  |  |  | CY 2013 |  |  |  | CY 2012 |
| 1. Pension Contributions |  |  |  |  |  |  |  |  |
| a. Employer Normal Cost | 5.39\% | 5.05\% | 5.18\% | 7.62\% | 7.90\% | 7.89\% | 5.28\% | 5.27\% |
| b. Member Contribution Rate | 10.00\% | 10.00\% | 10.00\% | 12.00\% | 12.60\% | 12.60\% | 10.09\% | 10.08\% |
| c. UAAL Contribution Rate | 7.61\% | 7.95\% | 7.82\% | 9.48\% | 9.20\% | 9.21\% | 7.87\% | 4.88\% |
| d. Total | 23.00\% | 23.00\% | 23.00\% | 29.10\% | 29.70\% | 29.70\% | 23.24\% | 20.23\% |
| 2. Retiree Health Contribution Rate | 1.00\% | 1.00\% | 1.00\% | 1.00\% | 1.00\% | 1.00\% | 1.00\% | 4.00\% |
| 3. Total Employer Contribution Rate | 14.00\% | 14.00\% | 14.00\% | 18.10\% | 18.10\% | 18.10\% | 14.15\% | 14.15\% |

* Based on schedule of employer and member contribution rates shown on page III-3. For the 2010 results, the amortization years shown are from December 31, 2011. For GASB purposes, amortization years are determined based upon scheduled contribution rate increases through 2013. See page XII-10 for additional explanation.

Reported pays for certain State employees were increased by 4\% assuming these employees will experience fewer future furlough days than experienced during 2010.

## Summary of Pension Defined Benefit Valuation Results Combined Plan DECEMBER 31 (\$ IN MiLLIONS)

|  | 2010 |  |  | 2009 |
| :---: | :---: | :---: | :---: | :---: |
|  | General |  | Grand <br> Total | Grand <br> Total |
|  | State | Local |  |  |
| A. Demographic Information |  |  |  |  |
| 1. Active Number Counts | 2,354 | 4,313 | 6,667 | 6,335 |
| 2. Active Payroll | \$ 119 | \$ 166 | \$ 285 | \$ 259 |
| 3. Retired Number Counts | 6 | 26 | 32 | 12 |
| 4. Deferred / Inactive Number Counts | $\underline{428}$ | $\underline{712}$ | 1,140 | 1,015 |
| 5. Total Number Counts | 2,788 | 5,051 | 7,839 | 7,362 |
| B. Defined Benefit Assets |  |  |  |  |
| 1. Market Value (MV) | \$ 52 | \$ 82 | \$ 134 | \$ 103 |
| 2. Rate of Return on MV |  |  | 7.82 \% | 7.80 \% |
| 3. Funding Value (FV) | \$ 54 | \$ 84 | \$ 138 | \$ 110 |
| 4. Rate of Return on FV |  |  | 5.15 \% | 4.58 \% |
| 5. Ratio of FV to MV |  |  | 103\% | 107\% |
| C. Defined Benefit Actuarial Results |  |  |  |  |
| 1. Normal Cost as a \% of Payroll | 17.20\% | 16.87\% | 17.00\% | 16.99\% |
| 2. Actuarial Accrued Liability (AAL) |  |  |  |  |
| a. Active | \$ 68 | \$ 99 | \$ 167 | \$ 143 |
| b. Retired | 0 | 1 | 1 | 0 |
| c. Deferred/Inactive | $\underline{1}$ | $\underline{2}$ | 4 | $\underline{5}$ |
| d. Total | \$ 69 | \$ 102 | \$ 171 | \$ 148 |
| 3. Unfunded AAL (UAAL) | \$ 16 | \$ 18 | \$ 33 | \$ 38 |
| 4. Funded Ratio | 77.4 \% | 82.5 \% | 80.5 \% | 74.4 \% |
| D. Amortization Years to Fully Amortize UAAL * | 2 | 2 | 2 | 3 |
| E. Contribution Rates |  | CY 2013 |  | CY 2011 |
| 1. Total Normal Cost | 17.20\% | 16.87\% | 17.00\% | 16.99\% |
| 2. Member Contribution Rate | 10.00\% | 10.00\% | 10.00\% | 10.00\% |
| 3. Employer Normal Cost | 7.20\% | 6.87\% | 7.00\% | 6.99\% |
| 4. Other Contributions \# | 6.80\% | 7.13\% | 7.00\% | 7.01\% |
| 5. Total Employer Contribution Rate | 14.00\% | 14.00\% | 14.00\% | 14.00\% |

* Based on schedule of employer and member contribution rates shown on page III-3. For the 2010 results, the amortization years shown are from December 31, 2011.
\# Other contributions include; amortization payments for the pension UAAL, mitigating contributions, and contributions to the retiree health care fund.
Reported pays for certain State employees were increased by 4\% assuming these employees will experience fewer future furlough days than experienced during 2010.


# Summary of Pension Defined Benefit Valuation Results MEMBER DIRECTED PLAN DECEMBER 31 

|  | 2010 |  |  |
| :--- | ---: | ---: | ---: |
|  |  | 2009 |  |
| A. Demographic Information | Grand <br> Total |  | Grand <br> Total |
| 1. Active Number Counts |  |  |  |
| 2. Retired Number Counts | 8,652 | 7,848 |  |
| 3. Deferred / Inactive Number Counts | 18 | 10 |  |
| 4. Total Number Counts | 0 |  |  |
| B. Defined Benefit Assets | 8,670 | 7,858 |  |
| 1. Market Value (MV) |  |  |  |
| 2. Rate of Return on MV | $\$ 454,025$ | $\$ 207,934$ |  |
| 3. Funding Value (FV) | $12.98 \%$ | $19.91 \%$ |  |
| 4. Rate of Return on FV | $\$ 438,982$ | $\$ 205,639$ |  |
| 5. Ratio of FV to MV | $8.95 \%$ | $7.42 \%$ |  |

C. Defined Benefit Actuarial Results

1. Normal Cost as a \% of Payroll
2. Actuarial Accrued Liability (AAL)
a. Active
b. Retired
c. Deferred/Inactive
d. Total
3. Unfunded AAL (UAAL)
4. Funded Ratio

## Comments And Conclusion

The December 31, 2010 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 29 years for the System in total.

Experience. The computed amortization period, taking into account all scheduled increases in contribution rates is 29 years, compared with the 30 year period that had been reported in the December 31, 2009 valuation. Measured on a market value basis, investment return was $13.43 \%$. 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 $8.26 \%$ due to partial recognition of 2010 and 2009 market value gains, and continued recognition of the 2008 market value loss. Since the expected return on the funding value of assets is $8 \%$, the actual return of $8.26 \%$ resulted in a decrease to the amortization years. Individual salary increases during 2010 were less than expected on average which improved the amortization period. However, a decrease in active member total payroll during 2010 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 2010 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, 2010 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 \$94.8 Billion* of Defined Benefit Promises for Present Active and Retired Members

DECEMBER 31, 2010
(DOLLAR AMOUNTS IN BILLIONS)


Types of Benefits Paid


* Present value of future benefits - all divisions combined.


## Defined Benefit Active Members in Valuation Group Averages - Comparative Statement

| Valuation Group | Dec. 31 | No. of <br> Active <br> Members | Group Averages |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{gathered} \hline \text { Attained } \\ \text { Age } \\ \hline \end{gathered}$ | Accrued Service Yrs. | Annual Payroll |  |  |
|  |  |  |  |  | Average | Increas |  |
| 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 | 0.2 \% |  |
|  | 2006 | 115,930 | 42.0 | 10.1 | 39,005 | 3.0 \% |  |
|  | 2007 | 118,466 | 41.7 | 9.9 | 39,695 | 1.8 \% |  |
|  | 2008 | 114,925 | 42.0 | 10.1 | 41,590 | 4.8 \% |  |
|  | 2009 | 117,008 | 41.4 | 9.8 | 40,704 | (2.1)\% |  |
|  | 2010 | 118,240 | 41.0 | 9.6 | 40,691 | 0.0 \% |  |
| LOCAL GOVT | 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 | 2.8 \% |  |
|  | 2006 | 237,981 | 43.4 | 9.2 | 30,399 | 1.6 \% |  |
|  | 2007 | 237,225 | 43.6 | 9.3 | 31,354 | 3.1 \% |  |
|  | 2008 | 233,163 | 44.0 | 9.5 | 32,451 | 3.5 \% |  |
|  | 2009 | 223,004 | 44.3 | 9.9 | 32,889 | 1.3 \% |  |
|  | 2010 | 215,144 | 44.6 | 10.1 | 33,447 | 1.7 \% |  |
| 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 | 3.0 \% |  |
|  | 2006 | 8,219 | 40.0 | 12.7 | 50,983 | 3.1 \% |  |
|  | 2007 | 8,385 | 40.2 | 12.8 | 52,816 | 3.6 \% |  |
|  | 2008 | 8,300 | 40.5 | 13.1 | 54,809 | 3.8 \% |  |
|  | 2009 | 8,100 | 41.0 | 13.6 | 55,715 | 1.7 \% |  |
|  | 2010 | 7,790 | 41.2 | 14.0 | 56,801 | 1.9 \% |  |
| TOTAL | 2003 | 353,584 | 42.5 yrs. | 9.4 yrs. | \$ 31,577 | - |  |
|  | 2004 | 355,287 | 42.7 | 9.5 | 32,240 | 2.1 \% |  |
|  | 2005 | 358,804 | 42.8 | 9.5 | 32,906 | 2.1 \% |  |
|  | 2006 | 362,130 | 42.9 | 9.5 | 33,621 | 2.2 \% |  |
|  | 2007 | 364,076 | 42.9 | 9.6 | 34,562 | 2.8 \% |  |
|  | 2008 | 356,388 | 43.2 | 9.8 | 35,919 | 3.9 \% |  |
|  | 2009 | 348,112 | 43.3 | 10.0 | 36,047 | 0.4 \% |  |
|  | 2010 | 341,174 | 43.3 | 10.0 | 36,491 | 1.2 \% |  |

@ 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, 2010




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 341,174 active members. Eventually, 28\% 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. $10 \%$ 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.



## Projected Future Benefit Payments

 on Behalf of Present Retired Lives

## All Divisions

Defined Benefit Active Members in Valuation DECEMBER 31, 2010
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 | 10,997 |  |  |  |  |  |  | 10,997 |
| Tot. Pay | \$66,790,328 |  |  |  |  |  |  | \$66,790,328 |
| Avg. Pay | \$6,074 |  |  |  |  |  |  | \$6,074 |
| 20-24 | 31,542 | 423 |  |  |  |  |  | 31,965 |
| Tot. Pay | \$342,287,304 | \$8,121,245 |  |  |  |  |  | \$350,408,549 |
| Avg. Pay | \$10,852 | \$19,199 |  |  |  |  |  | \$10,962 |
| 25-29 | 21,695 | 5,012 | 291 |  |  |  |  | 26,998 |
| Tot. Pay | \$531,808,919 | \$183,062,304 | \$10,344,112 |  |  |  |  | \$725,215,335 |
| Avg. Pay | \$24,513 | \$36,525 | \$35,547 |  |  |  |  | \$26,862 |
| 30-34 | 14,422 | 10,024 | 4,237 | 139 |  |  |  | 28,822 |
| Tot. Pay | \$416,892,748 | \$423,221,655 | \$191,166,867 | \$6,147,956 |  |  |  | \$1,037,429,226 |
| Avg. Pay | \$28,907 | \$42,221 | \$45,118 | \$44,230 |  |  |  | \$35,994 |
| 35-39 | 11,251 | 8,039 | 9,070 | 2,942 | 106 |  |  | 31,408 |
| Tot. Pay | \$330,877,602 | \$347,780,339 | \$440,113,713 | \$146,245,613 | \$4,782,820 |  |  | \$1,269,800,087 |
| Avg. Pay | \$29,409 | \$43,262 | \$48,524 | \$49,710 | \$45,121 |  |  | \$40,429 |
| 40-44 | 10,896 | 7,696 | 8,688 | 7,922 | 3,388 | 152 |  | 38,742 |
| Tot. Pay | \$310,270,520 | \$324,588,051 | \$417,390,799 | \$433,235,040 | \$182,007,693 | \$8,650,993 |  | \$1,676,143,096 |
| Avg. Pay | \$28,476 | \$42,176 | \$48,042 | \$54,688 | \$53,721 | \$56,914 |  | \$43,264 |
| 45-49 | 10,056 | 7,630 | 8,018 | 6,897 | 8,185 | 3,810 | 216 | 44,812 |
| Tot. Pay | \$273,836,565 | \$306,040,161 | \$368,214,391 | \$357,129,339 | \$466,601,338 | \$215,516,355 | \$11,810,128 | \$1,999,148,277 |
| Avg. Pay | \$27,231 | \$40,110 | \$45,923 | \$51,780 | \$57,007 | \$56,566 | \$54,677 | \$44,612 |
| 50-54 | 9,243 | 7,426 | 8,061 | 6,803 | 7,394 | 6,721 | 2,250 | 47,898 |
| Tot. Pay | \$238,647,375 | \$280,790,122 | \$354,652,765 | \$331,726,833 | \$406,640,192 | \$399,990,533 | \$132,025,711 | \$2,144,473,531 |
| Avg. Pay | \$25,819 | \$37,812 | \$43,996 | \$48,762 | \$54,996 | \$59,514 | \$58,678 | \$44,772 |
| 55-59 | 7,010 | 6,202 | 6,632 | 6,184 | 6,421 | 4,747 | 2,912 | 40,108 |
| Tot. Pay | \$170,647,702 | \$228,131,462 | \$276,168,269 | \$290,498,963 | \$334,282,687 | \$276,493,476 | \$185,837,570 | \$1,762,060,129 |
| Avg. Pay | \$24,343 | \$36,784 | \$41,642 | \$46,976 | \$52,061 | \$58,246 | \$63,818 | \$43,933 |
| 60-64 | 4,702 | 3,958 | 4,289 | 3,942 | 3,960 | 2,723 | 1,732 | 25,306 |
| Tot. Pay | \$95,741,339 | \$133,627,965 | \$174,408,058 | \$180,254,269 | \$202,946,495 | \$149,863,383 | \$113,043,376 | \$1,049,884,885 |
| Avg. Pay | \$20,362 | \$33,761 | \$40,664 | \$45,727 | \$51,249 | \$55,036 | \$65,268 | \$41,488 |
| 65-69 | 2,375 | 1,477 | 1,259 | 1,007 | 963 | 685 | 537 | 8,303 |
| Tot. Pay | \$27,967,706 | \$36,303,259 | \$44,808,795 | \$42,148,609 | \$45,493,540 | \$36,437,844 | \$31,624,818 | \$264,784,571 |
| Avg. Pay | \$11,776 | \$24,579 | \$35,591 | \$41,856 | \$47,241 | \$53,194 | \$58,892 | \$31,890 |
| 70 \& Over | 2,114 | 1,357 | 823 | 544 | 374 | 287 | 316 | 5,815 |
| Tot. Pay | \$14,971,957 | \$16,380,305 | \$16,148,219 | \$14,722,665 | \$13,452,325 | \$11,655,705 | \$16,312,954 | \$103,644,130 |
| Avg. Pay | \$7,082 | \$12,071 | \$19,621 | \$27,064 | \$35,969 | \$40,612 | \$51,623 | \$17,824 |
| Totals | 136,303 | 59,244 | 51,368 | 36,380 | 30,791 | 19,125 | 7,963 | 341,174 |
| Tot. Pay | \$2,820,740,065 | \$2,288,046,868 | \$2,293,415,988 | \$1,802,109,287 | \$1,656,207,090 | \$1,098,608,289 | \$490,654,557 | \$12,449,782,144 |
| Avg. Pay | \$20,695 | \$38,621 | \$44,647 | \$49,536 | \$53,789 | \$57,444 | \$61,617 | \$36,491 |


| Service <br> Years | Active Member Count |  |  | Active Member Pays |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Total | Average |
| 0 | 27,351 | 29,665 | 57,016 | \$ 689,594,926 | \$12,095 |
| 1 | 12,260 | 12,775 | 25,035 | 500,367,801 | 19,987 |
| 2 | 8,778 | 10,908 | 19,686 | 511,558,805 | 25,986 |
| 3 | 8,336 | 10,004 | 18,340 | 563,158,333 | 30,707 |
| 4 | 7,397 | 8,829 | 16,226 | 556,060,196 | 34,270 |
| 5 | 6,239 | 7,794 | 14,033 | 500,817,152 | 35,689 |
| 6 | 5,520 | 6,675 | 12,195 | 467,805,545 | 38,360 |
| 7 | 5,096 | 5,832 | 10,928 | 426,692,404 | 39,046 |
| 8 | 4,859 | 5,833 | 10,692 | 432,013,116 | 40,405 |
| 9 | 5,176 | 6,220 | 11,396 | 460,718,653 | 40,428 |
| 10 | 5,348 | 7,074 | 12,422 | 527,701,347 | 42,481 |
| 11 | 5,192 | 6,096 | 11,288 | 495,396,318 | 43,887 |
| 12 | 4,554 | 5,429 | 9,983 | 455,960,345 | 45,674 |
| 13 | 4,228 | 4,868 | 9,096 | 411,817,429 | 45,275 |
| 14 | 4,001 | 4,578 | 8,579 | 402,540,550 | 46,922 |
| 15 \& Up | 45,889 | 48,370 | 94,259 | 5,047,579,224 | 53,550 |
| Totals | 160,224 | 180,950 | 341,174 | \$12,449,782,144 | \$36,491 |

# SUMMARY OF PENSION EXPERIENCE Traditional, Combined, and Member Directed Plans (\$ IN MILLIONS) 



## Summary of Pension Experience Traditional Plan (\$ IN MILLIONS)



## Summary of Pension Experience Combined Plan (\$ IN Millions)

| Beginning of Year1. Total Accrued Liabilities | 2010 |  | 2009 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Total \$ | \% of Accrued Liabilities | Total \$ | \% of Accrued Liabilities |
|  | \$147.71 | 100.0 \% | \$119.59 | 100.0 \% |
| 2. Valuation Assets | 109.85 | 74.4 \% | 84.68 | 70.8 \% |
| 3. Unfunded Actuarial Accrued Liabilities | \$ 37.86 | 25.6 \% | \$ 34.91 | 29.2 \% |
| Experience Gains (Losses) |  |  |  |  |
| 4. Gains (losses) in economic risk areas <br> a. Pay increases <br> b. Investment return | $\begin{array}{cc} \$ & 2.29 \\ & (3.44) \\ \hline \end{array}$ | $\begin{array}{r} 1.5 \% \\ (2.3) \% \\ \hline \end{array}$ | $\begin{array}{r} \$(3.35) \\ (3.25) \\ \hline \end{array}$ | $\begin{aligned} & (2.8) \% \\ & (2.7) \% \end{aligned}$ |
| c. Total | (1.15) | (0.8)\% | (6.60) | (5.5)\% |
| 5. Gains (losses) from decrement experience <br> a. Service retirement <br> b. Dis ability retirement <br> c. Death-in-service <br> d. Other separations | $\begin{gathered} (0.12) \\ 2.78 \\ 0.04 \\ (1.67) \\ \hline \end{gathered}$ | $\begin{gathered} (0.1) \% \\ 1.9 \% \\ 0.0 \% \\ (1.1) \% \\ \hline \end{gathered}$ | $\begin{gathered} (0.12) \\ 2.07 \\ 0.53 \\ 7.56 \\ \hline \end{gathered}$ | $\begin{array}{r} (0.1) \% \\ 1.7 \% \\ 0.4 \% \\ 6.3 \% \\ \hline \end{array}$ |
| e. Total | 1.03 | 0.7 \% | 10.04 | 8.3 \% |
| 6. Total experience gains (losses): (4c) + (5e) | \$ (0.12) | (0.1)\% | \$ 3.44 | 2.8 \% |
| End of Year |  |  |  |  |
| 7. Total Accrued Liabilities | \$171.06 | 100.0 \% | \$147.71 | 100.0 \% |
| 8. Valuation Assets | 137.63 | 80.5 \% | 109.85 | 74.4 \% |
| 9. Unfunded Actuarial Accrued Liabilities | \$ 33.43 | 19.5 \% | \$ 37.86 | 25.6 \% |

## SECTION II

FINANCIAL INFORMATION

# Financial Data for Calendar Year 2010 <br> Consolidated Asset Reconciliation <br> All Plans, All Divisions 

Beginning Market Value @ 12/31/09
Assets Held in Trust for Benefits
Assets Held for Upcoming Year Budget
Total Beginning Market Value @ 12/31/09

## External Cash Flows:

Revenues:
Member Contributions / Deposits Employer Contributions Retiree Paid Health Care Premiums Refund from HC Vendors (Formulary \& Guarantees) Medicare Part D Reimbursements Other Income / Cancelled Warrant

Total Revenues
Disbursements:
Refunds of Member Accounts Retirement Benefits Retiree Paid Post Retirement Health Care ER Paid Post Retirement Health Care ER Paid Post Retirement Medicare RMA Funding Administrative Expenses

Total Disbursements
Net External Cash Flow
Inter-Plan Activity
Member Balance Transfers \& Plan Switche
DCP Fixed Assets Advanced by TP
Mitigation Rate
Interest on 12/31/07 Advance Balance
Income Applied to Advance (Loan) Balance
Total Inter-Plan Activity
Investment Income:
Interest and Dividends
Other Ordinary Investment Income
Realized Capital Value Changes
External Asset Management Fees
Rounding
Investment Return
Ending Market Value @ 12/31/10

| Traditional Pension Plan | DB Portion of Combined Pension Plan |  | DB Portion of MemberDirected Plan |  | Total Pension Defined Benefit |  | 401(h) <br> Health Care | Member <br> Directed <br> VEBA | Total <br> Health <br> Care |  | DC Portion of Combined Pension Plan |  | Member Directed |  | Total Defined Contribution |  | $\begin{aligned} & \text { Total } \\ & 2010 \\ & \hline \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ 57,529,576,157 | \$ | 103,129,693 | \$ | 207,932 | \$ | 57,632,913,782 | \$11,415,195,274 | \$ 55,784,131 |  | 11,470,979,405 | \$ | 120,255,104 | \$ | 200,380,138 | \$ | 320,635,242 |  | 69,424,528,429 |
| 100,847,800 |  | - |  | - |  | 100,847,800 | - | - |  | - |  | - |  | - |  | - |  | 100,847,800 |
| \$ 57,630,423,957 | \$ | 103,129,693 | \$ | 207,932 | \$ | 57,733,761,582 | \$11,415,195,274 | \$ 55,784,131 | \$ | 11,470,979,405 | \$ | 120,255,104 | \$ | 200,380,138 | \$ | 320,635,242 |  | 69,525,376,229 |
| \$ 1,277,113,073 | \$ | 150,035 | \$ | - | \$ | 1,277,263,108 | \$ | \$ | \$ | - | \$ | 27,449,827 | \$ | 31,446,171 | \$ | 58,895,998 | \$ | 1,336,159,106 |
| 1,151,067,228 |  | 26,476,694 |  | - |  | 1,177,543,922 | 639,403,710 | 13,994,161 |  | 653,397,871 |  | 13,859 |  | 29,570,385 |  | 29,584,244 |  | 1,860,526,037 |
| - |  | - |  | - |  | - | 111,638,313 | - |  | 111,638,313 |  | - |  | - |  | - |  | 111,638,313 |
| - |  | - |  | - |  | - | 143,412,159 | - |  | 143,412,159 |  | - |  | - |  | - |  | 143,412,159.00 |
| - |  | - |  | - |  | - | 72,100,529 | - |  | 72,100,529 |  | - |  | - |  | - |  | 72,100,529.00 |
| 763,943 |  | - |  | - |  | 763,943 | 605,275 | 338 |  | 605,613 |  | 1,267 |  | 1,108 |  | 2,375 |  | 1,371,931 |
| \$ 2,428,944,244 | \$ | 26,626,729 | \$ | - | \$ | 2,455,570,973 | \$ 967,159,986 | \$ 13,994,499 | \$ | 981,154,485 | \$ | 27,464,953 | \$ | 61,017,664 | \$ | 88,482,617 | \$ | 3,525,208,075 |
| \$ (219,808,143) | \$ | $(323,170)$ | \$ | - | \$ | $(220,131,313)$ | \$ | \$ | \$ | - | \$ | $(3,216,874)$ | \$ | $(9,706,528)$ | \$ | $(12,923,402)$ | \$ | $(233,054,715)$ |
| (3,961,217,461) |  | $(61,125)$ |  | $(27,210)$ |  | $(3,961,305,796)$ | - | - |  | - |  | $(67,241)$ |  | $(178,984)$ |  | $(246,225)$ |  | (3,961,552,021) |
| - |  | - |  | - |  | - | $(111,638,313)$ | - |  | $(111,638,313)$ |  | - |  | - |  |  |  | $(111,638,313)$ |
| - |  | - |  | - |  | - | (1,328,361,338) | $(514,332)$ |  | (1,328,875,670) |  | - |  | - |  | - |  | (1,328,875,670) |
| - |  | - |  | - |  | - | $(107,770,173)$ | - |  | $(107,770,173)$ |  | - |  | - |  | - |  | $(107,770,173)$ |
| - |  | - |  | - |  | - | $(13,223,453)$ | - |  | $(13,223,453)$ |  | - |  | - |  | - |  | $(13,223,453)$ |
| $(73,285,712)$ |  | - |  | - |  | $(73,285,712)$ | $(17,278,126)$ | $(889,502)$ |  | $(18,167,628)$ |  | $(2,820,145)$ |  | (2,750,712) |  | $(5,570,857)$ |  | $(97,024,197)$ |
| \$ (4,254,311,316) | \$ | $(384,295)$ | \$ | $(27,210)$ | \$ | (4,254,722,821) | \$ (1,578,271,403) | \$ (1,403,834) | \$ | (1,579,675,237) | \$ | $(6,104,260)$ | \$ | $(12,636,224)$ | \$ | $(18,740,484)$ | \$ | (5,853,138,542) |
| \$ (1,825,367,072) | \$ | 26,242,434 | \$ | $(27,210)$ | \$ | (1,799,151,848) | \$ (611,111,417) | \$ 12,590,665 | \$ | $(598,520,752)$ | \$ | 21,360,693 | \$ | 48,381,440 | \$ | 69,742,133 | \$ | (2,327,930,467) |
| \$ 4,334,961 | \$ | $(2,574,390)$ | \$ | 232,951 | \$ | 1,993,522 | \$ | \$ | \$ | - | \$ | 5,547,573 | \$ | $(1,263,367)$ | \$ | 4,284,206 | \$ | 6,277,728 |
| 42,911 |  | - |  | - |  | 42,911 | - | 26,276 |  | 26,276 |  | $(32,819)$ |  | $(36,368)$ |  | $(69,187)$ |  | - |
| 4,490,352 |  | $(2,100,471)$ |  | - |  | 2,389,881 | - | - |  | - |  | - |  | $(2,389,881)$ |  | $(2,389,881)$ |  | - |
| 1,633,750 |  | - |  | - |  | 1,633,750 | - | $(101,658)$ |  | $(101,658)$ |  | $(606,991)$ |  | $(925,101)$ |  | $(1,532,092)$ |  | - |
| - |  | $(6,275,353)$ |  | - |  | $(6,275,353)$ | - | - |  | - |  | $(1,267)$ |  | $(1,108)$ |  | $(2,375)$ |  | (6,277,728) |
| \$ 10,501,974 | \$ | $(10,950,214)$ | \$ | 232,951 | \$ | $(215,289)$ | \$ | \$ $(75,382)$ | \$ | $(75,382)$ | \$ | 4,906,496 | \$ | $(4,615,825)$ | \$ | 290,671 | \$ | - |
| \$ 1,238,488,921 | \$ | 2,441,451 | \$ | 6,491 | \$ | 1,240,936,863 | \$ 272,736,963 | \$ 1,338,735 | \$ | 274,075,698 | \$ | 767,833 | \$ | 1,260,006 | \$ | 2,027,839 | \$ | 1,517,040,400 |
| 930,794,586 |  | 1,834,890 |  | 4,878 |  | 932,634,354 | 13,803,390 | 1,006,135 |  | 14,809,525 |  | 41 |  | 66 |  | 107 |  | 947,443,986 |
| 5,647,283,276 |  | 11,132,578 |  | 29,597 |  | 5,658,445,451 | 1,240,024,373 | 6,104,389 |  | 1,246,128,762 |  | 20,414,758 |  | 33,500,389 |  | 53,915,147 |  | 6,958,489,360 |
| (117,120,121) |  | $(230,881)$ |  | (614) |  | (117,351,616) | $(10,904,604)$ | $(126,600)$ |  | $(11,031,204)$ |  | $(154,097)$ |  | $(261,901)$ |  | $(415,998)$ |  | (128,798,818) |
| - |  | - |  | - |  | - | - | - |  | - |  | - |  | - |  | - |  | - |
| \$ 7,699,446,662 | \$ | 15,178,038 | \$ | 40,352 | \$ | 7,714,665,052 | \$ 1,515,660,122 | \$ 8,322,659 | \$ | 1,523,982,781 | \$ | 21,028,535 | \$ | 34,498,560 | \$ | 55,527,095 | \$ | 9,294,174,928 |
| \$ 63,515,005,521 | \$ | 133,599,951 | \$ | 454,025 | \$ | 63,649,059,497 | \$12,319,743,979 | \$ 76,622,073 | \$ | 12,396,366,052 | \$ | 167,550,828 | \$ | 278,644,313 | \$ | 446,195,141 |  | 76,491,620,690 |

# Development of Funding Value of Pension Defined Benefit Assets <br> Traditional, Combined, and Member Directed Plans 

| Year Ended December 31 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A. Funding Value Beginning of Year | \$55,315,177,260 | \$57,629,417,411 |  |  |  |
| B. Market Value End of Year | 57,733,761,582 | 63,649,059,497 |  |  |  |
| C. Market Value Beginning of Year | 49,388,551,125 | 57,733,761,582 |  |  |  |
| D. Non-Investment/Administrative Net Cash Flow |  |  |  |  |  |
| D1. Member Contributions | 1,287,421,672 | 1,277,263,108 |  |  |  |
| D2. Employer and other Non-Member Contributions | 1,155,104,391 | 1,180,697,746 |  |  |  |
| D3. Refund of Member Accounts | $(212,456,857)$ | $(220,131,313)$ |  |  |  |
| D4. Retirement Benefits | $(3,661,123,399)$ | (3,961,305,796) |  |  |  |
| D5. Member Balance Transfers | 1,014,381 | 1,993,522 |  |  |  |
| D6. Total Net Cash Flow: D1+D2+D3+D4+D5 | $(1,430,039,812)$ | $(1,721,482,733)$ |  |  |  |
| E. Investment Return |  |  |  |  |  |
| E1. Market Total: B-C-D6 | 9,775,250,269 | 7,636,780,648 |  |  |  |
| E2. Assumed Rate of Return | 8.00\% | 8.00\% |  |  |  |
| E3. Assumed Amount of Return | 4,368,012,588 | 4,541,494,084 |  |  |  |
| E4. Amount Subject to Phase-In: E1-E3 | 5,407,237,681 | 3,095,286,564 |  |  |  |
| F. Phased-In Recognition of Investment Return |  |  |  |  |  |
| F1. Current year: 0.25 xE 4 | 1,351,809,420 | 773,821,641 |  |  |  |
| F2. First Prior Year | $(1,975,542,045)$ | 1,351,809,420 | \$ 773,821,641 |  |  |
| F3. Second Prior Year | - | $(1,975,542,045)$ | 1,351,809,420 | \$ 773,821,641 |  |
| F4. Third Prior Year | - | - | $(1,975,542,045)$ | 1,351,809,421 | \$773,821,641 |
| F5. Total Phase-Ins | (623,732,625) | 150,089,016 | 150,089,016 | 2,125,631,062 | 773,821,641 |
| G. Funding Value End of Year |  |  |  |  |  |
| G1. Preliminary Funding Value End of Year: A+D6+E3+F5 | \$57,629,417,411 | \$60,599,517,778 |  |  |  |
| G2. Upper Corridor Limit: $112 \%$ x B | 64,661,812,972 | 71,286,946,637 |  |  |  |
| G3. Lower Corridor Limit: $88 \% \times \mathrm{B}$ | 50,805,710,192 | 56,011,172,357 |  |  |  |
| G4. Funding Value End of Year | 57,629,417,411 | 60,599,517,778 |  |  |  |
| H. Difference Between Market and Funding Value | 104,344,171 | 3,049,541,719 | 2,899,452,703 | 773,821,641 | - |
| I. Recognized Rate of Return | 6.86 \% | 8.26 \% |  |  |  |
| J. Market Rate of Return | 20.08 \% | 13.43 \% |  |  |  |
| K. Ratio of Funding Value to Market Value | 100 \% | 95 \% |  |  |  |

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 <br> Traditional Plan 

| Year Ended December 31 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A. Funding Value Beginning of Year | \$55,230,348,492 | \$57,519,359,607 |  |  |  |
| B. Market Value End of Year | 57,630,423,957 | 63,515,005,521 |  |  |  |
| C. Market Value Beginning of Year | 49,312,811,154 | 57,630,423,957 |  |  |  |
| D. Non-Investment/Administrative Net Cash Flow |  |  |  |  |  |
| D1. Member Contributions | 1,287,353,244 | 1,277,113,073 |  |  |  |
| D2. Employer and other Non-Member Contributions | 1,133,712,802 | 1,156,321,523 |  |  |  |
| D3. Refund of Member Accounts | (212,209,227) | $(219,808,143)$ |  |  |  |
| D4. Retirement Benefits | (3,661,076,708) | (3,961,217,461) |  |  |  |
| D5. Member Balance Transfers | 1,321,750 | 4,334,961 |  |  |  |
| D6. Total Net Cash Flow: D1+D2+D3+D4+D5 | $(1,450,898,139)$ | $(1,743,256,047)$ |  |  |  |
| E. Investment Return |  |  |  |  |  |
| E1. Market Total:B-C-D6 | 9,768,510,942 | 7,627,837,611 |  |  |  |
| E2. Assumed Rate of Return | 8.00\% | 8.00\% |  |  |  |
| E3. Assumed Amount of Return | 4,360,391,954 | 4,531,818,527 |  |  |  |
| E4. Amount Subject to Phase-In: E1-E3 | 5,408,118,988 | 3,096,019,084 |  |  |  |
| F. Phased-In Recognition of Investment Return |  |  |  |  |  |
| F1. Current y ear: 0.25 xE 4 | 1,352,029,747 | 774,004,771 |  |  |  |
| F2. First Prior Year | $(1,972,512,446)$ | 1,352,029,747 | \$ 774,004,771 |  |  |
| F3. Second Prior Year | - | $(1,972,512,446)$ | 1,352,029,747 | \$ 774,004,771 |  |
| F4. Third Prior Year | - | 0 | (1,972,512,446) | 1,352,029,748 | \$774,004,771 |
| F5. Total Phase-Ins | (620,482,699) | 153,522,072 | 153,522,072 | 2,126,034,519 | 774,004,771 |
| G. Funding Value End of Year |  |  |  |  |  |
| G1. Preliminary Funding Value End of Year: A+D6+E3+F5 | \$57,519,359,608 | \$60,461,444,159 |  |  |  |
| G2. Upper Corridor Limit: $112 \%$ x B | 64,546,074,832 | 71,136,806,184 |  |  |  |
| G3. Lower Corridor Limit: $88 \%$ x B | 50,714,773,082 | 55,893,204,858 |  |  |  |
| G4. Funding Value End of Year | 57,519,359,608 | 60,461,444,159 |  |  |  |
| H. Difference Between Market and Funding Value | 111,064,349 | 3,053,561,362 | 2,900,039,290 | 774,004,771 | - |
| I. Recognized Rate of Return | 6.86 \% | 8.27 \% |  |  |  |
| J. Market Rate of Return | 20.11 \% | 13.44 \% |  |  |  |
| K. Ratio of Funding Value to Market Value | 100.00 \% | 95.00 \% |  |  |  |

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 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A. Funding Value Beginning of Year | \$ 84,680,792 | \$109,852,165 |  |  |  |
| B. Market Value End of Year | 103,129,693 | 133,599,951 |  |  |  |
| C. Market Value Beginning of Year | 75,607,850 | 103,129,693 |  |  |  |
| D. Non-Investment/Administrative Net Cash Flow |  |  |  |  |  |
| D1. Member Contributions | 68,428 | 150,035 |  |  |  |
| D2. Employer and Other Non-Member Contributions | 21,391,589 | 24,376,223 |  |  |  |
| D3. Refund of Member Accounts | $(247,630)$ | $(323,170)$ |  |  |  |
| D4. Retirement Benefits | $(30,566)$ | $(61,125)$ |  |  |  |
| D5. Member Balance Transfers | $(368,515)$ | (2,574,390) |  |  |  |
| D6. Total Net Cash Flow: D1+D2+D3+D4+D5 | 20,813,306 | 21,567,573 |  |  |  |
| E. Investment Return |  |  |  |  |  |
| E1. Market Total:B-C-D6 | 6,708,537 | 8,902,685 |  |  |  |
| E2. Assumed Rate of Return | 8.00\% | 8.00\% |  |  |  |
| E3. Assumed Amount of Return | 7,606,996 | 9,650,876 |  |  |  |
| E4. Amount Subject to Phase-In: E1-E3 | $(898,459)$ | $(748,191)$ |  |  |  |
| F. Phased-In Recognition of Investment Return |  |  |  |  |  |
| F1. Current year: 0.25 xE 4 | $(224,615)$ | $(187,048)$ |  |  |  |
| F2. First Prior Year | $(3,024,314)$ | $(224,615)$ | $(\$ 187,048)$ |  |  |
| F3. Second Prior Year | - | $(3,024,314)$ | $(224,615)$ | (\$187,048) |  |
| F4. Third Prior Year | - | - | $(3,024,314)$ | $(224,614)$ | $(\$ 187,047)$ |
| F5. Total Phase-Ins | $(3,248,929)$ | (3,435,977) | $(3,435,977)$ | $(411,662)$ | $(187,047)$ |
| G. Funding Value End of Year |  |  |  |  |  |
| G1. Preliminary Funding Value End of Year: A+D6+E3+F5 | \$109,852,165 | \$137,634,637 |  |  |  |
| G2. Upper Corridor Limit: $112 \% \times \mathrm{B}$ | 115,505,256 | 149,631,945 |  |  |  |
| G3. Lower Corridor Limit: 88\% x B | 90,754,130 | 117,567,957 |  |  |  |
| G4. Funding Value End of Year | \$109,852,165 | \$137,634,637 |  |  |  |
| H. Difference Between M arket and Funding Value | $(6,722,472)$ | $(4,034,686)$ | $(598,709)$ | $(187,047)$ | - |
| I. Recognized Rate of Return | 4.58 \% | 5.15 \% |  |  |  |
| J. Market Rate of Return | 7.80 \% | 7.82 \% |  |  |  |
| K. Ratio of Funding Value to Market Value | 107.00 \% | 103.00 \% |  |  |  |

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 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A. Funding Value Beginning of Year | \$147,976 | \$205,639 |  |  |  |
| B. Market Value End of Year | 207,932 | 454,025 |  |  |  |
| C. Market Value Beginning of Year | 132,121 | 207,932 |  |  |  |
| D. Non-Investment/Administrative Net Cash Flow <br> D1. Member Contributions <br> D2. Employer and Other Non-Member Contributions <br> D3. Refund of Member Accounts <br> D4. Retirement Benefits <br> D5. Member Balance Transfers <br> D6. Total Net Cash Flow: D1+D2+D3+D4+D5 | $\begin{gathered} (16,125) \\ 61,146 \\ 45,021 \end{gathered}$ | $\begin{gathered} - \\ - \\ - \\ (27,210) \\ 232,951 \\ 205,741 \end{gathered}$ |  |  |  |
| E. Investment Return <br> E1. Market Total:B-C-D6 <br> E2. Assumed Rate of Return <br> E3. Assumed Amount of Return <br> E4. Amount Subject to Phase-In: E1-E3 | $\begin{gathered} 30,790 \\ 8.00 \% \\ 13,639 \\ 17,151 \end{gathered}$ | $\begin{gathered} 40,352 \\ 8.00 \% \\ 24,681 \\ 15,671 \end{gathered}$ |  |  |  |
| F. Phased-In Recognition of Investment Return <br> F1. Current y ear: $0.25 x \mathrm{x} 4$ <br> F2. First Prior Year <br> F3. Second Prior Year <br> F4. Third Prior Year <br> F5. Total Phase-Ins | $\begin{gathered} 4,288 \\ (5,285) \\ - \\ - \\ \hline(997) \end{gathered}$ | $\begin{gathered} 3,918 \\ 4,288 \\ (5,285) \\ \hline- \\ \hline 2,921 \end{gathered}$ | $\begin{array}{r} \$ 3,918 \\ 4,288 \\ (5,285) \\ \hline 2,921 \end{array}$ | $\begin{array}{r} \$ 3,918 \\ 4,287 \\ \hline 8,205 \end{array}$ | $\begin{array}{r}\text { \$3,917 } \\ \hline 3,917\end{array}$ |
| G. Funding Value End of Year <br> G1. Preliminary Funding Value End of Year: A+D6+E3+F5 <br> G2. Upper Corridor Limit: $112 \%$ x B <br> G3. Lower Corridor Limit: $88 \%$ x B <br> G4. Funding Value End of Year | $\begin{array}{r} \$ 205,639 \\ 232,884 \\ 182,980 \\ \$ 205,639 \end{array}$ | $\begin{array}{r} \$ 438,982 \\ 508,508 \\ 399,542 \\ \$ 438,982 \end{array}$ |  |  |  |
| H. Difference Between Market and Funding Value | 2,293 | 15,043 | 12,122 | 3,917 | - |
| I. Recognized Rate of Return | 7.42 \% | 8.95 \% |  |  |  |
| J. Market Rate of Return | 19.91 \% | 12.98 \% |  |  |  |
| K. Ratio of Funding Value to Market Value | 99.00 \% | 97.00 \% |  |  |  |

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, 2010 <br> Traditional, Combined and Member Directed Plans

(1) Employer Accumulation Fund
(a) Allocated Amounts
(b) Unallocated Amounts Allocated by 1(a)
(c) Total EAF
(2) Employee Savings Fund
(a) Total Member Deposits
(b) ESF Allocated by (2)(a)
(3) Retired Assets
(a) Allocated Amounts
(b) Additional and DC Annuities
(c) Total Retiree Assets
(4) Subtotal: (1)(c)+ (2)(b)+ (3)(c)
(5) Assets Held For Upcoming Year Budget Allocated According to (4)
(6) Total Employer + Employee Defined Benefit Assets: (4)+(5)
(7) Market Value Adjustment Allocated According to (6)
(8) Funding Value of Defined Benefit Assets (6)+(7)

| Total DB System |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| State | Local | Public <br> Safety | Law Enforcement | Total |
| $\begin{array}{r} \$ 2,938,277,124 \\ (61,604,877) \end{array}$ | $\begin{array}{r} \$ 6,707,535,877 \\ (141,324,823) \end{array}$ | $\begin{gathered} (\$ 7,886,296) \\ 168,299 \end{gathered}$ | $\begin{array}{r} \$ 534,321,623 \\ (11,402,759) \end{array}$ | $\begin{array}{r} \$ 10,172,248,328 \\ (214,164,160) \end{array}$ |
| \$ 2,876,672,247 | \$ 6,566,211,054 | (\$7,717,997) | \$ 522,918,864 | \$ 9,958,084,168 |
| \$ 5,186,088,786 | \$ 7,983,277,059 | \$ 2,840,146 | \$ 525,526,281 | \$13,697,732,272 |
| \$ 4,594,406,861 | \$ 7,072,373,443 | \$ 2,515,977 | \$ 465,543,707 | \$12,134,839,988 |
| \$16,711,724,384 | \$23,007,303,130 | \$35,838,586 | \$1,657,514,675 | \$41,412,380,775 |
| 337,395 | 42,156,376 | $\underline{0}$ | $\underline{0}$ | 42,493,771 |
| \$16,712,061,779 | \$23,049,459,506 | \$35,838,586 | \$1,657,514,675 | \$41,454,874,546 |
| \$24,183,140,887 | \$36,688,044,003 | \$30,636,566 | \$2,645,977,246 | \$63,547,798,702 |
| 38,533,299 | 58,453,406 | 48,921 | 4,225,169 | 101,260,795 |
| \$24,221,674,186 | \$36,746,497,409 | \$30,685,487 | \$2,650,202,415 | \$63,649,059,497 |
| (1,160,419,505) | $(1,760,235,257)$ | (1,475,242) | (127,411,715) | (3,049,541,719) |
| \$23,061,254,681 | \$34,986,262,152 | \$29,210,245 | \$2,522,790,700 | \$60,599,517,778 |

## Allocation of Funding Value of Assets Among Divisions <br> DECEMBER 31, 2010 <br> Traditional Plan

(1) Employer Accumulation Fund (EAF)
(a) Allocated Amounts
(b) Unallocated Amounts Allocated by (1)(a)
(c) Total EAF
(2) Employee Savings Fund (ESF)
(a) Total Member Deposits (Accumulated by Determined Division)
(b) ESF Allocated by (2)(a)
(3) Retired Assets
(a) Allocated Amounts
(b) Additional Annuities
(c) Total Retiree Assets
(4) Subtotal: (1)(c)+ (2)(b)+ (3)(c)
(5) Assets Held For Upcoming Year Budget Allocated According to (4)
(6) Total Employer + Employee Defined Benefit Assets: (4)+(5)
(7) Market Value Adjustment Allocated According to (6)
(8) Funding Value of Defined Benefit Assets (6)+(7)

| State | Local | Public <br> Safety | Law <br> Enforcement | Total |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r} \$ 2,886,908,971 \\ (61,608,452) \end{array}$ | $\begin{array}{r} \$ 6,627,046,978 \\ (141,425,347) \end{array}$ | $\begin{gathered} (\$ 7,886,296) \\ 168,299 \end{gathered}$ | $\begin{array}{rl} \$ & 534,321,623 \\ (11,402,759) \end{array}$ | $\begin{array}{r} \$ 10,040,391,276 \\ (\underline{(214,268,259)} \end{array}$ |
| \$ 2,825,300,519 | \$ 6,485,621,631 | (\$7,717,997) | \$ 522,918,864 | \$ 9,826,123,017 |
| \$ 5,185,867,094 | \$ 7,982,999,318 | \$ 2,840,146 | \$ 525,526,281 | \$13,697,232,839 |
| \$ 4,593,962,052 | \$ 7,071,834,906 | \$ 2,515,977 | \$ 465,543,707 | \$12,133,856,642 |
| \$16,711,563,368 | \$23,006,354,667 | \$35,838,586 | \$1,657,514,675 | \$41,411,271,296 |
| 337,395 | 42,156,376 | $\underline{0}$ | $\underline{0}$ | 42,493,771 |
| \$16,711,900,763 | \$23,048,511,043 | \$35,838,586 | \$1,657,514,675 | \$41,453,765,067 |
| \$24,131,163,334 | \$36,605,967,580 | \$30,636,566 | \$2,645,977,246 | \$63,413,744,726 |
| 38,533,299 | 58,453,406 | 48,921 | 4,225,169 | 101,260,795 |
| \$24,169,696,633 | \$36,664,420,986 | \$30,685,487 | \$2,650,202,415 | \$63,515,005,521 |
| (1,161,987,646) | (1,762,686,759) |  |  |  |
| \$23,007,708,987 | \$34,901,734,227 | \$29,210,245 | \$2,522,790,700 | \$60,461,444,159 |

## Allocation of Funding Value of Assets Among Divisions <br> DECEMBER 31, 2010 <br> Combined Plan

(1) Employer Accumulation Fund
(a) Allocated Amounts
(b) Unallocated Amounts Allocated by (1)(a)
(c) Total EAF

|  | CombinedPlan |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Public | Law |  |
| State | Local | Safety | Enforcement | Total |

(2) Employee Savings Fund
(a) Total Member Deposits (Reported by Division)
(b) ESF Allocated by (2)(a)
(3) Retired Assets
(a) Allocated Amounts
(b) DC Annuities
(c) Total Retiree Assets
(4) Subtotal: (1)(c)+ (2)(b)+ (3)(c)
(5) Assets Held For Upcoming Year Budget Allocated According to (4)
(6) Total Employer + Employee Defined Benefit Assets: (4)+(5)
(7) Market Value Adjustment Allocated According to (6)
(8) Funding Value of Defined Benefit Assets (6)+(7)



11,673
\$51,369,655
\$ 220,351
\$ 263,675
\$ 531,455
\$ 505,240
0
\$ 505,240
\$81,647,163
\$51,952,788
$\underline{0} \quad \underline{0}$
\$81,647,16
2,465,724
\$84,112,887
\$131,950,133
29,990
\$131,980,123
\$ 484,026
\$ 975,589
\$ 644,239
$\underline{0}$
\$ 644,239
\$133,599,951
\$133,599,951
4,034,686
\$137,634,637

## Allocation of Funding Value of Assets Among Divisions <br> DECEMBER 31, 2010 <br> Member Directed Plan

(1) Employer Accumulation Fund
(a) Allocated Amounts
(b) Unallocated Amounts Allocated by 1(a)
(c) Total EAF
(2) Employee Savings Fund
(a) Total Member Deposits
(b) ESF Allocated by (2)(a)
(3) Retired Assets
(a) Allocated Amounts
(b) DC Annuities
(c) Total Retiree Assets
(4) Subtotal: (1)(c)+ (2)(b)+ (3)(c)
(5) Assets Held For Upcoming Year Budget Allocated According to (4)
(6) Total Employer + Employee Defined Benefit Assets: (4)+(5)
(7) Market Value Adjustment Allocated According to (6)
(8) Funding Value of Defined Benefit Assets (6)+(7)

| Member Directed Plan |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| State |  | Local |  | Public <br> Safety | Law <br> Enforcement | Total |  |
| \$ | 10,171 | \$ | $(103,252)$ | \$0 | \$0 | \$ | $(93,081)$ |
|  | $(8,098)$ |  | 82,207 | $\underline{0}$ | $\underline{0}$ |  | 74,109 |
| \$ | 2,073 | \$ | $(21,045)$ | \$0 | \$0 | \$ | $(18,972)$ |
| \$ | 1,341 | \$ | 14,066 | \$0 | \$0 | \$ | 15,407 |
| \$ | 675 | \$ | 7,082 | \$0 | \$0 | \$ | 7,757 |
| \$ | 22,017 | \$ | 443,223 | \$0 | \$0 | \$ | 465,240 |
|  | $\underline{\square}$ |  | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ |  | $\underline{0}$ |
| \$ | 22,017 | \$ | 443,223 | \$0 | \$0 | \$ | 465,240 |
| \$ | 24,765 | \$ | 429,260 | \$0 | \$0 | \$ | 454,025 |
|  | $\underline{0}$ |  | $\underline{0}$ | $\underline{0}$ | $\underline{0}$ |  | $\underline{0}$ |
| \$ | 24,765 | \$ | 429,260 | \$0 | \$0 | \$ | 454,025 |
|  | (821) |  | (14,222) | $\underline{0}$ | $\underline{0}$ |  | $(15,043)$ |
| \$ | 23,944 | \$ | 415,038 | \$0 | \$0 | \$ | 438,982 |

Comparison of Rates of Return


Comparison of Defined Benefit Pension Asset Values


# SECTION III <br> BENEFITS AND CONDITIONS EVALUATED 

## Benefits and Conditions Evaluated

## 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 professionallymanaged OPERS Investment Options.

## TERMS

Final average salary ("FAS") means the average of the annual earnings for the 3 highest calendar years of compensation.

Participant Contribution Account is the account for each Participant in the Combined or MemberDirected 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 2010. The maximum statutory rate is $10 \%$ 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 $11.1 \%$ of earnable salary in 2010 increasing to 13.00\% by 2014. Remaining Law enforcement members (Public Safety) contribute 10.5\% of earnable salary in 2010 increasing to 12.00\% 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 $14 \%$. The maximum statutory rate for law enforcement employers is $18.1 \%$ (H.B. 416, effective 1/1/2001).

## Benefits and Conditions Evaluated

## CONTRIBUTIONS (CONT’D)

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 <br> Government | Law <br> Enforcement | Public <br> Safety |
| :---: | :--- | :---: | :---: | :---: |
| 2010 | $14.00 \%$ | $14.00 \%$ | $17.87 \%$ | $17.87 \%$ |
| 2011 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 <br> Divisions |
| :---: | :---: |
| 2010 | $5.00 \%$ |
| 2011 | $4.00 \%$ |
| 2012 | $4.00 \%$ |
| 2013 | $1.00 \%$ |
| 2014 | $0.00 \%$ |
| 2015 and Later | $0.00 \%$ |

The schedule was adopted at the July 21, 2010 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 <br> Government | Law <br> Enforcement | Public <br> Safety |
| :---: | :--- | :---: | :---: | :---: |
| 2010 | $10.00 \%$ | $10.00 \%$ | $11.10 \%$ | $10.50 \%$ |
| 2011 | $10.00 \%$ | $10.00 \%$ | $11.60 \%$ | $11.00 \%$ |
| 2012 | $10.00 \%$ | $10.00 \%$ | $12.10 \%$ | $11.50 \%$ |
| 2013 | $10.00 \%$ | $10.00 \%$ | $12.60 \%$ | $12.00 \%$ |
| 2014 and Later | $10.00 \%$ | $10.00 \%$ | $13.00 \%$ | $12.00 \%$ |

## Traditional Pension Plan

## 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 <br> Age | OR | Years of <br> Service Credit |  |
| :---: | :---: | :---: | :---: |
|  |  | Percentage of <br> Base Amount |  |
| 58 | 25 |  |  |
| 59 | 26 | $75 \%$ |  |
| 60 | 27 | 80 |  |
| 61 | N/A | 85 |  |
| N/A | 28 | 88 |  |
|  | N/A | 90 |  |
| 62 | N/A | 91 |  |
| 63 | 29 | 94 |  |
| N/A | N/A | 95 |  |
| 64 | 30 or more | 97 |  |
| 65 |  |  |  |

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.

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.

## DISABILITY RETIREMENT

The disability program was revised 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.

## 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

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

## Schedule 2

| Years of Service | Annual Benefit as a \% of <br> Deceased Member's FAS |
| :---: | :---: |
| 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

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

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:

| Service Credit <br> at Retirement | Amount of <br> Death Benefit |
| :--- | :---: |
| 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

## 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 paid a monthly allowance from OPERS. Members retiring with a normal or early service retirement allowance after June 13, 1986 must have 10 or more years of qualified service credit to be eligible for this benefit.

Medicare premiums. Medicare part B premiums are paid for those eligible, upon proof of coverage. Members retiring with a normal or early service retirement allowance after June 13, 1986 must have 10 or more years of qualified service credit to be eligible for this benefit.

## 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, reemployed 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

## 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 <br> Age | OR | Years of <br> Service Credit |
| :---: | :---: | :---: |
| Percentage of <br> 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

## 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

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.

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. The PLOP is available to Combined Plan members for the age and service retirement allowance under the defined benefit portion of the Plan and for the monthly annuity under the defined contribution portion of the Plan.

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.

## COMBINED PlAN

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

| Service Credit <br> at Retirement | Amount of <br> Death Benefit |
| :--- | :---: |
| 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 |

## 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 being paid a monthly allowance from OPERS. Members retiring with a normal or early service retirement allowance after June 13, 1986 must have 10 or more years of qualified service credit to be eligible for this benefit.

## Combined Plan

Medicare premiums. Medicare part B premiums are paid for those eligible, upon proof of coverage. Members retiring with a normal or early service retirement allowance after June 13, 1986 must have 10 or more years of qualified service credit to be eligible for this benefit. [Although it is not mentioned under the Traditional Pension Plan either, Combined Plan members are eligible for the Medicare Part-A equivalent coverage under R.C. 145.325.]

## 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.

## Member-Directed Plan

## 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.

PLOP. Effective 01/01/2004, retiring members who elect a monthly annuity under the MemberDirected Plan 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 annuity. The lump sum payment cannot be less than 6 times nor 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 annuity 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. The PLOP is available to MemberDirected Plan members only if they elect a monthly annuity.

## 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).

## MEMBER-DIRECTED PLAN

## 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. Members vest in their RMA based on their attained years of participation in the Plan as follows:

| $1-2$ years | $0 \%$ |
| :--- | ---: |
| 3 years | $30 \%$ |
| 4 years | $40 \%$ |
| 5 years | $50 \%$ |
| 6 years | $60 \%$ |
| 7 years | $70 \%$ |
| 8 years | $80 \%$ |
| 9 years | $90 \%$ |
| 10 years | $100 \%$ |

Effective January 1, 2009, the vesting schedule will be 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 <br> State or Local Member - Normal Retirement RETIRING DECEMBER 31, 2010 <br> Under Benefit Provisions Evaluated 

## Data:

A. $\qquad$ Final Average Earnings
B.
$\qquad$ Years of Credited Service
C. $\qquad$ Age of Retiree
D. $\qquad$ Age of Spouse
E. $\qquad$ 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: ( $0.022 \times 30$ years $+0.025 \times 3$ years) $\times \$ 32,000=$
\$ 23,520
G. Reduction for Line E Election: (1-0.84810) $\times(\mathrm{F})=$
H. Benefit Payable to Retiree while Spouse is Alive: (F) - (G) =
I. Benefit Payable to Spouse after Retiree's Death
J. Benefit Payable to Retiree after Spouse's Death

## Projected Benefits:

| Year Ended <br> December 31, | Retiree's Benefit <br> (Both Alive) | Spouse's Benefit <br> (After Retiree's Death) | Retiree's Benefit <br> (After Spouse's Death) |
| :---: | :---: | :---: | :---: |
| 2011 | $\$ 19,947$ | $\$ 19,947$ | $\$ 23,520$ |
| 2012 | 20,545 | 20,545 | 24,226 |
| 2013 | 21,144 | 21,144 | 24,931 |
| 2014 | 21,742 | 21,742 | 25,637 |
| 2015 | 22,341 | 22,341 | 26,342 |
| 2016 | 22,939 | 22,939 | 27,048 |
| 2017 | 23,537 | 23,537 | 27,754 |
| 2018 | 24,136 | 24,136 | 28,459 |
| 2019 | 24,734 | 24,734 | 29,165 |
| 2020 | 25,333 | 25,333 | 29,870 |

# SAMPLE BENEFIT COMPUTATION - TRADITIONAL PLAN <br> State or Local Member - Early Retirement RETIRING DECEMBER 31, 2010 Under Benefit Provisions Evaluated 

## Data:

A. $\qquad$ Final Average Earnings
B. $\qquad$ Years of Credited Service
C. $\qquad$ Age of Retiree
D. $\qquad$ Age of Spouse
E. $\qquad$ 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: $0.022 \times 26$ years $\times \$ 32,000=$
\$ 18,304
G. Adjustment factor for Early Retirement (from schedule)

80\%
H. Adjusted benefit: ( F ) $\times(\mathrm{G})=$
I. Reduction for Line E Election: $(1-0.84810) \times(H)=$
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 <br> December 31, | Retiree's Benefit <br> (Both Alive) | Spouse's Benefit <br> (After Retiree's Death) | Retiree's Benefit <br> (After Spouse's Death) |
| :---: | :---: | :---: | :---: |
| 2011 | $\$ 12,419$ | $\$ 12,419$ | $\$ 14,643$ |
| 2012 | 12,792 | 12,792 | 15,082 |
| 2013 | 13,164 | 13,164 | 15,522 |
| 2014 | 13,537 | 13,537 | 15,961 |
| 2015 | 13,910 | 13,910 | 16,400 |
| 2016 | 14,282 | 14,282 | 16,840 |
| 2017 | 14,655 | 14,655 | 17,279 |
| 2018 | 15,027 | 15,027 | 17,718 |
| 2019 | 15,400 | 15,400 | 18,158 |
| 2020 | 15,772 | 15,772 | 18,597 |

# Sample Benefit Computation - Traditional Plan <br> SEction 145.33 (B)(2)(b) Public SAFETY <br> MEMBER - NORMAL RETIREMENT <br> RETIRING DECEMBER 31, 2010 <br> Under Benefit Provisions Evaluated 

## Data:

A. $\$ 38,000 \quad$ Final Average Earnings
B. $\qquad$ Years of Credited Service
C. $\qquad$ Age of Retiree
D. $\qquad$ Age of Spouse
E. $\qquad$ 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: ( $0.025 \times 25$ years $+0.021 \times 3$ years) $\times \$ 38,000 \times 80 \%=$
\$ 20,915
G. Reduction for Line E Election: ( $1-0.91118) \times(\mathrm{F})=$
H. Benefit Payable to Retiree while Spouse is Alive: $(\mathrm{F})-(\mathrm{G})=\quad 19,057$
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 <br> December 31, | Retiree's Benefit <br> (Both Alive) | Spouse's Benefit <br> (After Retiree's Death) | Retiree's Benefit <br> (After Spouse's Death) |
| :---: | :---: | :---: | :---: |
| 2011 | $\$ 19,057$ | $\$ 19,057$ | $\$ 20,915$ |
| 2012 | 19,629 | 19,629 | 21,542 |
| 2013 | 20,200 | 20,200 | 22,170 |
| 2014 | 20,772 | 20,772 | 22,797 |
| 2015 | 21,344 | 21,344 | 23,425 |
| 2016 | 21,916 | 21,916 | 24,052 |
| 2017 | 22,487 | 22,487 | 24,680 |
| 2018 | 23,059 | 23,059 | 25,307 |
| 2019 | 23,631 | 23,631 | 25,935 |
| 2020 | 24,202 | 24,202 | 26,562 |

# SAMPLE BENEFIT COMPUTATION - TRADITIONAL PLAN <br> SECTION 145.33 (B)(2)(a) LAW ENFORCEMENT <br> Member - Normal Retirement <br> RETIRING DECEMBER 31, 2010 <br> Under Benefit Provisions Evaluated 

## Data:

A. $\$ 38,000$ Final Average Earnings
B. $\qquad$ Years of Credited Service
C. $\qquad$ Age of Retiree
D. $\qquad$ Age of Spouse
E. $\qquad$ 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: ( $0.025 \times 25$ years $+0.021 \times 3$ years) $\times \$ 38,000=$
\$ 26,144
G. Reduction for Line E Election: $(1-0.91118) \times(F)=$
H. Benefit Payable to Retiree while Spouse is Alive: $(\mathrm{F})-(\mathrm{G})=$
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 <br> December 31, | Retiree's Benefit <br> (Both Alive) | Spouse's Benefit <br> (After Retiree's Death) | Retiree's Benefit <br> (After Spouse's Death) |
| :---: | :---: | :---: | :---: |
| 2011 | $\$ 23,822$ | $\$ 23,822$ | $\$ 26,144$ |
| 2012 | 24,537 | 24,537 | 26,928 |
| 2013 | 25,251 | 25,251 | 27,713 |
| 2014 | 25,966 | 25,966 | 28,497 |
| 2015 | 26,681 | 26,681 | 29,281 |
| 2016 | 27,395 | 27,395 | 30,066 |
| 2017 | 28,110 | 28,110 | 30,850 |
| 2018 | 28,825 | 28,825 | 31,634 |
| 2019 | 29,539 | 29,539 | 32,419 |
| 2020 | 30,254 | 30,254 | 33,203 |

# SAMPLE BENEFIT COMPUTATION - TRADITIONAL PLAN State or Local Member - Termination Benefit RETIRING DECEMBER 31, 2010 Under Benefit Provisions Evaluated 

## Data:

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

## Computations:

H. Formula Benefit: ( $0.022 \times 15$ years $+0.025 \times 0$ years) $\times \$ 32,000=$
\$ 10,560
I. Adjustment factor for Early Retirement (from schedule) 85\%
J. Adjusted benefit: $(\mathrm{H}) \times(\mathrm{I})=$

8,976
K. Reduction for Line F Election: $(1-0.84024) \times(J)=\quad 1,434$
L. Benefit Payable to Retiree while Spouse is Alive: $(\mathrm{J})-(\mathrm{K})=\quad 7,542$
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, terminee may elect to receive a refund of accumulated contributions with interest plus an additional $67 \%$ of eligible accumulated contributions because terminee had more than 10 years of service.

## Projected Benefits:

| Year Ended <br> December 31, | Retiree's Benefit <br> (Both Alive) | Spouse's Benefit <br> (After Retiree's Death) | Retiree's Benefit <br> (After Spouse's Death) |
| :---: | :---: | :---: | :---: |
| 2011 | $\$ 7,542$ | $\$ 7,542$ | $\$ 8,976$ |
| 2012 | 7,768 | 7,768 | 9,245 |
| 2013 | 7,995 | 7,995 | 9,515 |
| 2014 | 8,221 | 8,221 | 9,784 |
| 2015 | 8,447 | 8,447 | 10,053 |
| 2016 | 8,673 | 8,673 | 10,322 |
| 2017 | 8,900 | 8,900 | 10,592 |
| 2018 | 9,126 | 9,126 | 10,861 |
| 2019 | 9,352 | 9,352 | 11,130 |
| 2020 | 9,578 | 9,578 | 11,400 |

# SAMPLE BENEFIT COMPUTATION - TRADITIONAL PLAN <br> SECTION 145.33 (B)(2)(a) Public SAFETY / LAW ENFORCEMENT MEMBER - TERMINATION BENEFIT <br> RETIRING DECEMBER 31, 2010 <br> Under Benefit Provisions Evaluated 

## Data:

A.
 Final Average Earnings
B. Years of Credited Service
C. $\qquad$ Age of Retiree
D. $\qquad$ Age of Spouse
E. $\qquad$ 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. $\qquad$ Accumulated Contributions at Termination Date

## Computations:

H. Formula Benefit: $(0.015 \times 15$ years $) \times \$ 38,000=$
\$ 8,550
I. Reduction for Line F Election: $(1-0.89538) \times(H)=$
J. Benefit Payable to Retiree while Spouse is Alive: $(\mathrm{H})-(\mathrm{I})=\quad 7,655$
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, terminee may elect to receive a refund of accumulated contributions with interest plus an additional $67 \%$ of eligible accumulated contributions because terminee had more than 10 years of service.

```
76,820
```


## Projected Benefits:

| Year Ended <br> December 31, | Retiree's Benefit <br> (Both Alive) | Spouse's Benefit <br> (After Retiree's Death) | Retiree's Benefit <br> (After Spouse's Death) |
| :---: | :---: | :---: | :---: |
| 2011 | $\$ 7,655$ | $\$ 7,655$ | $\$ 8,550$ |
| 2012 | 7,885 | 7,885 | 8,807 |
| 2013 | 8,114 | 8,114 | 9,063 |
| 2014 | 8,344 | 8,344 | 9,320 |
| 2015 | 8,574 | 8,574 | 9,576 |
| 2016 | 8,803 | 8,803 | 9,833 |
| 2017 | 9,033 | 9,033 | 10,089 |
| 2018 | 9,263 | 9,263 | 10,346 |
| 2019 | 9,492 | 9,492 | 10,602 |
| 2020 | 9,722 | 9,722 | 10,859 |

## SECTION IV

RECOMMENDATIONS FOR RESERVE TRANSFERS

## DECEMBER 31, 2010 RETIRED LIFE VALUATION Reserve Transfers

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 post retirement 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 though IV-5 should be netted off the "Other" column on pages IV-2 through IV-5.

Traditional Plan
Reserve Transfers Affecting the Employer Accumulation Fund DECEMBER 31, 2010

|  | Assets <br> Before Transfers | Transfers |  | Assets After Transfers | Liabilities | Ratio |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Accrued | Other |  |  |  |
| State |  |  |  |  |  |  |
| A\&PR FUND |  |  |  |  |  |  |
| SR | \$13,674,480,165 | \$114,508,747 | \$(17,585,269) | \$13,771,403,643 | \$13,771,403,643 |  |
| MP | 26,246,585 | 17,537 | $(2,105,481)$ | 24,158,641 | 24,158,641 |  |
| AA | 337,395 | 0 | $(79,910)$ | 257,485 | 257,485 |  |
| JR | 504,349 | 0 | $(504,349)$ | 0 | 0 |  |
| CR | 54,461,135 | 0 | 8,972,503 | 63,433,638 | 63,433,638 |  |
| DR | 2,033,680,152 | 18,460,886 | 292,115 | 2,052,433,153 | 2,052,433,153 |  |
| BD | 359,352,078 | 12,687,530 | $(1,226,758)$ | 370,812,850 | 370,812,850 |  |
| TOTAL A\&PR | 16,149,061,859 | 145,674,700 | $(12,237,149)$ | 16,282,499,410 | 16,282,499,410 | 100.0\% |
| SBF |  |  |  |  |  |  |
| AA | 0 | 0 | 0 | 0 | 0 |  |
| S-1 | 112,701,284 | 1,458,408 | $(3,820,540)$ | 110,339,152 | 110,339,152 |  |
| S-2 | 450,137,619 | 3,454,844 | $(5,695,206)$ | 447,897,257 | 447,897,257 |  |
| TOTAL SBF | 562,838,903 | 4,913,252 | (9,515,746) | 558,236,409 | 558,236,409 | 100.0\% |
| TOTAL STATE | \$16,711,900,762 | \$150,587,952 | \$(21,752,895) | \$16,840,735,819 | \$16,840,735,819 | 100.0\% |
| Local |  |  |  |  |  |  |
| A\&PR FUND |  |  |  |  |  |  |
| SR | \$18,907,505,666 | \$156,324,260 | \$(70,843,981) | \$18,992,985,945 | \$18,992,985,945 |  |
| MP | 62,585,075 | 59,413 | $(3,139,066)$ | 59,505,422 | 59,505,422 |  |
| AA | 42,156,376 | 63,926 | $(387,483)$ | 41,832,819 | 41,832,819 |  |
| JR | 845,486 | 0 | $(845,486)$ | 0 | 0 |  |
| CR | 73,747,170 | 0 | 9,389,730 | 83,136,900 | 83,136,900 |  |
| DR | 2,609,852,334 | 19,778,109 | $(6,515)$ | 2,629,623,928 | 2,629,623,928 |  |
| BD | 439,819,540 | 12,142,483 | 6,498,357 | 458,460,380 | 458,460,380 |  |
| TOTAL A\&PR | 22,136,511,647 | 188,368,191 | (59,334,444) | 22,265,545,394 | 22,265,545,394 | 100.0\% |
| SBF |  |  |  |  |  |  |
| AA | 0 | 0 | 0 | 0 | 0 |  |
| S-1 | 168,167,224 | 1,702,229 | $(828,088)$ | 169,041,365 | 169,041,365 |  |
| S-2 | 743,832,173 | 8,441,152 | 125,610 | 752,398,935 | 752,398,935 |  |
| TOTAL SBF | 911,999,397 | 10,143,381 | $(702,478)$ | 921,440,300 | 921,440,300 | 100.0\% |
| TOTAL LOCAL | \$23,048,511,044 | \$198,511,572 | \$ (60,036,922) | \$23,186,985,694 | \$23,186,985,694 | 100.0\% |

Traditional Plan
Reserve Transfers Affecting the Employer Accumulation Fund DECEMBER 31, 2010

|  | AssetsBefore Transfers | Transfers |  | Assets After Transfers | Liabilities | Ratio |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Accrued | Other |  |  |  |
| Public Safety |  |  |  |  |  |  |
| A\&PR FUND |  |  |  |  |  |  |
| SR | \$7,323,978 | \$ 0 | \$(114,096) | \$7,209,882 | \$7,209,882 |  |
| 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 | 11,064,380 | 0 | 441,619 | 11,505,999 | 11,505,999 |  |
| BD | 1,591,630 | 0 | 124,852 | 1,716,482 | 1,716,482 |  |
| TOTAL A\&PR | 19,979,988 | 0 | 452,375 | 20,432,363 | 20,432,363 | 100.0\% |
| SBF |  |  |  |  |  |  |
| AA | 0 | 0 | 0 | 0 | 0 |  |
| S-1 | 100,943 | 0 | $(100,943)$ | 0 | 0 |  |
| S-2 | 15,757,655 | 134,683 | 58,087 | 15,950,425 | 15,950,425 |  |
| TOTAL SBF | 15,858,598 | 134,683 | $(42,856)$ | 15,950,425 | 15,950,425 | 100.0\% |
| TOTAL PUBLIC SAFETY | \$35,838,586 | \$134,683 | \$409,519 | \$36,382,788 | \$36,382,788 | 100.0\% |
| Law Enforcement |  |  |  |  |  |  |
| A\&PR FUND |  |  |  |  |  |  |
| SR | \$1,040,243,146 | \$5,931,558 | \$(23,520,353) | \$1,022,654,351 | \$1,022,654,351 |  |
| MP | 0 | 0 | 0 | 0 | 0 |  |
| AA | 0 | 0 | 0 | 0 | 0 |  |
| JR | 0 | 0 | 0 | 0 | 0 |  |
| CR | 398,896 | 0 | $(117,722)$ | 281,174 | 281,174 |  |
| DR | 508,587,784 | 2,916,107 | 5,696,495 | 517,200,386 | 517,200,386 |  |
| BD | 71,606,951 | 1,787,263 | 812,615 | 74,206,829 | 74,206,829 |  |
| TOTAL A\&PR | 1,620,836,777 | 10,634,928 | $(17,128,965)$ | 1,614,342,740 | 1,614,342,740 | 100.0\% |
| SBF |  |  |  |  |  |  |
| AA | 0 | 0 | 0 | 0 | 0 |  |
| S-1 | 11,254,027 | 0 | 32,323 | 11,286,350 | 11,286,350 |  |
| S-2 | 25,423,871 | 62,676 | 53,578 | 25,540,125 | 25,540,125 |  |
| TOTAL SBF | 36,677,898 | 62,676 | 85,901 | 36,826,475 | 36,826,475 | 100.0\% |
| TOTAL LAW ENFORCEMENT | \$ 1,657,514,675 | \$ 10,697,604 | \$(17,043,064) | \$ 1,651,169,215 | \$ 1,651,169,215 | 100.0\% |
| GRAND TOTAL | \$41,453,765,067 | \$359,931,811 | \$(98,423,362) | \$41,715,273,516 | \$41,715,273,516 | 100.0\% |

## Combined Plan

## Reserve Transfers Affecting the Employer Accumulation Fund DECEMBER 31, 2010

|  | Assets <br> Before Transfers | Transfers |  | Assets After Transfers | Liabilities | Ratio |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Accrued | Other |  |  |  |
| State |  |  |  |  |  |  |
| A\&PR FUND |  |  |  |  |  |  |
| CA | \$ 12,788 | \$0 | \$ (111) | \$ 12,677 | \$ 12,677 |  |
| CB | 126,211 | 0 | 4,070 | 130,281 | 130,281 |  |
| TOTAL A\&PR | 138,999 | 0 | 3,959 | 142,958 | 142,958 |  |
| TOTAL STATE | \$138,999 | \$0 | \$3,959 | \$142,958 | \$142,958 |  |
| Local |  |  |  |  |  |  |
| A\&PR FUND |  |  |  |  |  |  |
| CA | \$198,072 | \$ 12,868 | \$58,679 | \$269,619 | \$269,619 |  |
| CB | 307,168 | 95,075 | 18,715 | 420,958 | 420,958 |  |
| TOTAL A\&PR | 505,240 | 107,943 | 77,394 | 690,577 | 690,577 | 100.0\% |
| TOTAL LOCAL | \$505,240 | \$107,943 | \$77,394 | \$690,577 | \$690,577 | 100.0\% |
| GRAND TOTAL | \$644,239 | \$107,943 | \$81,353 | \$833,535 | \$833,535 | 100.0\% |

Reserve Transfers Affecting the Employer Accumulation Fund
DECEMBER 31, 2010

|  | Assets Before Transfers | Transfers |  | Assets After Transfers | Liabilities | Ratio |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Accrued | Other |  |  |  |
| State |  |  |  |  |  |  |
| A\&PR FUND |  |  |  |  |  |  |
| MD | \$ 22,017 | \$ 0 | \$ $(2,943)$ | \$ 19,074 | \$ 19,074 |  |
| TOTAL A\&PR | 22,017 | 0 | $(2,943)$ | 19,074 | 19,074 |  |
| TOTAL STATE | \$ 22,017 | \$ 0 | \$ $(2,943)$ | \$ 19,074 | \$ 19,074 |  |
| Local |  |  |  |  |  |  |
| A\&PR FUND |  |  |  |  |  |  |
| MD | \$443,223 | \$ 24,364 | \$ 3,131 | \$470,718 | \$470,718 |  |
| TOTAL A\&PR | 443,223 | 24,364 | 3,131 | 470,718 | 470,718 | 100.0\% |
| TOTAL LOCAL | \$443,223 | \$ 24,364 | \$ 3,131 | \$470,718 | \$470,718 | 100.0\% |
| GRAND TOTAL | \$465,240 | \$ 24,364 | \$ 188 | \$489,792 | \$489,792 | 100.0\% |

## SECTION V <br> 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, 2010

| Groups | Number | Annual Payroll | Average |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Pay | Age | Service |
| Traditional Plan <br> Men <br> Women | $\begin{aligned} & 53,102 \\ & 62,784 \end{aligned}$ | $\begin{array}{r} \$ 2,228,536,608 \\ 2,464,008,548 \\ \hline \end{array}$ | $\begin{array}{r} \$ 41,967 \\ 39,246 \\ \hline \end{array}$ | $40.9 \text { yrs. }$ $41.1$ | $\begin{aligned} & 9.8 \text { yrs. } \\ & 9.5 \\ & \hline \end{aligned}$ |
| Tranditional Plan Total | 115,886 | \$4,692,545,156 | 40,493 | 41.0 yrs. | 9.6 yrs. |
| Combined Plan <br> Men <br> Women | $\begin{array}{r} 971 \\ 1,383 \\ \hline \end{array}$ | $\begin{array}{r} \$ 50,167,770 \\ 68,612,265 \\ \hline \end{array}$ | $\begin{array}{r} \$ 51,666 \\ 49,611 \\ \hline \end{array}$ | 41.1 yrs. $41.1$ | $\begin{aligned} & 5.2 \text { yrs. } \\ & 4.9 \end{aligned}$ |
| Combined Plan Total | 2,354 | \$118,780,035 | 50,459 | 41.1 yrs. | 5.0 yrs. |
| Grand Total | 118,240 | \$4,811,325,191 | \$40,691 | 41.0 yrs. | 9.6 yrs. |

Reported pays for certain State employees were increased by 4\% assuming these employees will experience fewer future furlough days than experienced during 2010.

Also included in the valuation were 149,603 inactive members (145,225 eligible for deferred retirement allowances and 4,378 eligible for or contribution refunds) and 3,805 members active in the money purchase plan.

Retired Members in Valuation December 31, 2010

| Fund / Type of Allowance | Number |  | Current <br> Monthly Benefits |  | Actuarial <br> Liabilities |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Traditional Plan |  |  |  |  |  |
|  |  |  |  |  |  |
| Superannuation Retirement | 48,920 | \$ | 106,616,627 | \$ | 13,835,094,766 |
| Disability Retirement | 8,587 |  | 18,464,165 |  | 2,423,246,003 |
| Money Purchase | 509 |  | 242,329 |  | 24,158,641 |
| Total A \& PR Fund | 58,016 |  | 125,323,121 |  | 16,282,499,410 |
| Total SBF | 4,814 |  | 4,917,321 |  | 558,236,409 |
| Traditional Plan Total | 62,830 | \$ | 130,240,442 | \$ | 16,840,735,819 |
| Combined Plan |  |  |  |  |  |
| A \& PR Fund | 6 | \$ | 944 | \$ | 142,958 |
| Combined Plan Total | 6 | \$ | 944 | \$ | 142,958 |
| Member Directed Plan |  |  |  |  |  |
| A \& PR Fund | 2 | \$ | 133 | \$ | 19,074 |
| Member Directed Plan Total | 2 | \$ | 133 | \$ | 19,074 |
| Grand Total | 62,838 | \$ | 130,241,519 | \$ | 16,840,897,851 |

## STATE DIVISION <br> Employer Contributions To Support Defined Benefit Retirement Allowances Expressed as Percents of Active Member Payroll

| Valuation Date December 31 | 2010 |  |  | 2009 |
| :---: | :---: | :---: | :---: | :---: |
| Contributions for | 2013 |  |  | 2012 |
| Normal Cost <br> Age and Service Allowances Disability Allowances Survivor's Benefits Separation Benefits | Traditional Plan <br> $8.43 \%$ <br> $2.53 \%$ <br> $0.43 \%$ <br> $4.00 \%$ | Combined Plan <br> $3.68 \%$ <br> $1.97 \%$ <br> $0.31 \%$ <br> $1.24 \%$ | Traditional and <br> Combined Plans <br> $8.62 \%$ <br> $2.51 \%$ <br> $0.42 \%$ <br> $3.94 \%$ | Traditional and <br> Combined Plans <br> $8.57 \%$ <br> $2.51 \%$ <br> $0.42 \%$ <br> $3.95 \%$ |
| Total Normal Cost | 15.39 \% | 7.20 \% | 15.49 \% | 15.45 \% |
| (Member Contributions) | 10.00 \% | 0.00 \% | 10.00 \% | 10.00 \% |
| Employer Normal Cost | 5.39 \% | 7.20 \% | 5.49 \% | 5.45 \% |
| Unfunded Actuarial Accrued Liabilities Total Available Contribution Amortization Years | $\begin{gathered} 7.61 \text { \% } \\ 45 \\ \hline \end{gathered}$ | $\begin{gathered} 5.80 \% \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} 7.51 \% \\ 43 \\ \hline \end{gathered}$ | $\begin{gathered} 4.55 \% \\ 42 \\ \hline \end{gathered}$ |
| Total Pension Employer Contribution Rate | 13.00 \% | 13.00 \% | 13.00 \% | 10.00 \% |

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 <br> COMPARATIVE STATEMENT

| $\begin{gathered} \text { Valuation } \\ \text { Date } \\ \text { December } 31 \\ \hline \end{gathered}$ | Contribution Rate Effective January 1 | Defined Benefit Active Members in Valuation |  |  |  | Computed Employer Contributions as \% of Payroll |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Normal Cost | Unfunded <br> Accrued <br> Liability | Pension Total | Retiree Health | Grand <br> Total |
|  |  | No. | Annual Payroll |  |  |  |  |  |  |  |
|  |  |  | Total | Average | Increase |  |  |  |  |  |
|  |  |  | (\$Millions) |  |  |  |  |  |  |  |
| 1996@ | 1999 | 115,712 | \$ 3,319 | \$ 28,684 | 2.6 \% | 6.21 \% | 2.90 \% | 9.11 \% | 4.20 \% | 13.31 \% |
| 1997 | 2000 | 114,036 | 3,405 | 29,858 | 4.1 \% | 6.21 \% | 2.80 \% | 9.01 \% | 4.30 \% | 13.31 \% |
| 1998 | 2001 | 112,323 | 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 \% | 5.49 \% | 7.51 \% | 13.00 \% | 1.00 \% | 14.00 \% |

\# After benefit changes.
@ Revised actuarial assumptions.
\#\# Combined Plan members are included beginning with the December 31, 2003 valuation.

## STATE DIVISION <br> Development of Unfunded Actuarial Accrued LiAbilities DECEMBER 31, 2010

| Actuarial Present Value |  |  | Allocation by Entry Age |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | tion <br> ed By <br> Normal <br> tributions |  | (3) Actuarial Accrued Liabilities (1)-(2) |
| Allowances currently being paid from the Annuity \& Pension Reserve Fund |  | 16,282,661,442 |  | - | \$ | 16,282,661,442 |
| Allowances currently being paid from the Survivors Benefit Fund |  | 558,236,409 |  | - |  | 558,236,409 |
| Age and service allowances based on service rendered before and likely to be rendered after valuation date |  | 15,398,479,820 |  | 3,132,203,167 |  | 12,266,276,653 |
| Disability allowances likely to be paid present active members who become permanently disabled |  | 2,106,861,304 |  | 935,675,029 |  | 1,171,186,275 |
| Survivor benefits likely to be paid to spouses and children of present active members who die before retiring |  | 438,002,979 |  | 155,127,061 |  | 282,875,918 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members |  | 2,595,839,255 |  | 1,528,869,764 |  | 1,066,969,491 |
| Total |  | 37,380,081,209 |  | 5,751,875,021 | \$ | 31,628,206,188 |
| Actuarial Value of Assets |  |  |  |  |  | 23,061,254,681 |
| Unfunded Actuarial Accrued Liability |  |  |  |  | S | 8,566,951,507 |

# STATE DIVISION <br> Development of Unfunded Actuarial Accrued Liabilities COMPARATIVE STATEMENT (\$ in Millions Except Averages) 

| Dec. 31 | Defined Benefit <br> Active Payroll |  | Active and Inactive Member Accrued Liabilities for Retirement Allowances |  |  |  | Unfunded /Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Computed Total | Valuation Assets | Unfunded | Amortization Years |  |
|  | Total | Average |  |  |  |  |  |
| 1996@ | \$3,319 | \$28,684 | \$ 8,104 | \$7,387 | \$717 | 8 | 0.22 |
| 1997 | 3,405 | 29,858 | 8,591 | 8,268 | 323 | 3 | 0.09 |
| 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 | 14,787 | 6,220 | 8,567 | 61 | 1.78 |

\# 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 <br> Male Active Members in Defined Benefit Valuation DECEMBER 31, 2010 <br> 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 | 823 |  |  |  |  |  |  | 823 |
| Tot. Pay | \$5,119,851 |  |  |  |  |  |  | \$5,119,851 |
| Avg. Pay | \$6,221 |  |  |  |  |  |  | \$6,221 |
| 20-24 | 8,101 | 26 |  |  |  |  |  | 8,127 |
| Tot. Pay | \$82,315,681 | \$542,063 |  |  |  |  |  | \$82,857,744 |
| Avg. Pay | \$10,161 | \$20,849 |  |  |  |  |  | \$10,195 |
| 25-29 | 4,878 | 762 | 25 |  |  |  |  | 5,665 |
| Tot. Pay | \$117,859,648 | \$31,337,620 | \$1,148,705 |  |  |  |  | \$150,345,973 |
| Avg. Pay | \$24,161 | \$41,125 | \$45,948 |  |  |  |  | \$26,539 |
| 30-34 | 2,843 | 1,491 | 588 | 3 |  |  |  | 4,925 |
| Tot. Pay | \$90,005,761 | \$70,652,442 | \$30,216,481 | \$128,349 |  |  |  | \$191,003,033 |
| Avg. Pay | \$31,659 | \$47,386 | \$51,389 | \$42,783 |  |  |  | \$38,782 |
| 35-39 | 1,903 | 1,162 | 1,418 | 388 | 7 |  |  | 4,878 |
| Tot. Pay | \$65,276,098 | \$59,188,635 | \$77,397,789 | \$22,002,939 | \$409,635 |  |  | \$224,275,096 |
| Avg. Pay | \$34,302 | \$50,937 | \$54,582 | \$56,709 | \$58,519 |  |  | \$45,977 |
| 40-44 | 1,624 | 1,022 | 1,287 | 1,451 | 552 | 9 |  | 5,945 |
| Tot. Pay | \$57,763,306 | \$54,231,497 | \$71,243,027 | \$90,453,499 | \$34,504,809 | \$601,915 |  | \$308,798,053 |
| Avg. Pay | \$35,569 | \$53,064 | \$55,356 | \$62,339 | \$62,509 | \$66,879 |  | \$51,942 |
| 45-49 | 1,412 | 941 | 1,080 | 1,176 | 1,606 | 753 | 22 | 6,990 |
| Tot. Pay | \$49,187,713 | \$48,282,537 | \$59,503,526 | \$71,184,041 | \$105,722,017 | \$47,759,534 | \$1,294,844 | \$382,934,212 |
| Avg. Pay | \$34,835 | \$51,310 | \$55,096 | \$60,531 | \$65,829 | \$63,426 | \$58,857 | \$54,783 |
| 50-54 | 1,118 | 782 | 939 | 921 | 1,209 | 1,437 | 375 | 6,781 |
| Tot. Pay | \$39,170,447 | \$39,886,762 | \$52,190,466 | \$55,457,654 | \$78,399,458 | \$95,313,234 | \$24,107,012 | \$384,525,033 |
| Avg. Pay | \$35,036 | \$51,006 | \$55,581 | \$60,215 | \$64,847 | \$66,328 | \$64,285 | \$56,706 |
| 55-59 | 816 | 712 | 739 | 748 | 923 | 925 | 530 | 5,393 |
| Tot. Pay | \$28,195,918 | \$37,062,676 | \$40,742,202 | \$45,057,025 | \$57,008,127 | \$59,948,983 | \$39,190,982 | \$307,205,913 |
| Avg. Pay | \$34,554 | \$52,054 | \$55,132 | \$60,237 | \$61,764 | \$64,810 | \$73,945 | \$56,964 |
| 60-64 | 533 | 392 | 490 | 525 | 489 | 463 | 338 | 3,230 |
| Tot. Pay | \$16,076,164 | \$19,126,557 | \$26,660,852 | \$31,307,698 | \$31,776,980 | \$30,317,412 | \$26,718,760 | \$181,984,423 |
| Avg. Pay | \$30,162 | \$48,792 | \$54,410 | \$59,634 | \$64,984 | \$65,480 | \$79,050 | \$56,342 |
| 65-69 | 222 | 129 | 132 | 99 | 116 | 101 | 84 | 883 |
| Tot. Pay | \$5,015,014 | \$5,262,341 | \$7,298,498 | \$6,638,252 | \$7,622,072 | \$7,361,241 | \$6,796,755 | \$45,994,173 |
| Avg. Pay | \$22,590 | \$40,793 | \$55,292 | \$67,053 | \$65,708 | \$72,884 | \$80,914 | \$52,089 |
| 70 \& Over | 191 | 64 | 59 | 35 | 24 | 22 | 38 | 433 |
| Tot. Pay | \$2,082,625 | \$1,627,935 | \$2,127,560 | \$1,840,358 | \$1,210,252 | \$1,540,834 | \$3,231,310 | \$13,660,874 |
| Avg. Pay | \$10,904 | \$25,436 | \$36,060 | \$52,582 | \$50,427 | \$70,038 | \$85,034 | \$31,549 |
| Totals | 24,464 | 7,483 | 6,757 | 5,346 | 4,926 | 3,710 | 1,387 | 54,073 |
| Tot. Pay | \$558,068,226 | \$367,201,065 | \$368,529,106 | \$324,069,815 | \$316,653,350 | \$242,843,153 | \$101,339,663 | \$2,278,704,378 |
| Avg. Pay | \$22,812 | \$49,071 | \$54,540 | \$60,619 | \$64,282 | \$65,456 | \$73,064 | \$42,141 |

# STATE DIVISION <br> Female Active Members in Defined Benefit Valuation DECEMBER 31, 2010 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 | 999 |  |  |  |  |  |  | 999 |
| Tot. Pay | \$5,158,574 |  |  |  |  |  |  | \$5,158,574 |
| Avg. Pay | \$5,164 |  |  |  |  |  |  | \$5,164 |
| 20-24 | 9,633 | 46 |  |  |  |  |  | 9,679 |
| Tot. Pay | \$89,772,931 | \$957,540 |  |  |  |  |  | \$90,730,471 |
| Avg. Pay | \$9,319 | \$20,816 |  |  |  |  |  | \$9,374 |
| 25-29 | 5,617 | 952 | 25 |  |  |  |  | 6,594 |
| Tot. Pay | \$143,213,661 | \$39,338,324 | \$888,980 |  |  |  |  | \$183,440,965 |
| Avg. Pay | \$25,496 | \$41,322 | \$35,559 |  |  |  |  | \$27,819 |
| 30-34 | 3,157 | 1,934 | 609 | 17 |  |  |  | 5,717 |
| Tot. Pay | \$101,185,076 | \$88,806,340 | \$29,296,225 | \$812,724 |  |  |  | \$220,100,365 |
| Avg. Pay | \$32,051 | \$45,918 | \$48,105 | \$47,807 |  |  |  | \$38,499 |
| 35-39 | 2,215 | 1,429 | 1,385 | 408 | 13 |  |  | 5,450 |
| Tot. Pay | \$78,094,578 | \$69,991,545 | \$72,166,044 | \$21,775,547 | \$778,577 |  |  | \$242,806,291 |
| Avg. Pay | \$35,257 | \$48,979 | \$52,105 | \$53,371 | \$59,891 |  |  | \$44,552 |
| 40-44 | 2,045 | 1,402 | 1,340 | 1,370 | 589 | 40 |  | 6,786 |
| Tot. Pay | \$73,311,330 | \$67,661,562 | \$68,220,158 | \$78,977,751 | \$33,540,866 | \$2,488,873 |  | \$324,200,540 |
| Avg. Pay | \$35,849 | \$48,261 | \$50,911 | \$57,648 | \$56,945 | \$62,222 |  | \$47,775 |
| 45-49 | 1,799 | 1,367 | 1,265 | 1,190 | 1,611 | 756 | 50 | 8,038 |
| Tot. Pay | \$63,944,199 | \$65,344,437 | \$62,416,088 | \$67,133,253 | \$97,129,419 | \$46,186,696 | \$3,031,413 | \$405,185,505 |
| Avg. Pay | \$35,544 | \$47,801 | \$49,341 | \$56,414 | \$60,291 | \$61,094 | \$60,628 | \$50,409 |
| 50-54 | 1,617 | 1,291 | 1,285 | 1,173 | 1,419 | 1,406 | 439 | 8,630 |
| Tot. Pay | \$57,787,004 | \$60,877,339 | \$63,759,287 | \$63,246,696 | \$81,878,445 | \$88,455,738 | \$26,379,128 | \$442,383,637 |
| Avg. Pay | \$35,737 | \$47,155 | \$49,618 | \$53,919 | \$57,702 | \$62,913 | \$60,089 | \$51,261 |
| 55-59 | 1,096 | 1,015 | 1,115 | 1,079 | 1,262 | 899 | 556 | 7,022 |
| Tot. Pay | \$38,581,610 | \$47,383,180 | \$54,594,058 | \$59,263,913 | \$71,071,803 | \$55,484,045 | \$35,708,128 | \$362,086,737 |
| Avg. Pay | \$35,202 | \$46,683 | \$48,963 | \$54,925 | \$56,317 | \$61,718 | \$64,223 | \$51,565 |
| 60-64 | 469 | 492 | 683 | 634 | 770 | 511 | 280 | 3,839 |
| Tot. Pay | \$16,037,272 | \$22,118,754 | \$33,306,276 | \$34,613,637 | \$42,660,458 | \$29,453,576 | \$17,695,915 | \$195,885,888 |
| Avg. Pay | \$34,195 | \$44,957 | \$48,765 | \$54,596 | \$55,403 | \$57,639 | \$63,200 | \$51,025 |
| 65-69 | 137 | 143 | 163 | 134 | 209 | 124 | 96 | 1,006 |
| Tot. Pay | \$3,194,087 | \$5,257,531 | \$7,435,115 | \$6,909,435 | \$10,761,304 | \$7,042,022 | \$5,215,133 | \$45,814,627 |
| Avg. Pay | \$23,315 | \$36,766 | \$45,614 | \$51,563 | \$51,489 | \$56,791 | \$54,324 | \$45,541 |
| 70 \& Over | 89 | 53 | 43 | 47 | 66 | 57 | 52 | 407 |
| Tot. Pay | \$1,030,361 | \$1,030,816 | \$1,633,871 | \$2,190,282 | \$3,289,499 | \$2,658,011 | \$2,994,373 | \$14,827,213 |
| Avg. Pay | \$11,577 | \$19,449 | \$37,997 | \$46,602 | \$49,841 | \$46,632 | \$57,584 | \$36,430 |
| Totals | 28,873 | 10,124 | 7,913 | 6,052 | 5,939 | 3,793 | 1,473 | 64,167 |
| Tot. Pay | \$671,310,683 | \$468,767,368 | \$393,716,102 | \$334,923,238 | \$341,110,371 | \$231,768,961 | \$91,024,090 | \$2,532,620,813 |
| Avg. Pay | \$23,250 | \$46,303 | \$49,756 | \$55,341 | \$57,436 | \$61,104 | \$61,795 | \$39,469 |

# STATE DIVISION <br> InActive Members in Defined Benefit Valuation DECEMBER 31, 2010 <br> by Attained Age and Years of Service 

| Attained Ages | Years of Service to Valuation Date |  |  |  |  |  |  | Total <br> Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ |  |
| 15-19 | 1,435 |  |  |  |  |  |  | 1,435 |
| 20-24 | 20,655 | 12 |  |  |  |  |  | 20,667 |
| 25-29 | 32,481 | 197 |  |  |  |  |  | 32,678 |
| 30-34 | 27,467 | 543 | 45 | 1 |  |  |  | 28,056 |
| 35-39 | 19,586 | 572 | 183 | 19 |  |  |  | 20,360 |
| 40-44 | 10,995 | 805 | 404 | 110 | 14 |  |  | 12,328 |
| 45-49 | 7,905 | 917 | 611 | 259 | 81 | 14 |  | 9,787 |
| 50-54 | 7,299 | 923 | 716 | 359 | 167 | 58 | 1 | 9,523 |
| 55-59 | 5,955 | 846 | 725 | 419 | 159 | 25 | 4 | 8,133 |
| 60-64 | 3,479 | 415 | 247 | 89 | 37 | 6 | 1 | 4,274 |
| 65-69 | 1,377 | 105 | 36 | 8 | 5 | 1 | 1 | 1,533 |
| 70 \& Over | 790 | 20 | 11 | 6 | 1 | 1 |  | 829 |
| Totals | 139,424 | 5,355 | 2,978 | 1,270 | 464 | 105 | 7 | 149,603 |

## SECTION VI

LOCAL GOVERNMENT DIVISION

## 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, 2010

| Groups | Number | Annual <br> Payroll | Average |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Pay | Age | Service |
| Traditional Plan Men Women | $\begin{array}{r} 97,399 \\ 113,432 \\ \hline \end{array}$ | $\begin{array}{r} \$ 3,436,103,799 \\ 3,594,286,805 \\ \hline \end{array}$ | $\begin{array}{r} \$ 35,279 \\ 31,687 \\ \hline \end{array}$ | $\begin{array}{\|l} \hline 45.0 \text { yrs. } \\ \hline 44.4 \\ \hline \end{array}$ | $\begin{aligned} & 10.2 \text { yrs. } \\ & 10.1 \\ & \hline \end{aligned}$ |
| Tranditional Plan Total | 210,831 | \$7,030,390,604 | \$33,346 | 44.7 yrs. | 10.2 yrs. |
| Combined Plan <br> Men <br> Women | $\begin{array}{r} 1,884 \\ 2,429 \\ \hline \end{array}$ | $\begin{array}{r} \$ 78,002,759 \\ 87,583,590 \\ \hline \end{array}$ | $\begin{array}{r} \$ 41,403 \\ 36,057 \\ \hline \end{array}$ | $43.9 \text { yrs. }$ $42.7$ | $\begin{aligned} & 5.7 \mathrm{yrs} . \\ & 5.6 \\ & \hline \end{aligned}$ |
| Combined Plan Total | 4,313 | \$165,586,349 | \$38,392 | 43.2 yrs. | 5.6 yrs. |
| Grand Total | 215,144 | \$7,195,976,953 | \$33,447 | 44.6 yrs. | 10.1 yrs. |

Also included in the valuation were 253,458 inactive members (243,398 eligible for deferred retirement allowances and 10,060 eligible for contribution refunds) and 14,407 members active in the money purchase plan.

Retired Members in Valuation December 31, 2010

| Fund / Type of Allowance | Number | Current <br> Monthly Benefits | Actuarial Liabilities |
| :---: | :---: | :---: | :---: |
| Traditional Plan |  |  |  |
| A \& PR Fund |  |  |  |
| Superannuation Retirement | 90,447 | \$147,681,708 | \$19,117,955,663 |
| Disability Retirement | 12,291 | 23,919,313 | 3,088,084,309 |
| Money Purchase | 1,604 | 594,930 | 59,505,422 |
| Total A \& PR Fund | 104,342 | 172,195,951 | 22,265,545,394 |
| Total SBF | 10,030 | 8,243,253 | 921,440,300 |
| Traditional Plan Total | 114,372 | \$180,439,204 | \$23,186,985,694 |
| Combined Plan |  |  |  |
| A \& PR Fund | 26 | \$4,675 | \$690,577 |
| Combined Plan Total | 26 | \$4,675 | \$690,577 |
| Member Directed Plan |  |  |  |
| A \& PR Fund | 16 | \$3,279 | \$470,718 |
| Member Directed Plan Total | 16 | \$3,279 | \$470,718 |
| Grand Total | 114,414 | \$180,447,158 | \$23,188,146,989 |

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

| Valuation Date December 31 | 2010 |  |  | 2009 |
| :---: | :---: | :---: | :---: | :---: |
| Contributions for | 2013 |  |  | 2012 |
| Normal Cost <br> Age and Service Allowances <br> Disability Allowances <br> Survivor's Benefits <br> Separation Benefits | Traditional Plan <br> $8.51 \%$ <br> $1.97 \%$ <br> $0.48 \%$ <br> $4.09 \%$ | Combined Plan <br> $3.72 \%$ <br> $1.51 \%$ <br> $0.35 \%$ <br> $1.29 \%$ | Traditional and <br> Combined Plans <br> $8.68 \%$ <br> $1.96 \%$ <br> $0.48 \%$ <br> $4.03 \%$ | Traditional and <br> Combined Plans <br> $8.66 \%$ <br> $1.96 \%$ <br> $0.48 \%$ <br> $4.04 \%$ |
| Total Normal Cost <br> (Member Contributions) | 15.05 \% <br> 10.00 \% | $\begin{aligned} & \hline 6.87 \% \\ & 0.00 \% \\ & \hline \end{aligned}$ | $\begin{aligned} & 15.15 \% \\ & 10.00 \% \end{aligned}$ | $\begin{aligned} & 15.14 \% \\ & 10.00 \% \end{aligned}$ |
| Employer Normal Cost | 5.05 \% | 6.87 \% | 5.15 \% | 5.14 \% |
| Unfunded Actuarial Accrued Liabilities <br> Total Available Contribution <br> Amortization Years | 7.95 \% <br> 24 | $\begin{gathered} 6.13 \% \\ 2 \\ \hline \end{gathered}$ | 7.85 \% <br> 24 | $4.86 \text { \% }$ $25$ |
| Total Pension Employer Contribution Rate | 13.00 \% | 13.00 \% | 13.00 \% | 10.00 \% |

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 <br> COMPARATIVE STATEMENT

| Valuation <br> Date <br> December 31 | Contribution Rate Effective January 1 | Defined Benefit Active Members in Valuation |  |  |  | Computed Employer Contributions as \% of Payroll |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Normal Cost | Unfunded <br> Accrued <br> Liability | Pension Total | Retiree <br> Health | Grand Total |
|  |  | No. | Annual Payroll |  |  |  |  |  |  |  |
|  |  |  | Total | Average | Increase |  |  |  |  |  |
|  |  |  | (\$Millions) |  |  |  |  |  |  |  |
| 1996@ | 1999 | 229,954 | \$4,792 | \$20,839 | 2.2 \% | 6.16 \% | 3.19 \% | 9.35 \% | 4.20 \% | 13.55 \% |
| 1997 | 2000 | 231,668 | 4,976 | 21,481 | 3.1 \% | 6.15 \% | 3.10 \% | 9.25 \% | 4.30 \% | 13.55 \% |
| 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 \% | 5.15 \% | 7.85 \% | 13.00 \% | 1.00 \% | 14.00 \% |

[^0]
## LOCAL GOVERNMENT DIVISION Development of Unfunded Actuarial Accrued Liabilities DECEMBER 31, 2010

| Actuarial Present Value | (1) <br> Total Actuarial Present Value | Allocation by Entry Age |  |
| :---: | :---: | :---: | :---: |
|  |  | (2) <br> Portion <br> Covered By <br> Future Normal <br> Cost Contributions | (3) <br> Actuarial Accrued Liabilities (1)-(2) |
| Allowances currently being paid from the Annuity \& Pension Reserve Fund | \$22,266,706,689 | \$ | \$22,266,706,689 |
| Allowances currently being paid from the Survivors Benefit Fund | 921,440,300 | - | 921,440,300 |
| Age and service allowances based on service rendered before and likely to be rendered after valuation date | 22,855,265,591 | 4,841,901,214 | 18,013,364,377 |
| Disability allowances likely to be paid present active members who become permanently disabled | 2,518,160,155 | 1,129,020,143 | 1,389,140,012 |
| Survivor benefits likely to be paid to spouses and children of present active members who die before retiring | 773,902,520 | 264,299,340 | 509,603,180 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members | 4,083,914,434 | 2,412,774,056 | 1,671,140,378 |
| Total | \$53,419,389,689 | \$8,647,994,753 | \$44,771,394,936 |
| Actuarial Value of Assets |  |  | 34,986,262,152 |
| Unfunded Actuarial Accrued Liability |  |  | \$9,785,132,784 |

# 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 | $\qquad$ |  |
|  | Total | Average |  |  |  |  |  |
| 1996@ | \$ 4,792 | \$20,839 | \$ 11,286 | \$ 9,940 | \$1,346 | 15 | 0.28 |
| 1997 | 4,976 | 21,481 | 11,973 | 11,218 | 755 | 5 | 0.15 |
| 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 | 21,584 | 11,799 | 9,785 | 27 | 1.36 |

\# 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 viceversa.

# LOCAL GOVERNMENT DIVISION <br> Male Active Members in Defined Benefit Valuation <br> DECEMBER 31, 2010 <br> 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 | 4,318 |  |  |  |  |  |  | 4,318 |
| Tot. Pay | \$27,999,476 |  |  |  |  |  |  | \$27,999,476 |
| Avg. Pay | \$6,484 |  |  |  |  |  |  | \$6,484 |
| 20-24 | 6,941 | 132 |  |  |  |  |  | 7,073 |
| Tot. Pay | \$87,289,952 | \$3,106,372 |  |  |  |  |  | \$90,396,324 |
| Avg. Pay | \$12,576 | \$23,533 |  |  |  |  |  | \$12,780 |
| 25-29 | 4,940 | 1,437 | 110 |  |  |  |  | 6,487 |
| Tot. Pay | \$114,230,887 | \$50,067,735 | \$4,176,246 |  |  |  |  | \$168,474,868 |
| Avg. Pay | \$23,124 | \$34,842 | \$37,966 |  |  |  |  | \$25,971 |
| 30-34 | 3,660 | 2,506 | 1,171 | 56 |  |  |  | 7,393 |
| Tot. Pay | \$98,195,535 | \$101,662,043 | \$52,461,940 | \$2,729,967 |  |  |  | \$255,049,485 |
| Avg. Pay | \$26,829 | \$40,567 | \$44,801 | \$48,749 |  |  |  | \$34,499 |
| 35-39 | 3,051 | 2,304 | 2,269 | 841 | 26 |  |  | 8,491 |
| Tot. Pay | \$81,581,442 | \$95,558,968 | \$109,582,816 | \$41,998,908 | \$1,200,197 |  |  | \$329,922,331 |
| Avg. Pay | \$26,739 | \$41,475 | \$48,296 | \$49,939 | \$46,161 |  |  | \$38,856 |
| 40-44 | 3,134 | 2,225 | 2,474 | 2,028 | 894 | 35 |  | 10,790 |
| Tot. Pay | \$81,590,147 | \$91,769,632 | \$122,212,464 | \$108,800,753 | \$48,413,277 | \$2,178,150 |  | \$454,964,423 |
| Avg. Pay | \$26,034 | \$41,245 | \$49,399 | \$53,649 | \$54,154 | \$62,233 |  | \$42,165 |
| 45-49 | 2,828 | 2,216 | 2,364 | 2,078 | 2,253 | 1,028 | 67 | 12,834 |
| Tot. Pay | \$69,985,100 | \$85,028,575 | \$112,838,201 | \$106,881,952 | \$125,949,648 | \$57,869,762 | \$4,029,093 | \$562,582,331 |
| Avg. Pay | \$24,747 | \$38,370 | \$47,732 | \$51,435 | \$55,903 | \$56,294 | \$60,136 | \$43,835 |
| 50-54 | 2,797 | 2,237 | 2,323 | 2,001 | 2,279 | 1,943 | 702 | 14,282 |
| Tot. Pay | \$63,446,368 | \$80,575,252 | \$107,177,771 | \$97,369,830 | \$123,940,494 | \$114,576,616 | \$42,767,999 | \$629,854,330 |
| Avg. Pay | \$22,684 | \$36,019 | \$46,138 | \$48,661 | \$54,384 | \$58,969 | \$60,923 | \$44,101 |
| 55-59 | 2,419 | 1,949 | 1,898 | 1,757 | 1,847 | 1,495 | 995 | 12,360 |
| Tot. Pay | \$51,159,146 | \$64,886,161 | \$78,150,616 | \$81,396,728 | \$98,767,290 | \$88,016,911 | \$64,503,341 | \$526,880,193 |
| Avg. Pay | \$21,149 | \$33,292 | \$41,175 | \$46,327 | \$53,474 | \$58,874 | \$64,827 | \$42,628 |
| 60-64 | 2,076 | 1,501 | 1,305 | 1,197 | 1,097 | 824 | 612 | 8,612 |
| Tot. Pay | \$35,170,167 | \$46,381,400 | \$53,456,136 | \$54,296,307 | \$58,417,873 | \$46,316,023 | \$41,392,124 | \$335,430,030 |
| Avg. Pay | \$16,941 | \$30,900 | \$40,963 | \$45,360 | \$53,252 | \$56,209 | \$67,634 | \$38,949 |
| 65-69 | 1,356 | 726 | 479 | 341 | 231 | 196 | 173 | 3,502 |
| Tot. Pay | \$13,477,680 | \$15,052,027 | \$15,471,069 | \$13,647,009 | \$10,778,593 | \$9,918,604 | \$10,779,474 | \$89,124,456 |
| Avg. Pay | \$9,939 | \$20,733 | \$32,299 | \$40,021 | \$46,661 | \$50,605 | \$62,309 | \$25,450 |
| 70 \& Over | 1,258 | 872 | 451 | 234 | 119 | 108 | 99 | 3,141 |
| Tot. Pay | \$8,370,342 | \$9,742,166 | \$7,966,202 | \$5,329,236 | \$3,644,063 | \$3,417,560 | \$4,958,742 | \$43,428,311 |
| Avg. Pay | \$6,654 | \$11,172 | \$17,663 | \$22,775 | \$30,622 | \$31,644 | \$50,088 | \$13,826 |
| Totals | 38,778 | 18,105 | 14,844 | 10,533 | 8,746 | 5,629 | 2,648 | 99,283 |
| Tot. Pay | \$732,496,242 | \$643,830,331 | \$663,493,461 | \$512,450,690 | \$471,111,435 | \$322,293,626 | \$168,430,773 | \$3,514,106,558 |
| Avg. Pay | \$18,889 | \$35,561 | \$44,698 | \$48,652 | \$53,866 | \$57,256 | \$63,607 | \$35,395 |

# LOCAL GOVERNMENT DIVISION <br> Female Active Members in Defined Benefit Valuation <br> DECEMBER 31, 2010 <br> 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 | 4,857 |  |  |  |  |  |  | 4,857 |
| Tot. Pay | \$28,512,427 |  |  |  |  |  |  | \$28,512,427 |
| Avg. Pay | \$5,870 |  |  |  |  |  |  | \$5,870 |
| 20-24 | 6,763 | 217 |  |  |  |  |  | 6,980 |
| Tot. Pay | \$79,500,027 | \$3,410,290 |  |  |  |  |  | \$82,910,317 |
| Avg. Pay | \$11,755 | \$15,716 |  |  |  |  |  | \$11,878 |
| 25-29 | 5,872 | 1,646 | 126 |  |  |  |  | 7,644 |
| Tot. Pay | \$139,768,570 | \$51,259,838 | \$3,873,799 |  |  |  |  | \$194,902,207 |
| Avg. Pay | \$23,803 | \$31,142 | \$30,744 |  |  |  |  | \$25,497 |
| 30-34 | 4,540 | 3,520 | 1,488 | 55 |  |  |  | 9,603 |
| Tot. Pay | \$117,981,938 | \$130,761,976 | \$57,355,529 | \$2,029,505 |  |  |  | \$308,128,948 |
| Avg. Pay | \$25,987 | \$37,148 | \$38,545 | \$36,900 |  |  |  | \$32,087 |
| 35-39 | 3,952 | 2,790 | 3,191 | 985 | 55 |  |  | 10,973 |
| Tot. Pay | \$100,129,869 | \$103,890,571 | \$133,729,282 | \$41,318,009 | \$2,099,215 |  |  | \$381,166,946 |
| Avg. Pay | \$25,337 | \$37,237 | \$41,908 | \$41,947 | \$38,168 |  |  | \$34,737 |
| 40-44 | 4,017 | 2,851 | 3,154 | 2,352 | 1,110 | 62 |  | 13,546 |
| Tot. Pay | \$94,411,242 | \$100,810,035 | \$130,449,763 | \$110,772,736 | \$49,759,255 | \$2,896,217 |  | \$489,099,248 |
| Avg. Pay | \$23,503 | \$35,360 | \$41,360 | \$47,097 | \$44,828 | \$46,713 |  | \$36,107 |
| 45-49 | 3,979 | 3,014 | 3,114 | 2,174 | 2,312 | 1,099 | 73 | 15,765 |
| Tot. Pay | \$89,284,983 | \$102,641,249 | \$122,491,070 | \$95,567,562 | \$112,341,836 | \$51,879,963 | \$3,168,464 | \$577,375,127 |
| Avg. Pay | \$22,439 | \$34,055 | \$39,336 | \$43,959 | \$48,591 | \$47,207 | \$43,404 | \$36,624 |
| 50-54 | 3,693 | 3,078 | 3,442 | 2,553 | 2,281 | 1,738 | 664 | 17,449 |
| Tot. Pay | \$77,508,819 | \$97,465,095 | \$127,691,327 | \$106,632,908 | \$109,858,503 | \$88,110,758 | \$33,708,115 | \$640,975,525 |
| Avg. Pay | \$20,988 | \$31,665 | \$37,098 | \$41,768 | \$48,162 | \$50,697 | \$50,765 | \$36,734 |
| 55-59 | 2,667 | 2,507 | 2,828 | 2,536 | 2,299 | 1,304 | 757 | 14,898 |
| Tot. Pay | \$52,199,425 | \$77,775,156 | \$99,821,288 | \$101,266,280 | \$102,208,177 | \$64,953,631 | \$41,135,514 | \$539,359,471 |
| Avg. Pay | \$19,572 | \$31,023 | \$35,297 | \$39,931 | \$44,458 | \$49,811 | \$54,340 | \$36,203 |
| 60-64 | 1,618 | 1,562 | 1,795 | 1,543 | 1,557 | 899 | 477 | 9,451 |
| Tot. Pay | \$28,257,047 | \$45,441,069 | \$60,267,505 | \$57,778,675 | \$67,217,648 | \$42,151,863 | \$25,553,120 | \$326,666,927 |
| Avg. Pay | \$17,464 | \$29,092 | \$33,575 | \$37,446 | \$43,171 | \$46,888 | \$53,570 | \$34,564 |
| 65-69 | 659 | 474 | 480 | 427 | 396 | 258 | 175 | 2,869 |
| Tot. Pay | \$6,213,871 | \$10,517,617 | \$14,317,901 | \$14,643,043 | \$15,700,828 | \$11,791,239 | \$8,257,578 | \$81,442,077 |
| Avg. Pay | \$9,429 | \$22,189 | \$29,829 | \$34,293 | \$39,649 | \$45,702 | \$47,186 | \$28,387 |
| 70 \& Over | 576 | 366 | 269 | 227 | 164 | 99 | 125 | 1,826 |
| Tot. Pay | \$3,488,629 | \$3,904,713 | \$4,363,996 | \$5,312,112 | \$5,271,958 | \$4,003,601 | \$4,986,166 | \$31,331,175 |
| Avg. Pay | \$6,057 | \$10,669 | \$16,223 | \$23,401 | \$32,146 | \$40,440 | \$39,889 | \$17,158 |
| Totals | 43,193 | 22,025 | 19,887 | 12,852 | 10,174 | 5,459 | 2,271 | 115,861 |
| Tot. Pay | \$817,256,847 | \$727,877,609 | \$754,361,460 | \$535,320,830 | \$464,457,420 | \$265,787,272 | \$116,808,957 | \$3,681,870,395 |
| Avg. Pay | \$18,921 | \$33,048 | \$37,932 | \$41,653 | \$45,651 | \$48,688 | \$51,435 | \$31,778 |

# LOCAL GOVERNMENT DIVISION <br> Inactive Members in Defined Benefit Valuation DECEMBER 31, 2010 <br> 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 | 7,847 |  |  |  |  |  |  | 7,847 |
| 20-24 | 31,231 | 59 |  |  |  |  |  | 31,290 |
| 25-29 | 38,819 | 456 | 9 |  |  |  |  | 39,284 |
| 30-34 | 34,841 | 962 | 125 | 4 |  |  |  | 35,932 |
| 35-39 | 27,814 | 1,371 | 435 | 52 |  |  |  | 29,672 |
| 40-44 | 20,291 | 1,597 | 795 | 212 | 29 | 1 |  | 22,925 |
| 45-49 | 18,599 | 1,796 | 1,106 | 421 | 113 | 15 |  | 22,050 |
| 50-54 | 19,547 | 2,077 | 1,458 | 656 | 263 | 81 | 6 | 24,088 |
| 55-59 | 16,078 | 2,047 | 1,495 | 712 | 278 | 32 | 4 | 20,646 |
| 60-64 | 9,893 | 1,022 | 529 | 223 | 74 | 9 | 3 | 11,753 |
| 65-69 | 4,779 | 307 | 86 | 34 | 7 | 6 | 1 | 5,220 |
| 70 \& Over | 2,563 | 137 | 36 | 7 | 6 | 2 |  | 2,751 |
| Totals | 232,302 | 11,831 | 6,074 | 2,321 | 770 | 146 | 14 | 253,458 |

## SECTION VII

PUBLIC SAFETY DIVISION

## PUBLIC SAFETY DIVISION

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, 2010

| Groups | Number | Annual <br> Payroll | Average |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Pay | Age | Service |
| Men | 81 | \$3,355,388 | \$41,425 | 36.7 yrs. | 8.1 yrs. |
| Women | 7 | 294,856 | 42,122 | 39.6 | 9.5 |
| Totals | 88 | \$3,650,244 | \$41,480 | 36.9 yrs. | 8.2 yrs. |

Also included in the valuation were 28 inactive members ( 27 eligible for deferred retirement allowances and 1 eligible for contribution refunds) and 1 member active in the money purchase plan.

Retired Members in Valuation December 31, 2010

| Fund / Type of Allowance | Number | Current <br> Monthly Benefits | Actuarial <br> Liabilities |
| :--- | ---: | ---: | ---: |
| A \& PR Fund |  |  |  |
| Superannuation Retirement | 28 | $\$ 44,287$ | $\$ 7,209,882$ |
| Disability Retirement | 34 | 90,983 | $13,222,481$ |
| Money Purchase | 0 | 0 | 0 |
| Total A \& PR Fund | 62 | 135,270 | $20,432,363$ |
| Total SBF | 96 | 114,143 | $15,950,425$ |
| Grand Total | $\mathbf{1 5 8}$ | $\mathbf{\$ 2 4 9 , 4 1 3}$ | $\$ \mathbf{\$ 3 6 , 3 8 2 , 7 8 8}$ |

## PUBLIC SAFETY DIVISION <br> EMPLOYER CONTRIBUTIONS TO SUPPORT <br> Retirement Allowances Expressed as Percents of Active Member Payroll

| Valuation Date December 31 | 2010 | $\mathbf{2 0 0 9}$ |
| :--- | :---: | :---: |
| Contributions for | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 2}$ |
| Normal Cost |  |  |
| Age and Service Allowances | $10.58 \%$ | $10.27 \%$ |
| Disability Allowances | $5.23 \%$ | $5.41 \%$ |
| Survivor's Benefits | $0.63 \%$ | $0.66 \%$ |
| Separation Benefits | $3.18 \%$ | $2.93 \%$ |
| Total Normal Cost | $19.62 \%$ | $19.27 \%$ |
| (Member Contributions) | $12.00 \%$ |  |
| Employer Normal Cost | $7.62 \%$ | $11.50 \%$ |
|  |  | $7.77 \%$ |
| Unfunded Actuarial Accrued Liabilities | $9.48 \%$ |  |
| Total Available Contribution | $\mathrm{N} / \mathrm{A}$ | $6.33 \%$ |
| Amortization Years | $\mathbf{N} / \mathrm{A}$ |  |
| Total Pension Employer Contribution Rate | $\mathbf{1 7 . 1 0} \%$ | $\mathbf{1 4 . 1 0} \%$ |

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 <br> Comparative Statement *

| $\begin{array}{\|c} \text { Valuation } \\ \text { Date } \\ \text { December } 31 \\ \hline \end{array}$ | Contribution Rate Effective January 1 | Active Members in Valuation |  |  |  | Computed Employer Contributions as \% of Payroll |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Normal <br> Cost | Unfunded <br> Accrued <br> Liability | Pension Total | Retiree Health | Grand <br> Total |
|  |  | No. | Annual Payroll |  |  |  |  |  |  |  |
|  |  |  | 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)\% | 7.62 \% | 9.48 \% | 17.10 \% | 1.00 \% | 18.10 \% |

* 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, 2010

| Actuarial Present Value | (1) <br> Total <br> Actuarial <br> Present <br> Value | Allocation by Entry Age |  |
| :---: | :---: | :---: | :---: |
|  |  | (2) <br> Portion Covered By Future Normal Cost Contributions | (3) <br> Actuarial <br> Accrued <br> Liabilities (1)-(2) |
| Allowances currently being paid from the Annuity \& Pension Reserve Fund | \$20,432,363 | \$ | \$20,432,363 |
| Allowances currently being paid from the Survivors Benefit Fund | 15,950,425 | - | 15,950,425 |
| Age and service allowances based on service rendered before and likely to be rendered after valuation date | 9,276,572 | 4,089,610 | 5,186,962 |
| Disability allowances likely to be paid present active members who become permanently disabled | 3,296,920 | 1,912,260 | 1,384,660 |
| Survivor benefits likely to be paid to spouses and children of present active members who die before retiring | 412,627 | 221,349 | 191,278 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members | 1,928,039 | 1,227,916 | 700,123 |
| Total | \$51,296,946 | \$7,451,135 | \$43,845,811 |
| Actuarial Value of Assets |  |  | 29,210,245 |
| Unfunded Actuarial Accrued Liability |  |  | \$14,635,566 |

# PUBLIC SAFETY DIVISION <br> Development of Unfunded Actuarial Accrued LiAbilities Comparative Statement * <br> (\$ in Millions Except Averages) 

| Dec. 31 | Defined Benefit <br> Active Payroll |  | Active and Inactive Member Accrued Liabilities for Retirement Allowances |  |  |  | Unfunded /Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Computed Total | Valuation Assets | Unfunded | Amortization Years |  |
|  | Total | Average |  |  |  |  |  |
| 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 | (8) | 15 | N/A | 3.75 |

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 viceversa.

# PUBLIC SAFETY DIVISION <br> Male Active Members in Valuation December 31, 2010 by Attained Age and Years of Service 



## PUBLIC SAFETY DIVISION <br> Female Active Members in Valuation December 31, 2010 by Attained Age and Years of Service



## PUBLIC SAFETY DIVISION <br> Inactive Members in Valuation December 31, 2010 by Attained Age and Years of Service

| Attained | Years of Service to Valuation Date |  |  |  |  |  |  | Total Number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ages | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ |  |
| 15-19 |  |  |  |  |  |  |  |  |
| 20-24 | 2 |  |  |  |  |  |  | 2 |
| 25-29 | 6 |  |  |  |  |  |  | 6 |
| 30-34 | 11 | 2 |  |  |  |  |  | 13 |
| 35-39 | 3 |  |  |  |  |  |  | 3 |
| 40-44 | 1 |  |  |  |  |  |  | 1 |
| 45-49 |  |  |  | 1 |  |  |  | 1 |
| 50-54 |  |  |  |  |  |  |  |  |
| 55-59 |  |  |  | 1 |  |  |  | 1 |
| 60-64 | 1 |  |  |  |  |  |  | 1 |
| 65-69 |  |  |  |  |  |  |  |  |
| 70 \& Over |  |  |  |  |  |  |  |  |
| Totals | 24 | 2 |  | 2 |  |  |  | 28 |

## SECTION VIII

LAW ENFORCEMENT DIVISION

## LAW ENFORCEMENT DIVISION

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, 2010

| Groups | Number | Annual <br> Payroll | Average |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  | Pay | Age | Service |  |
| Men |  |  |  |  |  |
|  |  |  |  |  |  |
| Women | 6,787 | $\$ 389,909,771$ | $\$ 57,450$ | 41.2 yrs. | 14.2 yrs. |
|  | 915 | $48,919,985$ | 53,464 | 41.4 | 13.4 |
| Totals | $\mathbf{7 , 7 0 2}$ | $\$ 438,829,756$ | $\$ 56,976$ | $\mathbf{4 1 . 3}$ yrs. | $\mathbf{1 4 . 1}$ yrs. |

Also included in the valuation were 920 inactive members (889 eligible for deferred retirement allowances and 31 eligible for contribution refunds) and 35 members active in the money purchase plan.

Retired Members in Valuation December 31, 2010

| Fund / Type of Allowance | Number | Current <br> Monthly Benefits | Actuarial <br> Liabilities |
| :--- | ---: | ---: | ---: |
| A \& PR Fund |  |  |  |
| Superannuation Retirement | 2,275 | $\$ 6,798,986$ | $\$ 1,022,935,524$ |
| Disability Retirement | 1,502 | $4,272,542$ | $591,407,216$ |
| Money Purchase | 0 | 0 | 0 |
| Total A \& PR Fund | 3,777 | $11,071,528$ | $1,614,342,740$ |
| Total SBF | 296 |  |  |
| Grand Total |  | 297,382 | $36,826,475$ |
|  | $\mathbf{4 , 0 7 3}$ | $\mathbf{\$ 1 1 , 3 6 8 , 9 1 0}$ | $\mathbf{\$ 1 , 6 5 1 , 1 6 9 , 2 1 5}$ |

## LAW ENFORCEMENT DIVISION <br> Employer Contributions To Support Retirement Allowances Expressed as Percents of Active Member Payroll

| Valuation Date December 31 | $\mathbf{2 0 1 0}$ | $\mathbf{2 0 0 9}$ |
| :--- | :---: | :---: |
| Contributions for | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 2}$ |
| Normal Cost |  |  |
| Age and Service Allowances | $12.12 \%$ | $12.09 \%$ |
| Disability Allowances | $5.19 \%$ | $5.22 \%$ |
| Survivor's Benefits | $0.59 \%$ | $0.59 \%$ |
| Separation Benefits | $2.60 \%$ | $2.36 \%$ |
| Total Normal Cost | $20.50 \%$ | $20.26 \%$ |
| (Member Contributions) | $12.60 \%$ | $12.10 \%$ |
| Employer Normal Cost | $7.90 \%$ | $8.16 \%$ |
| Unfunded Actuarial Accrued Liabilities | $9.20 \%$ |  |
| Total Available Contribution | 21 | $5.94 \%$ |
| Amortization Years | $\mathbf{1 7 . 1 0} \%$ | 24 |
| Total Pension Employer Contribution Rate | $\mathbf{1 4 . 1 0} \%$ |  |

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 <br> COMPARATIVE STATEMENT *

| $\begin{gathered} \text { Valuation } \\ \text { Date } \\ \text { December } 31 \\ \hline \end{gathered}$ | Contribution Rate Effective January 1 | Active Members in Valuation |  |  |  | Computed Employer Contributions as \% of Payroll |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Normal <br> Cost | Unfunded <br> Accrued <br> Liability | $\begin{gathered} \text { Pension } \\ \text { Total } \\ \hline \end{gathered}$ | Retiree <br> Health | Grand Total |
|  |  | No. | Annual Payroll |  |  |  |  |  |  |  |
|  |  |  | Total | Average | Increase |  |  |  |  |  |
|  |  |  | (\$Thousands) |  |  |  |  |  |  |  |
| 1996@ | 1999 | 6,742 | \$229,138 | \$33,987 | 4.8 \% | 10.50 \% | 2.00 \% | 12.50 \% | 4.20 \% | 16.70 \% |
| 1997 | 2000 | 7,256 | 258,897 | 35,680 | 5.0 \% | 10.49 \% | 1.91 \% | 12.40 \% | 4.30 \% | 16.70 \% |
| 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 \% | 7.90 \% | 9.20 \% | 17.10 \% | 1.00 \% | 18.10 \% |

[^1]
## LAW ENFORCEMENT DIVISION Development of Unfunded Actuarial Accrued Liabilities DECEMBER 31, 2010

| Actuarial Present Value | (1) <br> Total Actuarial Present Value | Allocation by Entry Age |  |
| :---: | :---: | :---: | :---: |
|  |  | (2) <br> Portion <br> Covered By <br> Future Normal <br> Cost Contributions | (3) <br> Actuarial Accrued Liabilities (1)-(2) |
| Allowances currently being paid from the Annuity \& Pension Reserve Fund | \$ 1,614,342,740 | \$ | \$ 1,614,342,740 |
| Allowances currently being paid from the Survivors Benefit Fund | 36,826,475 |  | 36,826,475 |
| Age and service allowances based on service rendered before and likely to be rendered after valuation date | 1,726,694,518 | 478,667,585 | 1,248,026,933 |
| Disability allowances likely to be paid present active members who become permanently disabled | 426,249,070 | 200,787,689 | 225,461,381 |
| Survivor benefits likely to be paid to spouses and children of present active members who die before retiring | 54,909,091 | 22,480,942 | 32,428,149 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members | 132,197,511 | 102,656,122 | 29,541,389 |
| Total | \$3,991,219,405 | \$804,592,338 | \$3,186,627,067 |
| Actuarial Value of Assets |  |  | 2,522,790,700 |
| Unfunded Actuarial Accrued Liability |  |  | \$ 663,836,367 |

# LAW ENFORCEMENT DIVISION <br> Development of Unfunded Actuarial Accrued Liabilities Comparative Statement * <br> (\$ in Millions Except Averages) 

| Dec. 31 | Defined Benefit <br> Active Payroll |  | Active and Inactive Member Accrued Liabilities for Retirement Allowances |  |  |  | Unfunded /Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Computed Total | Valuation Assets | Unfunded | Amortization Years |  |
|  | Total | Average |  |  |  |  |  |
| 1996@ | \$229 | \$33,987 | \$ 711 | \$ 676 | \$ 35 | 30 | 0.15 |
| 1997 | 259 | 35,680 | 821 | 773 | 48 | 10 | 0.19 |
| 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 | 1,535 | 871 | 664 | 25 | 1.51 |

\# 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 viceversa.

## LAW ENFORCEMENT DIVISION <br> Male Active Members in Valuation December 31, 2010 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+ |  |
| $15-19$ <br> Tot. Pay Avg. Pay |  |  |  |  |  |  |  |  |
| 20-24 | 87 | 2 |  |  |  |  |  | 89 |
| Tot. Pay | \$2,822,783 | \$104,980 |  |  |  |  |  | \$2,927,763 |
| Avg. Pay | \$32,446 | \$52,490 |  |  |  |  |  | \$32,896 |
| 25-29 | 324 | 183 | 4 |  |  |  |  | 511 |
| Tot. Pay | \$14,092,581 | \$9,419,477 | \$219,057 |  |  |  |  | \$23,731,115 |
| Avg. Pay | \$43,496 | \$51,473 | \$54,764 |  |  |  |  | \$46,441 |
| 30-34 | 189 | 485 | 336 | 8 |  |  |  | 1,018 |
| Tot. Pay | \$8,227,207 | \$26,784,636 | \$19,366,706 | \$447,411 |  |  |  | \$54,825,960 |
| Avg. Pay | \$43,530 | \$55,226 | \$57,639 | \$55,926 |  |  |  | \$53,857 |
| 35-39 | 116 | 314 | 708 | 285 | 5 |  |  | 1,428 |
| Tot. Pay | \$5,173,977 | \$17,132,664 | \$41,749,191 | \$17,202,985 | \$295,196 |  |  | \$81,554,013 |
| Avg. Pay | \$44,603 | \$54,563 | \$58,968 | \$60,361 | \$59,039 |  |  | \$57,111 |
| 40-44 | 70 | 165 | 381 | 644 | 228 | 4 |  | 1,492 |
| Tot. Pay | \$2,957,277 | \$8,571,930 | \$22,407,862 | \$39,767,559 | \$14,877,103 | \$361,028 |  | \$88,942,759 |
| Avg. Pay | \$42,247 | \$51,951 | \$58,813 | \$61,751 | \$65,250 | \$90,257 |  | \$59,613 |
| 45-49 | 30 | 70 | 163 | 242 | 359 | 162 | 4 | 1,030 |
| Tot. Pay | \$1,111,683 | \$3,691,390 | \$9,209,555 | \$14,529,867 | \$22,794,867 | \$11,028,901 | \$286,314 | \$62,652,577 |
| Avg. Pay | \$37,056 | \$52,734 | \$56,500 | \$60,041 | \$63,495 | \$68,080 | \$71,579 | \$60,828 |
| 50-54 | 13 | 30 | 60 | 123 | 184 | 178 | 58 | 646 |
| Tot. Pay | \$569,858 | \$1,661,118 | \$3,253,268 | \$7,179,604 | \$11,440,276 | \$12,338,199 | \$4,321,008 | \$40,763,331 |
| Avg. Pay | \$43,835 | \$55,371 | \$54,221 | \$58,371 | \$62,175 | \$69,316 | \$74,500 | \$63,101 |
| 55-59 | 9 | 17 | 39 | 52 | 82 | 105 | 70 | 374 |
| Tot. Pay | \$384,233 | \$905,175 | \$2,141,472 | \$2,893,335 | \$4,805,798 | \$6,966,123 | \$5,034,955 | \$23,131,091 |
| Avg. Pay | \$42,693 | \$53,246 | \$54,910 | \$55,641 | \$58,607 | \$66,344 | \$71,928 | \$61,848 |
| 60-64 | 5 | 10 | 13 | 39 | 38 | 22 | 24 | 151 |
| Tot. Pay | \$167,669 | \$504,975 | \$582,537 | \$2,077,629 | \$2,379,289 | \$1,357,640 | \$1,618,393 | \$8,688,132 |
| Avg. Pay | \$33,534 | \$50,498 | \$44,811 | \$53,273 | \$62,613 | \$61,711 | \$67,433 | \$57,537 |
| 65-69 | 1 | 5 | 5 | 6 | 10 | 5 | 9 | 41 |
| Tot. Pay | \$67,054 | \$213,743 | \$286,212 | \$310,870 | \$580,473 | \$298,796 | \$575,878 | \$2,333,026 |
| Avg. Pay | \$67,054 | \$42,749 | \$57,242 | \$51,812 | \$58,047 | \$59,759 | \$63,986 | \$56,903 |
| 70 \& Over |  | 2 | 1 | 1 |  | 1 | 2 | 7 |
| Tot. Pay |  | \$74,675 | \$56,590 | \$50,677 |  | \$35,699 | \$142,363 | \$360,004 |
| Avg. Pay |  | \$37,338 | \$56,590 | \$50,677 |  | \$35,699 | \$71,182 | \$51,429 |
| Totals | 844 | 1,283 | 1,710 | 1,400 | 906 | 477 | 167 | 6,787 |
| Tot. Pay | \$35,574,322 | \$69,064,763 | \$99,272,450 | \$84,459,937 | \$57,173,002 | \$32,386,386 | \$11,978,911 | \$389,909,771 |
| Avg. Pay | \$42,150 | \$53,831 | \$58,054 | \$60,329 | \$63,105 | \$67,896 | \$71,730 | \$57,450 |

## LAW ENFORCEMENT DIVISION <br> Female Active Members in Valuation December 31, 2010 by Attained Age and Years of Service

| $\begin{gathered} \hline \hline \text { Attained } \\ \text { Ages } \end{gathered}$ | 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 |  |  |  |  |  |  | 8 |
| Tot. Pay | \$263,338 |  |  |  |  |  |  | \$263,338 |
| Avg. Pay | \$32,917 |  |  |  |  |  |  | \$32,917 |
| 25-29 | 47 | 29 | 1 |  |  |  |  | 77 |
| Tot. Pay | \$1,987,396 | \$1,507,155 | \$37,325 |  |  |  |  | \$3,531,876 |
| Avg. Pay | \$42,285 | \$51,971 | \$37,325 |  |  |  |  | \$45,869 |
| 30-34 | 27 | 81 | 43 |  |  |  |  | 151 |
| Tot. Pay | \$1,058,557 | \$4,225,420 | \$2,380,870 |  |  |  |  | \$7,664,847 |
| Avg. Pay | \$39,206 | \$52,166 | \$55,369 |  |  |  |  | \$50,761 |
| 35-39 | 11 | 37 | 93 | 35 |  |  |  | 176 |
| Tot. Pay | \$511,023 | \$1,902,587 | \$5,221,539 | \$1,947,225 |  |  |  | \$9,582,374 |
| Avg. Pay | \$46,457 | \$51,421 | \$56,146 | \$55,635 |  |  |  | \$54,445 |
| 40-44 | 5 | 30 | 50 | 71 | 14 | 2 |  | 172 |
| Tot. Pay | \$200,115 | \$1,509,372 | \$2,757,420 | \$4,214,215 | \$861,677 | \$124,810 |  | \$9,667,609 |
| Avg. Pay | \$40,023 | \$50,312 | \$55,148 | \$59,355 | \$61,548 | \$62,405 |  | \$56,207 |
| 45-49 | 8 | 18 | 30 | 37 | 43 | 12 |  | 148 |
| Tot. Pay | \$322,887 | \$891,912 | \$1,662,529 | \$1,832,664 | \$2,620,138 | \$791,499 |  | \$8,121,629 |
| Avg. Pay | \$40,361 | \$49,551 | \$55,418 | \$49,531 | \$60,933 | \$65,958 |  | \$54,876 |
| 50-54 | 4 | 6 | 12 | 31 | 21 | 18 | 12 | 104 |
| Tot. Pay | \$133,629 | \$237,248 | \$580,646 | \$1,798,965 | \$1,074,333 | \$1,142,755 | \$742,449 | \$5,710,025 |
| Avg. Pay | \$33,407 | \$39,541 | \$48,387 | \$58,031 | \$51,159 | \$63,486 | \$61,871 | \$54,904 |
| 55-59 | 2 | 2 | 12 | 9 | 8 | 19 | 4 | 56 |
| Tot. Pay | \$65,083 | \$119,114 | \$681,414 | \$467,966 | \$421,492 | \$1,123,783 | \$264,650 | \$3,143,502 |
| Avg. Pay | \$32,542 | \$59,557 | \$56,785 | \$51,996 | \$52,687 | \$59,146 | \$66,163 | \$56,134 |
| 60-64 |  | 1 | 3 | 4 | 8 | 4 | 1 | 21 |
| Tot. Pay |  | \$55,210 | \$134,752 | \$180,323 | \$456,355 | \$266,869 | \$65,064 | \$1,158,573 |
| Avg. Pay |  | \$55,210 | \$44,917 | \$45,081 | \$57,044 | \$66,717 | \$65,064 | \$55,170 |
| 65-69 |  |  |  |  | 1 | 1 |  | 2 |
| Tot. Pay |  |  |  |  | \$50,270 | \$25,942 |  | \$76,212 |
| Avg. Pay |  |  |  |  | \$50,270 | \$25,942 |  | \$38,106 |
| 70 \& Over |  |  |  |  |  |  |  |  |
| Tot. Pay |  |  |  |  |  |  |  |  |
| Avg. Pay |  |  |  |  |  |  |  |  |
| Totals | 112 | 204 | 244 | 187 | 95 | 56 | 17 | 915 |
| Tot. Pay | \$4,542,028 | \$10,448,018 | \$13,456,495 | \$10,441,358 | \$5,484,265 | \$3,475,658 | \$1,072,163 | \$48,919,985 |
| Avg. Pay | \$40,554 | \$51,216 | \$55,150 | \$55,836 | \$57,729 | \$62,065 | \$63,068 | \$53,464 |

## LAW ENFORCEMENT DIVISION <br> InActive Members in Valuation December 31, 2010 by Attained Age and Years of Service

| Attained <br> Ages | Years of Service to Valuation Date |  |  |  |  |  |  | Total <br> Number |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | $\mathbf{0 - 4}$ | $\mathbf{5 - 9}$ | $\mathbf{1 0 - 1 4}$ | $\mathbf{1 5 - 1 9}$ | $\mathbf{2 0 - 2 4}$ | $\mathbf{2 5 - 2 9}$ | $\mathbf{3 0 +}$ |  |
| $15-19$ |  |  |  |  |  |  |  |  |
| $20-24$ | 17 |  |  |  |  |  |  | 17 |
| $25-29$ | 87 | 9 |  |  |  |  |  | 96 |
| $30-34$ | 94 | 19 | 6 |  |  |  |  | 119 |
| $35-39$ | 126 | 34 | 17 | 4 | 1 |  |  | 182 |
| $40-44$ | 129 | 28 | 18 | 8 | 3 | 1 |  | 187 |
| $45-49$ | 63 | 14 | 13 | 14 | 2 | 2 |  | 108 |
| $50-54$ | 35 | 15 | 14 | 12 | 9 | 2 |  | 87 |
| $55-59$ | 41 | 7 | 12 | 8 | 5 |  |  | 73 |
| $60-64$ | 25 | 3 | 1 |  |  |  |  | 29 |
| $65-69$ | 9 | 1 |  |  |  |  |  | 10 |
| $70 \&$ Over | 11 |  |  |  | 1 |  |  | 12 |
| Totals | $\mathbf{6 3 7}$ | $\mathbf{1 3 0}$ | $\mathbf{8 1}$ | $\mathbf{4 6}$ | $\mathbf{2 1}$ | $\mathbf{5}$ |  | $\mathbf{9 2 0}$ |

## SECTION IX <br> ALLOWANCES BEING PAID TO RETIREES AND BENEFICIARIES

Monthly Allowances of Retired Lives by Year of Retirement
AS OF DECEMBER 31, 2010

| Year of Retirement | No. | Initial | Post-Ret. Increase | Total | Average |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2010 | 10,640 | \$21,945,839 | \$ 108,190 | \$ 22,054,029 | \$2,073 |
| 2009 | 10,828 | 22,909,867 | 758,012 | 23,667,879 | 2,186 |
| 2008 | 9,596 | 18,290,665 | 1,155,712 | 19,446,377 | 2,027 |
| 2007 | 9,113 | 16,876,672 | 1,582,615 | 18,459,287 | 2,026 |
| 2006 | 9,757 | 17,114,293 | 2,103,201 | 19,217,494 | 1,970 |
| 2005 | 9,162 | 16,412,058 | 2,502,864 | 18,914,922 | 2,064 |
| 2004 | 8,675 | 14,636,133 | 2,663,488 | 17,299,621 | 1,994 |
| 2003 | 8,166 | 13,919,372 | 2,943,732 | 16,863,104 | 2,065 |
| 2002 | 9,073 | 15,047,619 | 3,641,913 | 18,689,532 | 2,060 |
| 2001 | 7,493 | 11,708,582 | 3,173,411 | 14,881,993 | 1,986 |
| 2000 | 7,225 | 10,550,112 | 3,126,955 | 13,677,067 | 1,893 |
| 1999 | 6,358 | 8,798,453 | 2,752,117 | 11,550,570 | 1,817 |
| 1998 | 6,294 | 8,054,638 | 2,665,531 | 10,720,169 | 1,703 |
| 1997 | 5,878 | 7,687,076 | 2,745,005 | 10,432,081 | 1,775 |
| 1996 | 5,757 | 6,952,834 | 2,679,242 | 9,632,076 | 1,673 |
| 1995 | 5,192 | 6,049,539 | 2,479,486 | 8,529,025 | 1,643 |
| 1990-1994 | 20,327 | 20,134,729 | 10,049,197 | 30,183,926 | 494 |
| 1985-1989 | 16,650 | 13,793,994 | 9,172,278 | 22,966,272 | 551 |
| 1980-1984 | 9,366 | 5,099,760 | 4,583,902 | 9,683,662 | 489 |
| 1975-1979 | 4,357 | 1,707,366 | 2,447,211 | 4,154,577 | 562 |
| 1970-1974 | 1,131 | 278,600 | 595,961 | 874,561 | 527 |
| 1965-1969 | 301 | 65,084 | 203,703 | 268,787 | 677 |
| 1960-1964 | 144 | 32,022 | 107,967 | 139,989 | 750 |
| Before 1960 | 0 | 0 | 0 | 0 |  |
| TOTAL | 181,483 | \$258,065,307 | \$64,241,693 | \$322,307,000 | \$1,776 |


| Years of Service | No. | Initial | Post-Ret. Increase | Total | Average |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $<5$ or n/a | 6,309 | \$ 2,039,856 | \$ 394,978 | \$ 2,434,834 | \$386 |
| 5 | 4,235 | 1,553,721 | 404,654 | 1,958,375 | 462 |
| 6 | 3,407 | 1,369,523 | 356,821 | 1,726,344 | 507 |
| 7 | 3,201 | 1,362,101 | 356,006 | 1,718,107 | 537 |
| 8 | 2,942 | 1,355,559 | 340,284 | 1,695,843 | 576 |
| 9 | 2,208 | 1,134,086 | 288,144 | 1,422,230 | 644 |
| 10 | 9,212 | 4,135,534 | 1,114,818 | 5,250,352 | 570 |
| 11 | 5,399 | 2,824,905 | 748,283 | 3,573,188 | 662 |
| 12 | 5,311 | 2,893,283 | 810,754 | 3,704,037 | 697 |
| 13 | 4,769 | 2,953,555 | 812,246 | 3,765,801 | 790 |
| 14 | 4,601 | 2,937,427 | 831,841 | 3,769,268 | 819 |
| 15 | 5,060 | 3,501,934 | 1,004,515 | 4,506,449 | 891 |
| 16 | 4,884 | 3,571,842 | 1,036,926 | 4,608,768 | 944 |
| 17 | 4,434 | 3,620,054 | 1,053,230 | 4,673,284 | 1,054 |
| 18 | 4,397 | 3,813,162 | 1,115,435 | 4,928,597 | 1,121 |
| 19 | 4,359 | 4,010,863 | 1,150,879 | 5,161,742 | 1,184 |
| 20 | 5,432 | 5,475,666 | 1,523,613 | 6,999,279 | 1,289 |
| 21 | 4,588 | 4,909,240 | 1,437,434 | 6,346,674 | 1,383 |
| 22 | 4,354 | 5,076,224 | 1,447,038 | 6,523,262 | 1,498 |
| 23 | 4,258 | 5,302,544 | 1,475,559 | 6,778,103 | 1,592 |
| 24 | 4,008 | 5,356,131 | 1,489,852 | 6,845,983 | 1,708 |
| 25 | 8,074 | 12,102,310 | 3,227,982 | 15,330,292 | 1,899 |
| 26 | 5,088 | 8,164,167 | 2,309,468 | 10,473,635 | 2,058 |
| 27 | 5,187 | 9,133,390 | 2,487,636 | 11,621,026 | 2,240 |
| 28 | 5,670 | 11,494,725 | 2,881,935 | 14,376,660 | 2,536 |
| 29 | 5,466 | 11,935,148 | 2,693,742 | 14,628,890 | 2,676 |
| 30 | 22,536 | 52,646,913 | 11,116,847 | 63,763,760 | 2,829 |
| 31 | 7,023 | 16,915,686 | 3,818,893 | 20,734,579 | 2,952 |
| 32 | 5,449 | 13,501,652 | 3,196,784 | 16,698,436 | 3,064 |
| 33 | 4,209 | 10,809,931 | 2,520,505 | 13,330,436 | 3,167 |
| 34 | 3,409 | 9,041,816 | 2,172,369 | 11,214,185 | 3,290 |
| 35 | 3,192 | 8,609,986 | 2,086,523 | 10,696,509 | 3,351 |
| 36 | 2,287 | 6,165,776 | 1,530,094 | 7,695,870 | 3,365 |
| 37 | 1,783 | 4,786,974 | 1,243,874 | 6,030,848 | 3,382 |
| 38 | 1,336 | 3,614,545 | 941,633 | 4,556,178 | 3,410 |
| 39 | 1,085 | 2,869,341 | 819,136 | 3,688,477 | 3,400 |
| 40 \& Over | 2,321 | 7,075,737 | 2,000,962 | 9,076,699 | 3,911 |
| TOTAL | 181,483 | \$258,065,307 | \$64,241,693 | \$322,307,000 | \$1,776 |

Annuity and Pension Reserve Fund
Annual Allowance, Reported Assets and Actuarial Liabilities
COMPARATIVE STATEMENT
(\$ Millions)

| Valuation Date | Annual Allowances |  |  | Reported Assets* | Actuarial <br> Liabilities | Ratio of Assets to Liabilities | Ratio of DB Active to Retired |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ <br> Millions | \% of DB <br> Payroll |  |  |  |  |
| 12/31/1981@ | 68,089 | \$ 272 | 8.2 \% | \$ 3,084 | \$ 2,994 | 103.0 \% | 3.7 |
| 12/31/1982@ | 71,253 | 299 | 8.2 \% | 3,173 | 3,068 | 103.4 \% | 3.5 |
| 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 | 40,184 | 100.0 \% | 2.1 |

[^2]
## Annuity and Pension Reserve Fund RETIREES AND BENEFICIARIES DECEMBER 31, 2010 Type of Benefit, Monthly Amount and Actuarial Liabilities

|  |  |  |  |
| :--- | ---: | ---: | ---: |
| Type of Allowance |  | Current |  |
|  | Number | Total \$ | Liabilities |
|  |  |  |  |
| Superannuation Retirement |  |  |  |
| Plan A - Joint \& 50\% | 21,002 | $\$ 45,496,521$ | $\$ 6,279,419,417$ |
| Plan B - Straight Life | 65,513 | $114,464,763$ | $13,469,719,868$ |
| Plan C - Special Joint \& Survivor | 16,059 | $37,233,155$ | $5,262,817,025$ |
| Plan D - Joint \& 100\% | 21,643 | $45,476,506$ | $7,228,451,336$ |
| Plan E - Life \& 0 to 5 Years Guaranteed | 343 | 505,673 | $58,768,927$ |
| - Life \& 6 to 10 Years Guaranteed | 483 | 783,843 | $91,182,591$ |
| - Life \& 11 to 15 Years Guaranteed | 685 | 939,109 | $111,567,494$ |
| - Life \& 16 to 20 Years Guaranteed | 43 | 88,785 | $13,676,857$ |
|  |  |  |  |
| Money Purchase | 2,113 | 837,259 | $83,664,062$ |
| Survivor Beneficiary - Life Benefit | 15,875 | $16,082,687$ | $1,465,378,434$ |
| Survivor Beneficiary - Temporary Benefit | 74 | 79,597 | $3,537,214$ |
| Total Superannuation | 143,833 | $\$ 261,987,898$ | $\$ 34,068,183,225$ |
| Disability Retirement | 22,414 | $\$ 46,747,003$ | $\$ 6,115,960,008$ |
| Total from A \& PR | $\mathbf{1 6 6 , 2 4 7}$ | $\$ 308,734,901$ | $\$ 40,184,143,233$ |

## Annuity and Pension Reserve Fund <br> RETIREES AND BENEFICIARIES DECEMBER 31, 2010 Type of Benefit and Amount by Gender of Recipient

|  | Men |  | Women |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Type of Allowance | Number | Monthly Allowances | Number | Monthly Allowances | Number | Monthly <br> Allowances |
| Superannuation Retirement |  |  |  |  |  |  |
| Plan A - Joint \& 50\% | 14,338 | \$33,049,087 | 6,664 | \$ 12,447,434 | 21,002 | \$ 45,496,521 |
| Plan B - Straight Life | 20,003 | 40,790,774 | 45,510 | 73,673,989 | 65,513 | 114,464,763 |
| Plan C - Special Joint \& Survivor | 6,724 | 19,117,731 | 9,335 | 18,115,424 | 16,059 | 37,233,155 |
| Plan D - Joint \& 100\% | 17,674 | 38,749,047 | 3,969 | 6,727,459 | 21,643 | 45,476,506 |
| Plan E - Life \& 0 to 5 Years Guaranteed | 146 | 225,362 | 197 | 280,311 | 343 | 505,673 |
| - Life \& 6 to 10 Years Guaranteed | 243 | 400,912 | 240 | 382,931 | 483 | 783,843 |
| - Life \& 11 to 15 Years Guaranteed | 409 | 554,634 | 276 | 384,475 | 685 | 939,109 |
| - Life \& 16 to 20 Years Guaranteed | 29 | 56,828 | 14 | 31,957 | 43 | 88,785 |
| Money Purchase | 1,443 | 669,404 | 670 | 167,855 | 2,113 | 837,259 |
| Survivor Beneficiary - Life Benefit | 1,423 | 927,420 | 14,452 | 15,155,267 | 15,875 | 16,082,687 |
| Survivor Beneficiary - Temporary Benefit | 21 | 18,765 | 53 | 60,832 | 74 | 79,597 |
| Total Superannuation | 62,453 | \$134,559,964 | 81,380 | \$127,427,934 | 143,833 | \$261,987,898 |
| Disability Retirement | 11,469 | \$ 26,430,219 | 10,945 | \$ 20,316,784 | 22,414 | \$ 46,747,003 |
| Total from A \& PR | 73,922 | \$160,990,183 | 92,325 | \$147,744,718 | 166,247 | \$308,734,901 |

## Annuities Being Paid by Type <br> DECEMBER 31, 2010

## Annuity and Pension Reserve Fund



## Annuity and Pension Reserve Fund RETIREES AND BENEFICIARIES DECEMBER 31, 2010 Current Monthly Total \$ by Attained Ages

| Attained Ages | Superannuation |  | Disability |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Monthly Total \$ | No. | Monthly Total \$ | No. | Monthly Total \$ |
| Under 20 | 10 | \$ 4,615 |  |  | 10 | \$ 4,615 |
| 20-24 | 12 | 5,582 | 1 | \$ 1,437 | 13 | 7,019 |
| 25-29 | 13 | 8,850 | 10 | 13,815 | 23 | 22,665 |
| 30-34 | 21 | 12,751 | 84 | 127,124 | 105 | 139,875 |
| 35-39 | 28 | 17,243 | 331 | 578,932 | 359 | 596,175 |
| 40-44 | 57 | 45,054 | 944 | 2,064,849 | 1,001 | 2,109,903 |
| 45-49 | 516 | 1,222,269 | 2,183 | 5,286,797 | 2,699 | 6,509,066 |
| 50-54 | 5,063 | 14,511,913 | 3,895 | 9,294,301 | 8,958 | 23,806,214 |
| 55-59 | 12,361 | 37,443,545 | 5,040 | 11,316,948 | 17,401 | 48,760,493 |
| 60-64 | 23,859 | 57,507,914 | 4,849 | 9,928,222 | 28,708 | 67,436,136 |
| 65-69 | 24,720 | 45,997,519 | 2,392 | 4,391,312 | 27,112 | 50,388,831 |
| 70-74 | 22,110 | 36,209,019 | 1,264 | 2,017,082 | 23,374 | 38,226,101 |
| 75-79 | 18,630 | 27,374,700 | 704 | 920,554 | 19,334 | 28,295,254 |
| 80-84 | 16,143 | 20,801,158 | 447 | 524,284 | 16,590 | 21,325,442 |
| 85-89 | 10,757 | 12,165,620 | 199 | 210,899 | 10,956 | 12,376,519 |
| 90-94 | 4,661 | 4,459,971 | 62 | 62,887 | 4,723 | 4,522,858 |
| 95 \& Over | 1,205 | 1,045,506 | 9 | 7,560 | 1,214 | 1,053,066 |
|  <br> Money Purchase | 3,667 | 3,154,669 |  |  | 3,667 | 3,154,669 |
| Totals | 143,833 | \$261,987,898 | 22,414 | \$46,747,003 | 166,247 | \$308,734,901 |

Annuity and Pension Reserve Fund Benefits Being Paid by Attained Ages DECEMBER 31, 2010



# Annuity and Pension Reserve Fund Percent of Recipients <br> by Age Groups <br> AND YEAR 

| Attained Age Group | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 | 1999 | 1998 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 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\% |
| 30-39 | 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 | 2.2\% | 2.5\% | 2.7\% | 2.9\% | 3.1\% | 3.3\% | 3.4\% | 3.5\% | 3.5\% | 3.3\% | 3.2\% | 3.1\% | 2.9\% |
| 50-59 | 15.9\% | 16.0\% | 15.9\% | 15.9\% | 16.1\% | 15.8\% | 14.7\% | 13.7\% | 12.9\% | 11.7\% | 10.7\% | 9.8\% | 9.2\% |
| 60-69 | 33.6\% | 32.5\% | 31.5\% | 30.7\% | 29.6\% | 28.9\% | 28.8\% | 28.6\% | 28.3\% | 28.1\% | 28.2\% | 28.9\% | 29.1\% |
| 70-79 | 25.7\% | 26.2\% | 26.7\% | 27.2\% | 27.7\% | 28.5\% | 29.4\% | 30.4\% | 31.5\% | 32.7\% | 34.0\% | 35.5\% | 36.3\% |
| 80-89 | 16.6\% | 16.9\% | 17.4\% | 17.7\% | 17.9\% | 18.0\% | 18.2\% | 18.3\% | 18.4\% | 18.7\% | 18.5\% | 18.7\% | 18.6\% |
| 90 \& Over | 3.6\% | 3.4\% | 3.4\% | 3.3\% | 3.2\% | 3.2\% | 3.2\% | 3.2\% | 3.1\% | 3.1\% | 3.0\% | 3.1\% | 3.0\% |
| Period Certain <br> \& MP | 2.2\% | 2.1\% | 2.1\% | 1.9\% | 1.9\% | 1.8\% | 1.8\% | 1.8\% | 1.7\% | 1.8\% | 1.8\% | 0.3\% | 0.3\% |
| TOTALS | 100.1\% | 99.9\% | 100.1\% | 100.0\% | 100.0\% | 100.0\% | 100.0\% | 100.0\% | 100.0\% | 100.0\% | 100.0\% | 100.0\% | 100.0\% |
| Average Age | 70.0 | 70.0 | 70.1 | 70.1 | 70.2 | 70.2 | 70.4 | 70.6 | 70.7 | 71.0 | 71.2 | 71.4 | 71.5 |

# STATE DIVISION <br> Survivor Benefit Fund Tabulated by <br> Type of Benefit Being Paid and Monthly Amount DECEMBER 31, 2010 

| Group | Number | Current Total | Actuarial <br> Liabilities |
| :---: | :---: | :---: | :---: |
| S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation |  |  |  |
| Men | 139 | \$ 137,205 | \$ 14,303,233 |
| Women | 686 | 936,587 | 96,035,919 |
| Totals | 825 | \$1,073,792 | \$110,339,152 |
| S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount |  |  |  |
| Widower - no child | 617 | \$ 635,003 | \$ 78,522,802 |
| Widower - child | 57 | 53,430 | 8,844,239 |
| Child's record | 133 | 70,172 | 4,783,030 |
| Parent | 0 | 0 | 0 |
| Other | 0 | 0 | 0 |
| Child only | 197 | 154,252 | 7,691,700 |
| Subtotals - male | 1,004 | 912,857 | \$ 99,841,771 |
| Widower - no child | 2,211 | \$2,346,499 | \$289,084,747 |
| Widower - child | 144 | 155,112 | 27,899,557 |
| Child's record | 173 | 96,414 | 7,333,651 |
| Parent | 2 | 2,280 | 153,220 |
| Other | 2 | 1,548 | 254,563 |
| Child only | 209 | 162,186 | 8,256,021 |
| Subtotals - female | 2,741 | 2,764,039 | 332,981,759 |
| Totals | 3,745 | \$3,676,896 | \$432,823,530 |
| Total Benefits Being Paid from Survivor Benefit Fund |  |  |  |
| Men | 1,143 | \$ 1,050,062 | \$114,145,004 |
| Women | 3,427 | 3,700,626 | 429,017,678 |
| Totals | 4,570 | \$4,750,688 | \$543,162,682 |

# LOCAL GOVERNMENT DIVISION <br> Survivor Benefit Fund Tabulated by Type of Benefit Being Paid and Monthly Amount DECEMBER 31, 2010 

| Group | Number | Current <br> Total | Actuarial Liabilities |
| :---: | :---: | :---: | :---: |
| S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation |  |  |  |
| Men | 201 | \$ 162,118 | \$ 15,432,713 |
| Women | 1,396 | 1,514,221 | 153,608,652 |
| Totals | 1,597 | 1,676,339 | 169,041,365 |
| S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount |  |  |  |
| Widower - no child | 1,014 | \$ 765,991 | \$ 92,241,718 |
| Widower - child | 94 | 66,030 | 11,329,025 |
| Child's record | 219 | 104,251 | 7,396,120 |
| Parent | 0 | 0 | 0 |
| Other | 2 | 1,156 | 141,406 |
| Child only | 355 | 238,626 | 13,768,795 |
| Subtotals - male | 1,684 | 1,176,054 | 124,877,064 |
| Widower - no child | 5,122 | \$4,323,892 | \$514,677,226 |
| Widower - child | 317 | 301,054 | 52,738,281 |
| Child's record | 390 | 196,610 | 14,854,714 |
| Parent | 2 | 2,001 | 126,789 |
| Other | 3 | 2,288 | 276,537 |
| Child only | 345 | 219,046 | 11,779,563 |
| Subtotals - female | 6,179 | 5,044,891 | 594,453,110 |
| Totals | 7,863 | 6,220,945 | 719,330,174 |
| Total Benefits Being Paid from Survivor Benefit Fund |  |  |  |
| Men | 1,885 | \$1,338,172 | \$140,309,777 |
| Women | 7,575 | 6,559,112 | 748,061,762 |
| Totals | 9,460 | \$7,897,284 | \$888,371,539 |

# PUBLIC SAFETY DIVISION <br> Survivor Benefit Fund Tabulated by <br> Type of Benefit Being Paid and Monthly Amount DECEMBER 31, 2010 

| Group | Number | Current | t Total | Actuarial <br> Liabilities |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation |  |  |  |  |  |
| Men | 0 | \$ | 0 | \$ | 0 |
| Women | 0 |  | 0 |  | 0 |
| Totals | 0 | \$ | 0 | \$ | 0 |
| S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount |  |  |  |  |  |
| Widower - no child | 3 | \$ | 3,455 | \$ | 310,086 |
| Widower - child | 0 |  | 0 |  | 0 |
| Child's record | 3 |  | 1,923 |  | 103,559 |
| Other | 0 |  | 0 |  | 0 |
| Child only | 6 |  | 5,345 |  | 367,525 |
| Subtotals - male | 12 |  | 10,723 |  | 781,170 |
| Widower - no child | 69 | \$ | 89,284 |  | 3,861,242 |
| Widower - child | 4 |  | 4,909 |  | 902,786 |
| Child's record | 2 |  | 1,697 |  | 107,678 |
| Other | 5 |  | 5,589 |  | 147,345 |
| Child only | 0 |  | 0 |  | 0 |
| Subtotals - female | 80 |  | 101,479 |  | 5,019,051 |
| Totals | 92 |  | 112,202 |  | 5,800,221 |
| Total Benefits Being Paid from Survivor Benefit Fund |  |  |  |  |  |
| Men | 12 |  | 10,723 | \$ | 781,170 |
| Women | 80 |  | 101,479 |  | 5,019,051 |
| Totals | 92 |  | 112,202 |  | 5,800,221 |

# LAW ENFORCEMENT DIVISION <br> Survivor Benefit Fund Tabulated by <br> Type of Benefit Being Paid and Monthly Amount DECEMBER 31, 2010 

| Group | Number | Current Total | Actuarial Liabilities |
| :---: | :---: | :---: | :---: |
| S-1 - Survivor Benefit to Beneficiary of Deceased Member Joint and Survivor Computation |  |  |  |
| Men | 0 | \$ 0 | \$ 0 |
| Women | 54 | 91,421 | 11,286,350 |
| Totals | 54 | \$ 91,421 | \$11,286,350 |
| S-2 - Survivor Benefit to Beneficiary of Deceased Member Fixed Rate Amount |  |  |  |
| Widower - no child | 5 | \$ 4,417 | \$ 675,377 |
| Widower - child | 2 | 1,904 | 343,340 |
| Child's record | 12 | 6,291 | 485,467 |
| Other | 0 | 0 | 0 |
| Child only | 20 | 15,223 | 933,151 |
| Subtotals - male | 39 | 27,835 | 2,437,335 |
| Widower - no child | 138 | \$ 128,655 | \$17,884,622 |
| Widower - child | 18 | 17,744 | 3,299,414 |
| Child's record | 18 | 8,475 | 603,515 |
| Other | 18 | 13,553 | 461,330 |
| Child only | 0 | 0 | 0 |
| Subtotals - female | 192 | 168,427 | 22,248,881 |
| Totals | 231 | \$ 196,262 | \$24,686,216 |
| Total Benefits Being Paid from Survivor Benefit Fund |  |  |  |
| Men | 39 | \$ 27,835 | \$ 2,437,335 |
| Women | 246 | 259,848 | 33,535,231 |
| Totals | 285 | \$ 287,683 | \$35,972,566 |

## STATE DIVISION <br> DEFERRED SURVIVOR BENEFICIARIES <br> Tabulated by Gender and Deferred Age <br> DECEMBER 31, 2010

| Group | Number | Current <br> Total | Actuarial <br> Liabilities |  |  |  |
| :--- | ---: | ---: | ---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| Widowers |  |  |  |  |  |  |
| Deferred to age 50 | 0 | $\$$ | 0 |  |  |  |
| Deferred to age 62 | 73 | 47,397 | $4,300,227$ |  |  |  |
| Deferred to age 65 | 0 | 0 | 0 |  |  |  |
| Total | 73 | 47,397 | $4,300,227$ |  |  |  |
|  |  |  |  |  |  |  |
| Widows | 2 | 1,696 | 246,728 |  |  |  |
| Deferred to age 50 | 168 | 116,663 | $10,489,650$ |  |  |  |
| Deferred to age 62 | 1 | 877 | 37,122 |  |  |  |
| Deferred to age 65 | 171 | 119,236 | $10,773,500$ |  |  |  |
| Total |  |  |  |  |  |  |
|  |  | $\mathbf{2 4 4}$ | $\mathbf{\$ 1 6 6 , 6 3 3}$ |  |  |  |
| Totals |  |  |  |  |  |  |

## LOCAL GOVERNMENT DIVISION <br> DEFERRED SURVIVOR BENEFICIARIES <br> TAbULATED By Gender and Deferred Age <br> DECEMBER 31, 2010

| Group | Number | Current <br> Total | Actuarial <br> Liabilities |
| :--- | :---: | ---: | ---: |
|  |  |  |  |
| Widowers |  |  |  |
| Deferred to age 50 | 0 | $\$$ | 0 |
| Deferred to age 62 | 131 | 75,036 | $\$$ |
| Deferred to age 65 | 0 | 0 | $6,901,318$ |
| Total | 131 | 75,036 | 0 |
|  |  |  | $6,901,318$ |
| Widows |  |  |  |
| Deferred to age 50 | 3 | 2,884 | 476,626 |
| Deferred to age 62 | 436 | 268,049 | $25,690,817$ |
| Deferred to age 65 | 0 | 0 | 0 |
| Total | 439 | 270,933 | $26,167,443$ |
|  |  |  |  |
| Totals | $\mathbf{5 7 0}$ | $\$ 345,969$ | $\$ 33,068,761$ |

## PUBLIC SAFETY DIVISION <br> DEFERRED SURVIVOR BENEFICIARIES <br> Tabulated by Gender and Deferred Age <br> DECEMBER 31, 2010

| Group | Number | Current Total | Actuarial Liabilities |
| :--- | :---: | :---: | :---: |
| Widowers <br> Deferred to age 50 <br> Total |  |  |  |
|  |  |  |  |
|  | 0 | $\$$ | 0 |
| Deferred to age 50 |  |  | 0 |
| Deferred to age 62 | 0 |  | $\$$ |
| Total | 4 | $\$$ | 0 |

## LAW ENFORCEMENT DIVISION <br> DEFERRED SURVIVOR BENEFICIARIES <br> Tabulated by Gender and Deferred Age <br> DECEMBER 31, 2010

| Group | Number | Current Total | Actuarial Liabilities |
| :---: | :---: | :---: | :---: |
| Widowers <br> Deferred to age 50 <br> Deferred to age 62 | 0 | $\begin{array}{ll} \$ & 0 \\ & 0 \end{array}$ | $\begin{array}{ll} \$ & 0 \\ 0 \end{array}$ |
| Total | 0 | 0 | 0 |
| Widows <br> Deferred to age 50 Deferred to age 62 | $\begin{array}{r} 0 \\ 11 \\ \hline \end{array}$ | $\begin{array}{r} \$ 0 \\ 9,699 \\ \hline \end{array}$ | $\begin{array}{lr} \$ & 0 \\ 853,909 \\ \hline \end{array}$ |
| Total | 11 | 9,699 | 853,909 |
| Totals | 11 | \$ 9,699 | \$853,909 |

## Survivor Benefit Fund <br> Reported Assets and LiAbilities DIVISIONS COMBINED

| $\begin{aligned} & \text { Valuation } \\ & \text { Date } \end{aligned}$ | Monthly Allowances |  |  |  | \$ Millions |  | Ratio of Assets to Liabilities |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Current |  | Deferred |  | Reported | Actuarial |  |
|  | No. | Amount | No. | Amount | Assets+ | Liabilities |  |
| 6/30/1977 | 8,153 | \$ 1,659,897 | 1,003 | \$ 125,094 | \$ 257.0 | \$ 204.6 | 126 \% |
| 6/30/1978 | 8,559 | 1,799,580 | 1,004 | 135,944 | 301.2 | 224.5 | 134 \% |
| 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 | 1,532.5 | 1,532.5 | 100 \% |

[^3]
## SECTION X

ACTUARIAL METHODS AND ASSUMPTIONS

# SUMMARY OF <br> Actuarial Methods And Assumptions Used For OPERS Actuarial Valuations Assumptions Adopted by Retirement Board After Consulting With Actuary 

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. Economic assumptions were established following the December 31, 2000 actuarial valuation. Decrement assumptions were revised following the December 31, 2005 actuarial valuation.

## ECONOMIC ASSUMPTIONS

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 $4.00 \%$ per year. The wage inflation rate is defined to be the portion of total pay increases for an individual that are due to macro economic forces including productivity, price inflation, and labor market conditions. The wage inflation rate does not include pay changes rated to individual merit and seniority effects.

No specific price inflation assumption is required to perform this valuation, since there are no benefits that are linked to price increases. However, a price inflation assumption on the order of 3.0\% to $3.5 \%$ would be consistent with the other economic assumptions.

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 $4.00 \%$. The assumed real rate of return over price inflation would be higher - on the order of $4.5 \%$ to $5.5 \%$ - considering both an inflation assumption and an average expense provision.

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 liabilities, total payroll (the sum of the Traditional and Combined Plan active payroll) is assumed to grow at the wage inflation rate 4.00\% per year.

Pay increase assumptions for individual active members are shown for sample ages on pages $\mathrm{X}-5, \mathrm{X}$ $6, \mathrm{X}-7$ \& X-8. Part of the assumption for each age is for merit and/or seniority increase, and the other $4.00 \%$ recognizes wage inflation, including price inflation, productivity increases, and other macro economic forces.

The post-retirement mortality rates used in evaluating age and service and survivor benefit allowances to be paid were $110 \%$ of RP-2000 mortality table for males and $100 \%$ of RP-2000 mortality table for females with 15 years of projected mortality improvements using Projection Scale AA. Related values are shown on page X-9. The mortality rates used in evaluating disability allowances were the RP-2000 mortality table for disabled lives, setback 4 years for males and setforward 4 years for females.

The probabilities of unreduced and reduced age and service retirement are shown on pages $\mathrm{X}-3$ and X-4.

The probabilities of withdrawal from service, disability and death-in-service are shown for sample ages on pages $\mathrm{X}-5, \mathrm{X}-6, \mathrm{X}-7$ \& $\mathrm{X}-8$. 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.

Defined Contribution Accounts under the Combined Plan are assumed to earn 8\% per year.
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-6.

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

| Ages | Percent of Eligible Active Members Retiring Within Next Year |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | State |  | Local Government |  | Public <br> Safety | Law <br> Enforcement |
|  | Men | Women | Men | Women |  |  |
| 45 | 40\% | 30\% | 30\% | 30\% |  |  |
| 46 | 40\% | 30\% | 30\% | 30\% |  |  |
| 47 | 40\% | 30\% | 30\% | 30\% |  |  |
| 48 | 40\% | 30\% | 30\% | 30\% |  | 20\% |
| 49 | 40\% | 30\% | 30\% | 30\% |  | 20\% |
| 50 | 40\% | 30\% | 30\% | 30\% |  | 20\% |
| 51 | 40\% | 30\% | 30\% | 30\% |  | 20\% |
| 52 | 35\% | 30\% | 30\% | 30\% | 30\% | 20\% |
| 53 | 35\% | 30\% | 30\% | 30\% | 30\% | 22\% |
| 54 | 35\% | 30\% | 30\% | 30\% | 25\% | 22\% |
| 55 | 30\% | 30\% | 30\% | 30\% | 25\% | 22\% |
| 56 | 25\% | 30\% | 28\% | 30\% | 25\% | 22\% |
| 57 | 25\% | 30\% | 28\% | 30\% | 25\% | 22\% |
| 58 | 25\% | 30\% | 28\% | 30\% | 20\% | 22\% |
| 59 | 25\% | 30\% | 25\% | 30\% | 20\% | 25\% |
| 60 | 30\% | 35\% | 25\% | 30\% | 35\% | 30\% |
| 61 | 30\% | 35\% | 25\% | 30\% | 35\% | 20\% |
| 62 | 30\% | 35\% | 35\% | 30\% | 35\% | 25\% |
| 63 | 30\% | 35\% | 35\% | 30\% | 35\% | 25\% |
| 64 | 35\% | 35\% | 30\% | 30\% | 35\% | 25\% |
| 65 | 30\% | 30\% | 20\% | 20\% | 35\% | 30\% |
| 66 | 25\% | 20\% | 20\% | 20\% | 35\% | 30\% |
| 67 | 20\% | 20\% | 15\% | 15\% | 35\% | 30\% |
| 68 | 20\% | 20\% | 15\% | 15\% | 35\% | 30\% |
| 69 | 20\% | 20\% | 15\% | 15\% | 35\% | 30\% |
| 70 | 20\% | 20\% | 15\% | 15\% | 100\% | 100\% |
| 71 | 20\% | 20\% | 15\% | 15\% | 100\% | 100\% |
| 72 | 20\% | 20\% | 15\% | 15\% | 100\% | 100\% |
| 73 | 20\% | 20\% | 15\% | 15\% | 100\% | 100\% |
| 74 | 20\% | 20\% | 15\% | 15\% | 100\% | 100\% |
| 75 \& Over | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| Ref | 1309 | 1310 | 1311 | 1312 | 1334 | 1335 |

Probabilities of Reduced Retirement

|  | Percent of Eligible Active Members <br> Retiring Within Next Year |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Men | Women | Men | Women | Public <br> Safety |
| 48 |  |  |  |  |  |
| 49 |  |  |  |  | $15 \%$ |
| 50 |  |  |  | $15 \%$ |  |
| 51 |  |  |  |  | $15 \%$ |
| 52 |  |  |  |  |  |
| 53 |  |  |  |  |  |
| 54 |  |  |  |  |  |
| 55 | $11 \%$ | $11 \%$ | $10 \%$ | $12 \%$ |  |
| 56 | $11 \%$ | $11 \%$ | $10 \%$ | $12 \%$ |  |
| 57 | $11 \%$ | $11 \%$ | $10 \%$ | $12 \%$ |  |
| 58 | $11 \%$ | $11 \%$ | $10 \%$ | $12 \%$ |  |
| 59 | $11 \%$ | $11 \%$ | $10 \%$ | $12 \%$ |  |
| 60 | $11 \%$ | $12 \%$ | $10 \%$ | $12 \%$ |  |
| 61 | $11 \%$ | $14 \%$ | $10 \%$ | $12 \%$ |  |
| 62 | $16 \%$ | $15 \%$ | $15 \%$ | $12 \%$ |  |
| 63 | $16 \%$ | $15 \%$ | $15 \%$ | $12 \%$ |  |
| 64 | $16 \%$ | $15 \%$ | $12 \%$ | $12 \%$ |  |
| Ref | 1313 | 1314 | 758 | 1315 | 1336 |

## 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 |  |  <br> Seniority | Base <br> (Economy) | Increase <br> Next Year |
|  |  | Men | Women | Men | Women | Men | Women |  |  |  |
|  | 0 |  |  | 40.00\% | 40.00\% |  |  |  |  |  |
|  | 1 |  |  | 25.00\% | 25.00\% |  |  |  |  |  |
|  | 2 |  |  | 15.00\% | 17.00\% |  |  |  |  |  |
|  | 3 |  |  | 10.00\% | 12.00\% |  |  |  |  |  |
|  | 4 |  |  | 8.00\% | 9.00\% |  |  |  |  |  |
| 25 | 5 \& Over | 0.04\% | 0.01\% | 7.04\% | 8.40\% | 0.15\% | 0.15\% | 4.30\% | 4.00\% | 8.30\% |
| 30 |  | 0.04\% | 0.02\% | 5.44\% | 7.28\% | 0.18\% | 0.18\% | 3.00\% | 4.00\% | 7.00\% |
| 35 |  | 0.08\% | 0.03\% | 4.20\% | 5.48\% | 0.32\% | 0.32\% | 2.20\% | 4.00\% | 6.20\% |
| 40 |  | 0.11\% | 0.05\% | 3.32\% | 3.88\% | 0.52\% | 0.52\% | 1.80\% | 4.00\% | 5.80\% |
| 45 |  | 0.15\% | 0.08\% | 2.58\% | 3.16\% | 0.72\% | 0.72\% | 1.40\% | 4.00\% | 5.40\% |
| 50 |  | 0.21\% | 0.12\% | 2.18\% | 2.88\% | 0.92\% | 0.92\% | 1.20\% | 4.00\% | 5.20\% |
| 55 |  | 0.36\% | 0.19\% | 2.10\% | 2.74\% | 1.36\% | 1.36\% | 0.90\% | 4.00\% | 4.90\% |
| 60 |  | 0.67\% | 0.35\% | 2.10\% | 2.70\% | 2.20\% | 2.20\% | 0.70\% | 4.00\% | 4.70\% |
| Ref |  | \#506x1sb0 | \#507x0.7sb0 | $\begin{gathered} 47 \\ \# 870 \times 1 \end{gathered}$ | $\begin{gathered} \hline 443 \\ \# 871 \times 1 \end{gathered}$ | \#385x1 | \#385x1 | 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 <br> Ages | Years of Service | Percent of Active Members Separating Within the Next Year |  |  |  |  |  | Pay Increase Assumptions For An Individual Employee |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Death |  | Withdrawal |  | Disability |  |  <br> Seniority | Base (Economy) | Increase <br> Next Year |
|  |  | Men | Women | Men | Women | Men | Women |  |  |  |
|  | 0 |  |  | 40.00\% | 40.00\% |  |  |  |  |  |
|  | 1 |  |  | 25.00\% | 25.00\% |  |  |  |  |  |
|  | 2 |  |  | 15.00\% | 17.00\% |  |  |  |  |  |
|  | 3 |  |  | 10.00\% | 12.00\% |  |  |  |  |  |
|  | 4 |  |  | 8.00\% | 9.00\% |  |  |  |  |  |
| 25 | 5 \& Over | 0.04\% | 0.01\% | 7.10\% | 8.40\% | 0.13\% | 0.12\% | 4.30\% | 4.00\% | 8.30\% |
| 30 |  | 0.04\% | 0.02\% | 5.90\% | 7.04\% | 0.17\% | 0.13\% | 3.00\% | 4.00\% | 7.00\% |
| 35 |  | 0.08\% | 0.03\% | 4.48\% | 5.50\% | 0.28\% | 0.21\% | 2.20\% | 4.00\% | 6.20\% |
| 40 |  | 0.11\% | 0.05\% | 3.32\% | 4.18\% | 0.44\% | 0.33\% | 1.80\% | 4.00\% | 5.80\% |
| 45 |  | 0.15\% | 0.08\% | 2.70\% | 3.40\% | 0.62\% | 0.45\% | 1.40\% | 4.00\% | 5.40\% |
| 50 |  | 0.21\% | 0.12\% | 2.50\% | 3.14\% | 0.90\% | 0.66\% | 1.20\% | 4.00\% | 5.20\% |
| 55 |  | 0.36\% | 0.19\% | 2.50\% | 3.04\% | 1.34\% | 0.98\% | 0.90\% | 4.00\% | 4.90\% |
| 60 |  | 0.67\% | 0.35\% | 2.50\% | 3.00\% | 1.54\% | 1.35\% | 0.70\% | 4.00\% | 4.70\% |
| Ref |  | \#506x1sb0 | \#507x0.7sb0 | $\begin{gathered} \hline 47 \\ \# 872 \times 1 \\ \hline \end{gathered}$ | $\begin{gathered} \hline 443 \\ \# 873 \times 1 \\ \hline \hline \end{gathered}$ | \#333x1 | \#334x1 | 301 |  |  |

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

## PUBLIC SAFETY <br> Separations From Active Employment Before Age \& Service Retirement \& Individual Pay Increase Assumptions

| Sample <br> Ages | Years of Service | Percent of Active Members Separating Within the Next Year |  |  |  |  |  | Pay Increase Assumptions For An Individual Employee |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Death |  | Withdrawal |  | Disability |  |  <br> Seniority | Base (Economy) | Increase <br> Next Year |
|  |  | Men | Women | Men | Women | Men | Women |  |  |  |
|  | 0 |  |  | 16.00\% | 18.00\% |  |  |  |  |  |
|  | 1 |  |  | 12.00\% | 12.00\% |  |  |  |  |  |
|  | 2 |  |  | 8.00\% | 8.00\% |  |  |  |  |  |
|  | 3 |  |  | 7.00\% | 7.00\% |  |  |  |  |  |
|  | 4 |  |  | 7.00\% | 7.00\% |  |  |  |  |  |
| 25 | 5 \& Over | 0.04\% | 0.01\% | 4.70\% | 4.22\% | 0.20\% | 0.20\% | 6.30\% | 4.00\% | 10.30\% |
| 30 |  | 0.04\% | 0.02\% | 3.90\% | 3.16\% | 0.60\% | 0.60\% | 4.00\% | 4.00\% | 8.00\% |
| 35 |  | 0.08\% | 0.03\% | 2.90\% | 2.80\% | 0.90\% | 0.90\% | 1.60\% | 4.00\% | 5.60\% |
| 40 |  | 0.11\% | 0.05\% | 2.20\% | 2.80\% | 1.15\% | 1.15\% | 0.85\% | 4.00\% | 4.85\% |
| 45 |  | 0.15\% | 0.08\% | 1.76\% | 2.32\% | 1.50\% | 1.50\% | 0.60\% | 4.00\% | 4.60\% |
| 50 |  | 0.21\% | 0.12\% | 1.60\% | 2.00\% | 2.10\% | 2.10\% | 0.50\% | 4.00\% | 4.50\% |
| 55 |  | 0.36\% | 0.19\% | 1.60\% | 2.00\% | 3.10\% | 3.10\% | 0.50\% | 4.00\% | 4.50\% |
| 60 |  | 0.67\% | 0.35\% | 1.60\% | 2.00\% | 4.00\% | 4.00\% | 0.50\% | 4.00\% | 4.50\% |
| Ref |  | \#506x1sb0 | \#507x0.7sb0 | $\begin{gathered} 445 \\ \# 874 \times 1 \\ \hline \end{gathered}$ | $\begin{gathered} \hline 446 \\ \# 875 \times 1 \\ \hline \end{gathered}$ | \#386x1 | \#386x1 | 303 |  |  |

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

## LAW ENFORCEMENT <br> Separations From Active Employment Before Age \& Service Retirement \& Individual Pay Increase Assumptions

| Sample <br> Ages | Years of Service | Percent of Active Members Separating Within the Next Year |  |  |  |  |  | Pay Increase Assumptions For An Individual Employee |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Death |  | Withdrawal |  | Disability |  |  <br> Seniority | Base (Economy) | Increase <br> Next Year |
|  |  | Men | Women | Men | Women | Men | Women |  |  |  |
|  | 0 |  |  | 15.00\% | 18.00\% |  |  |  |  |  |
|  | 1 |  |  | 9.00\% | 12.00\% |  |  |  |  |  |
|  | 2 |  |  | 7.00\% | 8.00\% |  |  |  |  |  |
|  | 3 |  |  | 5.00\% | 7.00\% |  |  |  |  |  |
|  | 4 |  |  | 5.00\% | 7.00\% |  |  |  |  |  |
| 25 | 5 \& Over | 0.04\% | 0.01\% | 3.54\% | 3.80\% | 0.20\% | 0.20\% | 6.30\% | 4.00\% | 10.30\% |
| 30 |  | 0.04\% | 0.02\% | 2.66\% | 2.90\% | 0.60\% | 0.60\% | 4.00\% | 4.00\% | 8.00\% |
| 35 |  | 0.08\% | 0.03\% | 2.14\% | 2.30\% | 0.90\% | 0.90\% | 1.60\% | 4.00\% | 5.60\% |
| 40 |  | 0.11\% | 0.05\% | 1.48\% | 1.50\% | 1.15\% | 1.15\% | 0.85\% | 4.00\% | 4.85\% |
| 45 |  | 0.15\% | 0.08\% | 1.20\% | 1.30\% | 1.50\% | 1.50\% | 0.60\% | 4.00\% | 4.60\% |
| 50 |  | 0.21\% | 0.12\% | 1.20\% | 1.20\% | 2.10\% | 2.10\% | 0.50\% | 4.00\% | 4.50\% |
| 55 |  | 0.36\% | 0.19\% | 1.20\% | 1.20\% | 3.10\% | 3.10\% | 0.50\% | 4.00\% | 4.50\% |
| 60 |  | 0.67\% | 0.35\% | 1.20\% | 1.20\% | 4.00\% | 4.00\% | 0.50\% | 4.00\% | 4.50\% |
| Ref |  | \#506x1sb0 | \#507x0.7sb0 | $\begin{gathered} \hline 375 \\ \# 876 \times 1 \\ \hline \end{gathered}$ | $\begin{gathered} 446 \\ \# 575 \times 1 \end{gathered}$ | \#386x1 | \#386x1 | 303 |  |  |

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

Single Life Retirement Values

| Sample <br> Attained <br> Ages | Present Value of \$1 <br> Monthly for Life <br> Increasing 3.0\% Annually <br> (First Increase After 1 Year) |  | Future Life Expectancy (years) |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females |
| 50 | \$175.27 | \$180.54 | 31.49 | 34.38 |
| 55 | 163.16 | 169.81 | 26.81 | 29.64 |
| 60 | 148.41 | 156.78 | 22.30 | 25.08 |
| 65 | 131.41 | 141.67 | 18.09 | 20.80 |
| 70 | 112.77 | 124.92 | 14.25 | 16.86 |
| 75 | 92.36 | 106.74 | 10.77 | 13.29 |
| 80 | 71.69 | 87.43 | 7.77 | 10.09 |
| Ref: | :\#397x1.1sb0 | :\#398x1sb0 |  |  |

## Miscellaneous and Technical Assumptions DECEMBER 31, 2010

## Marriage Assumption:

Pay Increase Timing:

Final Average Salary:

Decrement Timing:
Eligibility Testing:

## Decrement Relativity:

Decrement Operation:

Death after Disability:

Service Credit Accruals:
$70 \%$ 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.

Beginning of year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

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.

Decrements are assumed to occur mid-year.
Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

Disability and mortality decrements do not operate during the first 5 years of service.

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.

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 <br> DECEMBER 31, 2010 (CONCLUDED)

Miscellaneous Loads:

Incidence of Contributions: 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.

Exact fractional service is used to determine the amount of benefit payable.

The assumed normal form of benefit is a straight life benefit, except where otherwise noted.

## SECTION XI

FINANCIAL PRINCIPLES

## Financial Principles and Operational Techniques of OPERS

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 $3^{\text {rd }}$ 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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## YEARS OF TIME

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

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.

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

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. 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 A.S.A. and ultimately to Fellowship with the designation F.S.A.

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"

"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.

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 15-40 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.

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.

## SECTION XII

## GASB REPORTING

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 <br> For Compliance with GASB Statement No. 25 <br> (\$ Amounts in Millions) <br> 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.

| Valuation | Actuarial <br> Accrued <br> Liabilities <br> (AAL) | Valuation <br> Assets | Unfunded <br> Liabilities <br> (UAAL) | Ratio of <br> Assets <br> to AAL | Active <br> Member <br> Payroll | UAAL as a <br> of Active <br> Member <br> Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| 1991 | $\$ 22,027$ | $\$ 18,108$ | $\$ 3,919$ | $82 \%$ | $\$ 6,651$ | $59 \%$ |
| 1992 | 23,961 | 20,364 | 3,597 | $85 \%$ | 6,889 | $52 \%$ |
| 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 | $153 \%$ |

[^4]
# Schedule of Defined Benefit Funding Progress <br> For Compliance with GASB Statement No. 25 <br> (\$ Amounts in Millions) <br> 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.

| Valuation | Actuarial <br> Accrued <br> Yiabilities <br> (AAL) | Valuation <br> Assets | Unfunded <br> Liabilities <br> (UAAL) | Ratio of <br> Assets <br> to AAL | Active <br> Member <br> Payroll | UAAL as a <br> \% of Active <br> Member <br> Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1991 | $\$ 22,027$ | $\$ 18,108$ | $\$ 3,919$ | $82 \%$ | $\$ 6,651$ | $59 \%$ |
| 1992 | 23,961 | 20,364 | 3,597 | $85 \%$ | 6,889 | $52 \%$ |
| 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 | $156 \%$ |

[^5]
# Schedule of Defined Benefit Funding Progress <br> For Compliance with GASB Statement No. 25 <br> (\$ Amounts in Millions) <br> 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.

| Valuation Year | Actuarial <br> Accrued <br> Liabilities <br> (AAL) | Valuation Assets | Unfunded <br> Actuarial <br> Accrued <br> Liabilities <br> (UAAL) | Ratio of Assets to AAL | Active <br> Member Payroll | UAAL as a \% of Active Member Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1991 |  |  |  |  |  |  |
| 1992 |  |  |  |  |  |  |
| 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 \% |

* Revised actuarial assumptions.


# Schedule of Defined Benefit Funding Progress For Compliance with GASB Statement No. 25 <br> <br> (\$ AmOUNTS) 

 <br> <br> (\$ AmOUNTS)}

Member Directed 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.

| Valuation Year | Actuarial <br> Accrued <br> Liabilities <br> (AAL) | Valuation Assets | Unfunded <br> Actuarial <br> Accrued <br> Liabilities <br> (UAAL) | Ratio of Assets to AAL | Active <br> Member <br> Payroll | UAAL as a \% of Active Member Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| 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 |

[^6]
## Schedule of Employer Contributions* For Compliance with GASB Statement No. 25

| Traditional Plan |  |  |
| :---: | :---: | :---: |
| Valuation Date <br> December 31 | Year Ended <br> December 31 | Annual Required <br> Contributions |
| 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 | $13.52 \%$ |


| Combined Plan |  |  |
| :---: | :---: | :---: |
| Valuation Date <br> December 31 | Year Ended <br> December 31 | Annual Required <br> Contributions |
| 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 | $13.00 \%$ |


| Member Directed Plan |  |  |
| :---: | :---: | :---: |
| Valuation Date <br> December 31 | Year Ended <br> December 31 | Annual Required <br> Contributions |
|  | 2011 |  |
| 2008 | 2012 | $\$ 1,570$ |
| 2009 | 2013 | $\$ 4,019$ |
| 2010 | $\$ 4,342$ |  |

[^7]
## Schedule of Unfunded Actuarial Accrued Liability@ For Compliance with GASB Statement No. 25 Traditional, Combined and Member Directed Plans

|  | December 31, 2010 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | State Group | Local Group | General <br> Group | Public Safety Group | Law Enforcement Group | Total |
| Accrued Liabilities |  |  |  |  |  |  |
| Active and Inactive Members | \$ 14,787,308,337 | \$21,583,247,947 | \$36,370,556,284 | \$ 7,463,023 | \$1,535,457,852 | \$37,913,477,159 |
| Retirees and Beneficiaries | 16,840,897,851 | 23,188,146,989 | 40,029,044,840 | 36,382,788 | 1,651,169,215 | 41,716,596,843 |
| Total Accrued Liabilities | \$ 31,628,206,188 | \$44,771,394,936 | \$76,399,601,124 | \$ 43,845,811 | \$3,186,627,067 | \$79,630,074,002 |
| Assets |  |  |  |  |  |  |
| Active and Inactive Members |  |  |  |  |  |  |
| EAF* | \$ 2,747,836,175 | \$ 6,427,523,571 | \$ 9,175,359,746 | \$ (8,262,199) | \$ 529,264,324 | \$ 9,696,361,871 |
| ESF | 4,594,406,861 | 7,072,373,443 | 11,666,780,304 | 2,515,977 | 465,543,707 | 12,134,839,988 |
| Unallocated | 38,533,299 | 58,453,406 | 96,986,705 | 48,921 | 4,225,169 | 101,260,795 |
| Market Value Adjustment | (1,160,419,505) | (1,760,235,257) | (2,920,654,762) | $(1,475,242)$ | $(127,411,715)$ | (3,049,541,719) |
| Total Active and Inactive Assets | \$ 6,220,356,830 | \$11,798,115,163 | \$18,018,471,993 | \$ (7,172,543) | \$871,621,485 | \$18,882,920,935 |
| Retirees and Beneficiaries |  |  |  |  |  |  |
| A \& PR Fund* | \$16,282,661,442 | \$22,266,706,689 | \$38,549,368,131 | \$ 20,432,363 | \$1,614,342,740 | \$40,184,143,234 |
| SBF Fund* | 558,236,409 | 921,440,300 | 1,479,676,709 | 15,950,425 | 36,826,475 | 1,532,453,609 |
| Total R\&B Assets | \$16,840,897,851 | \$23,188,146,989 | \$40,029,044,840 | \$ 36,382,788 | \$1,651,169,215 | \$41,716,596,843 |
| Total Assets | \$23,061,254,681 | \$34,986,262,152 | \$58,047,516,833 | \$ 29,210,245 | \$2,522,790,700 | \$60,599,517,778 |
| Unfunded Actuarial Accrued Liability | \$8,566,951,507 | \$9,785,132,784 | \$18,352,084,291 | \$ 14,635,566 | \$ 663,836,367 | \$19,030,556,224 |

@ 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 <br> Traditional Plan

|  | December 31, 2010 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | State <br> Group | Local <br> Group | General Group | Public Safety Group | Law Enforcement Group | Total |
| Accrued Liabilities |  |  |  |  |  |  |
| Active and Inactive Members | \$14,718,292,197 | \$21,482,032,906 | \$36,200,325,103 | \$ 7,463,023 | \$1,535,457,852 | \$37,743,245,978 |
| Retirees and Beneficiaries | 16,840,735,819 | 23,186,985,694 | 40,027,721,513 | 36,382,788 | 1,651,169,215 | 41,715,273,516 |
| Total Accrued Liabilities | \$31,559,028,016 | \$44,669,018,600 | \$76,228,046,616 | \$ 43,845,811 | \$3,186,627,067 | \$79,458,519,494 |
| Assets |  |  |  |  |  |  |
| Active and Inactive Members |  |  |  |  |  |  |
| EAF* | \$ 2,696,465,463 | \$ 6,347,146,980 | \$ 9,043,612,443 | \$ (8,262,199) | \$ 529,264,324 | \$ 9,564,614,568 |
| ESF | 4,593,962,052 | 7,071,834,906 | 11,665,796,958 | 2,515,977 | 465,543,707 | 12,133,856,642 |
| Unallocated | 38,533,299 | 58,453,406 | 96,986,705 | 48,921 | 4,225,169 | 101,260,795 |
| Market Value Adjustment | (1,161,987,646) | (1,762,686,759) | (2,924,674,405) | $(1,475,242)$ | (127,411,715) | (3,053,561,362) |
| Total Active and Inactive Assets | \$ 6,166,973,168 | \$11,714,748,533 | \$17,881,721,701 | \$ (7,172,543) | \$ 871,621,485 | \$18,746,170,643 |
| Retirees and Beneficiaries |  |  |  |  |  |  |
| A \& PR Fund* | \$16,282,499,410 | \$22,265,545,394 | \$38,548,044,804 | \$ 20,432,363 | \$1,614,342,740 | \$40,182,819,907 |
| SBF Fund* | 558,236,409 | 921,440,300 | 1,479,676,709 | 15,950,425 | 36,826,475 | 1,532,453,609 |
| Total R\&B Assets | \$16,840,735,819 | \$23,186,985,694 | \$40,027,721,513 | \$ 36,382,788 | \$1,651,169,215 | \$41,715,273,516 |
| Total Assets | \$23,007,708,987 | \$34,901,734,227 | \$57,909,443,214 | \$ 29,210,245 | \$2,522,790,700 | \$60,461,444,159 |
| Unfunded Actuarial Accrued Liability | \$ 8,551,319,029 | \$ 9,767,284,373 | \$18,318,603,402 | \$ 14,635,566 | \$ 663,836,367 | \$18,997,075,335 |

@ 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 <br> Combined Plan


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

* After reserve transfers.


## Schedule of Unfunded Actuarial Accrued Liability@ <br> For Compliance with GASB Statement No. 25 <br> Member Directed Plan


@ 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

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, 2010 |
| :--- | :---: |
| Actuarial cost method | Individual entry age |
| Amortization method for unfunded |  |
| actuarial accrued liabilities |  |
| Equivalent Single Amortization Period |  |
| (Years from December 31, 2012) |  |
| $\quad$ Traditional Plan percent open |  |
| Combined Plan |  |
|  |  |
| Asset valuation method | 1 |
| Actuarial assumptions: |  |
| Investment rate of return <br> Projected salary increases <br> including wage inflation at $4.0 \%$ <br> Cost-of-living adjustments | $8.00 \%$ |

Membership of the Traditional and Combined Plans consisted of the following at December 31, 2010, the date of the latest actuarial valuation:

|  | Traditional | Combined | Member <br> Directed | Total |
| :---: | :---: | :---: | :---: | :---: |
| Retirees and beneficiaries receiving benefits | 181,433 | 32 | 18 | 181,483 |
| Terminated plan members entitled to but not yet receiving benefits |  |  |  |  |
| Less than 5 years of service | 371,619 | 859 | 0 | 372,478 |
| 5 or more years of service | 31,250 | 281 | 0 | 31,531 |
| Total | 402,869 | 1,140 | 0 | 404,009 |
| Active plan members |  |  |  |  |
| Less than 5 years of service | 133,147 | 3,156 | 0 | 136,303 |
| 5 or more years of service | 201,360 | 3,511 | 0 | 204,871 |
| Total | 334,507 | 6,667 | 0 | 341,174 |
| Total |  |  |  |  |
| Less than 5 years of service | 504,766 | 4,015 | 0 | 508,781 |
| 5 or more years of service | 414,043 | 3,824 | 18 | 417,885 |
| Total | 918,809 | 7,839 | 18 | 926,666 |

August 30, 2011

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

## Re: Report of December 31, 2010 Actuarial Valuation

Dear Karen:
Enclosed are the 25 bound copies of the final report.
Sincerely,


Mita Drazilov, MAAA, ASA
MD: sc
Enclosures
cc: Mr. Tom Heseltine
Clifton Gunderson LLP


[^0]:    \# After benefit changes.
    @ Revised actuarial assumptions.
    \#\# Combined Plan members are included beginning with the December 31, 2003 valuation.

[^1]:    \# After benefit changes.
    @ Revised actuarial assumptions.

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

[^2]:    * Including certain recommended transfers and accrued transfers.
    @ Revised actuarial assumptions.
    ** Excluding health insurance and Medicare payments.
    $+\quad$ Including estimated effect of legislated benefit changes.

[^3]:    @ Revised actuarial assumptions.

    * Benefits increased.
    \# After benefit changes.
    + Includes certain recommended transfers and accrued transfers.

[^4]:    * Revised actuarial assumptions.

[^5]:    * Revised actuarial assumptions.

[^6]:    * Revised actuarial assumptions.

[^7]:    * The amounts reported in this schedule do not include contributions for post-employment healthcare benefits.

