## Indiana Public Retirement System <br> Public Employees' Retirement Fund

Actuarial Valuation as of June 30, 2012

PWC

December 20, 2012

Board of Trustees
Indiana Public Retirement System
1 North Capitol, Suite 001
Indianapolis, IN 46204

## Re: Certification of the Actuarial Valuations of the Indiana Public Retirement System as of as of June 30, 2012

## Dear Board of Trustees:

Actuarial valuations are performed annually for the Indiana Public Retirement System ("INPRS") defined benefit pension plans ("Plans"). The results of the latest actuarial valuations, which were prepared as of June 30, 2012, are presented in individual valuation reports for each fund and were prepared pursuant to the engagement letter between INPRS and PricewaterhouseCoopers LLP ("PwC"), dated June 7, 2010. The reports are intended to provide the Board of Trustees ("Board") with information on the funded status of the Plans, development of the contribution rates, and certain financial statement disclosure information.

Under Indiana statutes, employer contribution rates and amounts, as applicable, are adopted annually for each Plan by the Board. The contributions are actuarially determined based on the Board's funding policy and adopted actuarial assumptions. Contributions determined by the actuarial valuation become effective either twelve or eighteen months after the valuation date, depending on the applicable employer. For example, contribution rates determined by the June 30, 2012 actuarial valuation and adopted by the Board will become effective on either July 1, 2013 or January 1, 2014. If new legislation is enacted between the valuation date and the date the contributions become effective, the Board may adjust the recommended contributions before adopting them, in order to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

## Financing Objectives and Funding Policy

In setting contribution levels, the Board's principal objectives have been:

- To set contributions such that the unfunded actuarial accrued liability ("UAAL") will be amortized over a 30-year period.
- To set contributions such that they remain relatively level over time.

To accomplish this, the Board's funding policy requires that employer contributions be equal to the sum of the employer normal cost (which pays the current year cost of benefits accruing) and an amortization of the UAAL in equal installments.

No membership growth is anticipated in setting the contributions. This is consistent with GASB \#25, which prohibits anticipating membership growth in determining the Annual Required Contribution ("ARC").

## Progress Toward Realization of Financing Objectives

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a Plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches $100 \%$. The combined funded ratio for all Plans decreased by $4.2 \%$ from the preceding year to $79.2 \%$, primarily due to fiscal 2012 investment returns of $0.7 \%$ being below the actuarial assumed rate of $7.0 \%$, delayed recognition of prior asset losses from fiscal 2009 in the Actuarial Value of Assets, a decrease in the discount rate from $7.0 \%$ to $6.75 \%$, and an update to the mortality table assumption.

## Benefit Provisions

The benefit provisions reflected in the valuation reports are those which were in effect at June 30, 2012, as set forth in the related Indiana statutes. None of the Plans had any material changes in benefit provisions since the 2011 valuation; however, a 13th Check was provided to retirees in PERF and EG\&C in lieu of a Cost-of-Living Adjustment.

## Assets and Member Data

The valuations were based on asset values of the trust funds and member census data as of June 30, 2012. All asset information and member data were provided by INPRS. While certain checks for reasonableness were performed, the data was used unaudited. The accuracy of the results presented in the reports is dependent upon the accuracy and completeness of the underlying asset and census information.

## Actuarial Assumptions and Methods

The majority of the actuarial assumptions used in the June 30, 2012 valuations were adopted by the Board pursuant to the Experience Studies completed in September 2011, which reflected the experience period from July 1, 2005 through June 30, 2010, and were first used in the June 30, 2011 valuation. The actuarial assumptions for interest rate and mortality were updated for the June 30, 2012 valuation. The actuarial assumptions and methods are summarized in the Actuarial Assumptions and Methods section of each valuation report. We believe the actuarial assumptions and methods are reasonable for the purposes of the valuation reports and comply with the parameters set forth in Statements No. 25 and No. 27 of the Governmental Accounting Standards Board ("GASB"). Different assumptions and methods may be reasonable for other purposes. As such, the results presented in the valuation reports should only be relied upon for the intended purpose.

## Certification

We certify that the information presented herein is accurate and fairly portrays the actuarial position of each Plan administered by INPRS as of June 30, 2012 based on the underlying census data, asset information and selected assumptions and methods.

This report contains the required accounting information to be included in the Comprehensive Annual Financial Report. This information has been prepared in accordance with our understanding of Governmental Accounting Standards No. 25 and No. 27 (as amended by No. 50). This report does not contain accounting information prepared in accordance with Governmental Accounting Standards No. 67 and No. 68, which will become effective for financial statements for fiscal years beginning after June 15, 2013.

To the best of our knowledge this actuarial statement is complete and accurate and has been prepared in accordance with generally accepted actuarial principles and practice and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with our understanding of the requirements of Indiana state law. The undersigned actuaries are members of the Society of Actuaries and other professional organizations, including the American Academy of Actuaries, and meet the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States relating to pension plans. There is no relationship between the PwC practitioners involved in this engagement and INPRS that may impair our objectivity.

This document was not intended or written to be used, and it cannot be used, for the purpose of avoiding U.S. federal, state, or local tax penalties. This includes penalties that may apply if the transaction that is the subject of this document is found to lack economic substance or fails to satisfy any other similar rule of law. This document has been prepared pursuant to an engagement letter between INPRS and PwC, and is intended solely for the use and benefits of INPRS and not for reliance by any other person.

Respectfully submitted,


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Fellow of the Society of Actuaries
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## SECTION I - EXECUTIVE SUMMARY

## HIGHLIGHTS OF THE ACTUARY'S REPORT

This report presents the results of the actuarial valuation of the Public Employees' Retirement Fund ("PERF") and has been prepared to present the current funded status of the Plan, contribution requirements for fiscal year 2014 (July 1, 2013 through June 30, 2014 for State members and January 1, 2014 through December 31, 2014 for Political Subdivision members), and certain financial statement disclosure information. The valuation was performed using census data for plan members as of June 30,2012 provided by INPRS, asset information as of June 30, 2012 provided by INPRS, the actuarial assumptions and methods approved by the Board and summarized in Section $V$ and the plan provisions effective June 30, 2012 as summarized in Section VI.

## Contribution Rates

The State employer contribution rate will increase from $9.7 \%$ to $11.2 \%$ starting July 1, 2013. This contribution rate is equal to the current year Actuarially Calculated Rate, rounded up to the next tenth of a percent. The actual dollar amount of employer cost will depend on the actual payroll during fiscal year 2014.

The Political Subdivisions employer contribution rate, after aggregating over all participating Political Subdivisions, will increase from $9.7 \%$ to $11.0 \%$ starting January $\mathbf{1 , 2 0 1 4 .}$. The contribution rate for each Political Subdivision is equal to the prior year Actual Rate increased by the lesser of $1.5 \%$, or the amount needed to reach the Composite Rate (11.2\% as of the June 30, 2012 valuation). The Composite Rate is the aggregate Actuarially Calculated Rate for all Political Subdivisions, rounded up to the next tenth of a percent. This approach will fully fund the Annual Required Contribution once all Political Subdivisions are contributing the Composite Rate. The actual dollar amount of employer cost will depend on the actual payroll during calendar year 2014.

Employees of the State and participating Political Subdivisions contribute 3\% of their compensation to an Annuity Savings Account. Employers may "pick up" the employee contributions. The accumulated balance in each member's Annuity Savings Account can be withdrawn as a lump sum upon termination or can be converted to an annuity and added to the benefit that is funded by the employer contributions upon retirement.

## Funded Status

The funded status of PERF is measured by the funded ratio, which is the ratio of the assets available for benefits to a benefit liability measure for PERF. While there are several such measures that could be appropriately used, the benefit liability measure that ties most closely to PERF's funding strategy is the Actuarial Accrued Liability ("AAL").

Using the Actuarial Value of Assets ("AVA"), an asset value that smoothes the market gains and losses over four (4) years, the PERF AAL funded ratio decreased from 80.5\% at June 30, 2011 to $76.6 \%$ at June 30, 2012. The decrease is primarily due to the decrease in discount rate, updated mortality table and recognition of asset experience.

## SECTION I - EXECUTIVE SUMMARY

HIGHLIGHTS OF THE ACTUARY'S REPORT (CONTINUED)

## Investment Experience

The assets of PERF are commingled with the assets of other funds administered by INPRS. The overall INPRS return on the commingled funds was $0.7 \%$ during fiscal 2012. Based on the value of assets allocated to PERF as of the prior valuation date and contribution and benefit payment activity during the year, the allocation of returns to PERF represent a return of approximately ( $0.2 \%$ ) on market value and $2.3 \%$ on actuarial value. The return on actuarial value is different due to the smoothing of returns greater or less than expected returns over four years.

## Cost-of-Living Adjustment

Cost-of-living increases for retired members have historically been granted on an "ad hoc" basis. No increase in monthly benefits was provided to retired members, disabled members, or beneficiaries at July 1, 2012. Instead, a "13th check" was paid to each member in pay status during September 2012. The amount of the 13th check varied based on the years of creditable service the member had earned prior to retirement.

## Changes in Actuarial Assumptions

For the June 30, 2012 valuation, the Board approved the following assumption changes:

- The interest rate assumption was decreased from $7.0 \%$ to $6.75 \%$.
- The interest rate on member ASA balances was decreased from 7.0\% to 3.0\%
- The mortality table was changed from the 2008 IRS Static Mortality projected five (5) years with Scale AA to the 2013 IRS Static Mortality projected five (5) years with Scale AA.


## Changes in Plan Provisions

Other than the 13 th check noted above, it is our understanding that there were no changes to the Plan or underlying status that impacted the pension benefits during the fiscal year.

## Changes in Actuarial Methods

There have been no changes in the actuarial methods since the June 30, 2011 valuation.

## SECTION I - EXECUTIVE SUMMARY

HISTORICAL SUMMARY

Total PERF - 4 Year History of Funded Status ${ }^{1}$


| Actuarial Valuation as of June 30: | $\underline{\mathbf{2 0 0 9}}$ | $\underline{\mathbf{2 0 1 0}}$ | $\underline{\mathbf{2 0 1 2}}$ | $\mathbf{\underline { \mathbf { 2 0 1 1 } }}$ |
| :--- | :---: | :---: | :---: | :---: |
| Actuarial Accrued Liability (AAL) | $\$ 13,506.3$ | $\$ 14,506.1$ | $\$ 14,913.1$ | $\mathbf{\$ 1 5 , 7 8 4 . 2}$ |
| Actuarial Value of Assets (AVA) | $12,569.3$ | $12,357.2$ | $12,000.6$ | $12,088.2$ |
| Market Value of Assets (MVA) | $9,442.3$ | $10,581.3$ | $2,461.4$ | $12,243.8$ |
| Unfunded Liability (AAL - AVA) | 937.0 | $93.1 \%$ | $85.2 \%$ | $3,696.0$ |
| AVA Funded Status (AVA / AAL) | $69.9 \%$ | $72.9 \%$ | $80.5 \%$ | $76.6 \%$ |
| MVA Funded Status (MVA / AAL) |  |  | $83.6 \%$ | $77.6 \%$ |

[^0]
## SECTION I - EXECUTIVE SUMMARY

## HISTORICAL SUMMARY (CONTINUED)

Total PERF - Summary of Valuation Results ${ }^{1,2}$

| Valuation Date | June 30, 2009 |  | June 30, 2010 |  | June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Development of Actuarially Calculated Rate |  |  |  |  |  |  |  |  |
| Normal Cost (Beginning of Year) | \$ | 298,159,870 | \$ | 320,524,189 | \$ | 253,006,701 | \$ | 270,973,983 |
| Amortization of Unfunded Actuarial Accrued Liability |  | 72,839,046 |  | 163,318,289 |  | 222,668,943 |  | 278,065,556 |
| Total Contribution Amount | \$ | 370,998,916 | \$ | 483,842,478 | \$ | 475,675,644 | \$ | 549,039,539 |
| Actuarially Calculated Rate |  | 7.8\% |  | 9.9\% |  | 9.9\% |  | 11.2\% |
| Fiscal / Calendar Year |  | 2011 |  | 2012 |  | 2013 |  | 2014 |
| Approved Funding Rate ${ }^{3}$ |  | 7.6\% |  | 8.7\% |  | 9.7\% |  | 11.1\% |

[^1]
## SECTION I - EXECUTIVE SUMMARY

## HISTORICAL SUMMARY (CONTINUED)

## State-Summary of Valuation Results ${ }^{1,2}$

| Valuation Date | June 30, 2009 |  | June 30, 2010 |  | June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Development of Actuarially Calculated Rate |  |  |  |  |  |  |  |  |
| Normal Cost (Beginning of Year) | \$ | 103,491,300 | \$ | 110,142,867 | \$ | 73,614,164 | \$ | 78,888,474 |
| Amortization of Unfunded Actuarial Accrued Liability |  | 24,800,374 |  | 66,147,093 |  | 84,263,994 |  | 105,132,459 |
| Total Contribution Amount | \$ | 128,291,674 | \$ | 176,289,960 | \$ | 157,878,158 | \$ | 184,020,933 |
| Actuarially Calculated Rate |  | 7.6\% |  | 10.2\% |  | 9.6\% |  | 11.2\% |
| Fiscal Year |  | 2011 |  | 2012 |  | 2013 |  | 2014 |
| Approved Funding Rate ${ }^{3}$ |  | 7.0\% |  | 8.6\% |  | 9.7\% |  | 11.2\% |

## Political Subdivisions - Summary of Valuation Results ${ }^{\mathbf{1 , 2}}$

Valuation Date
Development of Actuarially Calculated Rate
Normal Cost (Beginning of Year)
Amortization of Unfunded Actuarial Accrued Liability
Total Contribution Amount
Actuarially Calculated Rate

## Calendar Year

Approved Funding Rate ${ }^{3}$

| June 30, 2009 |  | June 30, 2010 |  | June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | $\begin{array}{r} 194,668,570 \\ 48,038,672 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 210,381,322 \\ 97,171,196 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 179,392,537 \\ 138,404,949 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 192,085,509 \\ 172,933,097 \\ \hline \end{array}$ |
| \$ | 242,707,242 | \$ | 307,552,518 | \$ | 317,797,486 | \$ | 365,018,606 |
|  | 7.9\% |  | 9.7\% |  | 10.0\% |  | 11.2\% |
|  | 2011 |  | 2012 |  | 2013 |  | 2014 |
|  | 7.9\% |  | 8.8\% |  | 9.7\% |  | 11.0\% |

[^2]
## HISTORICAL SUMMARY (CONTINUED)

## Total PERF - Summary of Valuation Results (Continued) ${ }^{1}$

## Census Information

## Active

Number
State
Political Subdivisions Total
Average Age
Average Years of Service
Covered Payroll of Actives
State
Political Subdivisions
Total

Inactive - Vested
Number
Average Age
Average Years of Service

Inactive - Non-Vested
Number

Retiree/Beneficiary/Disabled
Number
Average Age
Annual Benefits Payable
Pension
ASA Annuities
Total
$\qquad$ June 30, 2011
June 30, 2012
June 30, 2010 $\qquad$
$\qquad$

|  | $\begin{array}{r} 46,749 \\ 101,043 \\ \hline \end{array}$ |  | $\begin{array}{r} 48,220 \\ 101,657 \\ \hline \end{array}$ |  | $\begin{array}{r} 45,912 \\ 102,021 \\ \hline \end{array}$ |  | $\begin{array}{r} 45,156 \\ 100,363 \\ \hline \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 147,792 |  | 149,877 |  | 147,933 |  | 145,519 |
|  | 47.3 |  | 47.5 |  | 47.6 |  | 47.6 |
|  | 10.9 |  | 11.2 |  | 11.4 |  | 11.5 |
|  | 1,749,780,803 |  | 1,730,479,696 |  | 1,641,685,770 |  | 1,648,023,022 |
|  | 3,181,642,137 |  | 3,165,532,884 |  | 3,177,087,910 |  | 3,256,029,392 |
| \$ | 4,931,422,940 | \$ | 4,896,012,58o | \$ | 4,818,773,68o | \$ | 4,904,052,414 |



[^3]
## SECTION I - EXECUTIVE SUMMARY

## HISTORICAL SUMMARY (CONTINUED)

## Total PERF - Summary of Valuation Results (Continued) ${ }^{1}$

## Actuarial Accrued Liability (AAL)

ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactiv

## State

Political Subdivisions
Total
Total

## Actuarial Value of Assets (AVA)

ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total

## Market Value of Assets (MVA)

ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total
Unfunded Actuarial Accrued Liability: AAL - AVA
ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total

## Funded Percentage: AVA / AAL

ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total

## Summary of Assumptions

Valuation Interest Rate
Salary Scale

| June 30, 2009 |  | June 30, 2010 |  | June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | $2,669,318,240$ $4,611,256,619$ | \$ | $\begin{array}{r} 2,780,570,388 \\ 710,683,223 \\ 4,220,908,907 \end{array}$ | \$ | $\begin{array}{r} 2,805,023,137 \\ 801,369,029 \\ 4,569,417,231 \end{array}$ | \$ | $\begin{array}{r} 2,749,448,762 \\ 908,664,881 \\ 4,987,114,328 \end{array}$ |
|  | $\begin{array}{r} 2,443,039,325 \\ 3,782,666,167 \\ \hline \end{array}$ |  | $\begin{array}{r} 2,678,030,588 \\ 4,115,859,095 \end{array}$ |  | $\begin{array}{r} 2,538,861,413 \\ 4,198,476,483 \\ \hline \end{array}$ |  | $\begin{array}{r} 2,660,671,538 \\ 4,478,340,402 \\ \hline \end{array}$ |
| \$ | 6,225,705,492 | \$ | 6,793,889,683 | \$ | 6,737,337,896 | \$ | 7,139,011,940 |
| \$ | 13,506,280,351 | \$ | 14,506,052,201 | \$ | 14,913,147,293 | \$ | 15,784,239,911 |
| \$ | $\begin{array}{r} 2,669,318,240 \\ \\ 4,611,256,619 \\ 5,288,761,052 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 2,780,570,388 \\ 710,683,223 \\ 4,220,908,907 \\ 4,645,036,496 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 2,805,023,137 \\ 801,369,029 \\ 4,569,417,231 \\ 3,824,776,913 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 2,749,448,762 \\ 908,664,881 \\ 4,987,114,328 \\ 3,442,996,687 \end{array}$ |
| \$ | 12,569,335,911 | \$ | 12,357,199,014 | \$ | 12,000,586,310 | \$ | 12,088,224,658 |
| \$ | $\begin{array}{r} 2,669,318,240 \\ 4,611,256,619 \\ 2,161,760,681 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 2,780,570,388 \\ 710,683,223 \\ 4,220,908,907 \\ 2,869,156,895 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 2,805,023,137 \\ 801,369,029 \\ 4,569,417,231 \\ 4,285,546,512 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 2,749,448,762 \\ 908,664,881 \\ 4,987,114,328 \\ 3,598,525,143 \\ \hline \end{array}$ |
| \$ | 9,442,335,540 | \$ | 10,581,319,413 | \$ | 12,461,355,909 | \$ | 12,243,753,114 |
| \$ | - | \$ | - | \$ | - | \$ | - |
|  |  |  | - |  | - |  | - |
|  | - |  | - |  | - |  | - |
|  | 936,944,440 |  | 2,148,853,187 |  | 2,912,560,983 |  | 3,696,015,253 |
| \$ | 936,944,440 | \$ | 2,148,853,187 | \$ | 2,912,560,983 | \$ | 3,696,015,253 |
|  | 100.0\% |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  |  |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  | 100.0\% |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  | 85.0\% |  | 68.4\% |  | 56.8\% |  | 48.2\% |
|  | 93.1\% |  | 85.2\% |  | 80.5\% |  | 76.6\% |
| 7.25\% |  |  | 7.0\% |  | 7.0\% |  | 6.75\% |
| 4.0\% |  |  | 4.0\% |  | 3.25\%-4.5\% |  | 3.25\%-4.5\% |
| 1.5\% |  |  | 1.0\% |  | 1.0\% |  | 1.0\% |

${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.

## Actuarial Accrued Liability (AAL)

ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total

## Actuarial Value of Assets (AVA)

ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total

## Market Value of Assets (MVA)

ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total
Unfunded Actuarial Accrued Liability: AAL - AVA
ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total

Funded Percentage: AVA / AAL
ASA Account Balance
ASA Annuities - Retiree/Beneficiary/Disabled
Pension - Retiree/Beneficiary/Disabled
Pension - Active and Inactive
Total

## Summary of Assumptions

Valuation Interest Rate
Salary Scale
Cost-of-Living Assumption

| June 30, 2009 |  | June 30, 2010 |  | June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | 889,772,747 | \$ | 926,856,796 | \$ | 935,007,712 | \$ | 916,482,921 |
|  |  |  | 236,894,408 |  | 267,123,010 |  | 302,888,294 |
|  | 1,537,085,539 |  | 1,406,969,635 |  | 1,523,139,077 |  | 1,662,371,442 |
|  | 2,443,039,325 |  | 2,678,030,588 |  | 2,538,861,413 |  | 2,660,671,538 |
| \$ | 4,869,897,611 | \$ | 5,248,751,427 | \$ | 5,264,131,212 | \$ | 5,542,414,195 |
| \$ | 889,772,747 | \$ | 926,856,796 | \$ | 935,007,712 | \$ | 916,482,921 |
|  |  |  | 236,894,408 |  | 267,123,010 |  | 302,888,294 |
|  | 1,537,085,539 |  | 1,406,969,635 |  | 1,523,139,077 |  | 1,662,371,442 |
|  | 2,121,550,162 |  | 1,803,664,021 |  | 1,433,516,270 |  | 1,259,781,511 |
| \$ | 4,548,408,448 | \$ | 4,374,384,859 | \$ | 4,158,786,069 | \$ | 4,141,524,168 |
| \$ | 889,772,747 | \$ | 926,856,796 | \$ | 935,007,712 | \$ | 916,482,921 |
|  |  |  | 236,894,408 |  | 267,123,010 |  | 302,888,294 |
|  | 1,537,085,539 |  | 1,406,969,635 |  | 1,523,139,077 |  | 1,662,371,442 |
|  | 867,175,446 |  | 1,114,091,367 |  | 1,606,211,496 |  | 1,316,688,878 |
| \$ | 3,294,033,732 | \$ | 3,684,812,206 | \$ | 4,331,481,295 | \$ | 4,198,431,535 |
| \$ | - | \$ | - | \$ | - | \$ | - |
|  |  |  | - |  | - |  | - |
|  | - |  | - |  | - |  | - |
|  | 321,489,163 |  | 874,366,568 |  | 1,105,345,143 |  | 1,400,890,027 |
| \$ | 321,489,163 | \$ | 874,366,568 | \$ | 1,105,345,143 | \$ | 1,400,890,027 |
|  | 100.0\% |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  |  |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  | 100.0\% |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  | 86.8\% |  | 67.4\% |  | 56.5\% |  | 47.3\% |
|  | 93.4\% |  | 83.3\% |  | 79.0\% |  | 74.7\% |
|  | 7.25\% |  | 7.0\% |  | 7.0\% |  | 6.75\% |
|  | 4.0\% |  | 4.0\% |  | 3.25\%-4.5\% |  | 3.25\%-4.5\% |
|  | 1.5\% |  | 1.0\% |  | 1.0\% |  | 1.0\% |

${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.

## SECTION I - EXECUTIVE SUMMARY

## HISTORICAL SUMMARY (CONTINUED)

## Political Subdivisions - Summary of Valuation Results (Continued) ${ }^{1}$

| June 30, 2009 |  | June 30, 2010 |  | June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | 1,779,545,493 | \$ | 1,853,713,592 | \$ | 1,870,015,425 | \$ | $1,832,965,841$ |
|  |  |  | 473,788,815 |  | 534,246,019 |  | 605,776,587 |
|  | 3,074,171,080 |  | 2,813,939,272 |  | 3,046,278,154 |  | 3,324,742,886 |
|  | 3,782,666,167 |  | 4,115,859,095 |  | 4,198,476,483 |  | 4,478,340,402 |
| \$ | 8,636,382,740 | \$ | 9,257,300,774 | \$ | 9,649,016,081 | \$ | 10,241,825,716 |
| \$ | 1,779,545,493 | \$ | 1,853,713,592 | \$ | 1,870,015,425 | \$ | $1,832,965,841$ |
|  |  |  | 473,788,815 |  | 534,246,019 |  | 605,776,587 |
|  | 3,074,171,080 |  | 2,813,939,272 |  | 3,046,278,154 |  | 3,324,742,886 |
|  | 3,167,210,890 |  | 2,841,372,476 |  | 2,391,260,643 |  | 2,183,215,176 |
| \$ | 8,020,927,463 | \$ | 7,982,814,155 | \$ | 7,841,800,241 | \$ | 7,946,700,490 |
| \$ | 1,779,545,493 | \$ | 1,853,713,592 | \$ | 1,870,015,425 | \$ | 1,832,965,841 |
|  |  |  | 473,788,815 |  | 534,246,019 |  | 605,776,587 |
|  | 3,074,171,080 |  | 2,813,939,272 |  | 3,046,278,154 |  | 3,324,742,886 |
|  | 1,294,585,235 |  | 1,755,065,528 |  | 2,679,335,016 |  | 2,281,836,265 |
| \$ | 6,148,301,808 | \$ | 6,896,507,207 | \$ | 8,129,874,614 | \$ | 8,045,321,579 |
| \$ | - | \$ | - | \$ | - | \$ | - |
|  |  |  | - |  | - |  | - |
|  | - |  | - |  | - |  | - |
|  | 615,455,277 |  | 1,274,486,619 |  | 1,807,215,840 |  | 2,295,125,226 |
| \$ | 615,455,277 | \$ | 1,274,486,619 | \$ | 1,807,215,840 | \$ | 2,295,125,226 |
|  | 100.0\% |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  |  |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  | 100.0\% |  | 100.0\% |  | 100.0\% |  | 100.0\% |
|  | 83.7\% |  | 69.0\% |  | 57.0\% |  | 48.8\% |
|  | 92.9\% |  | 86.2\% |  | 81.3\% |  | 77.6\% |
|  | 7.25\% |  | 7.0\% |  | 7.0\% |  | 6.75\% |
|  | 4.0\% |  | 4.0\% |  | 3.25\% - 4.5\% |  | 3.25\%-4.5\% |
|  | 1.5\% |  | 1.0\% |  | 1.0\% |  | 1.0\% |

[^4]
## FUNDING

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## SECTION II - FUNDING

## A. Development of Funded Status

1. Actuarial Accrued Liability
a. Annuity Savings Account
b. ASA Annuities
c. Retirees, Beneficiaries, and Disableds
d. Actives and Inactives
e. Total: $(1)(a)+(1)(b)+(1)(c)+(1)(d)$
2. Actuarial Value of Assets
a. Annuity Savings Account
b. ASA Annuities
c. Retirees, Beneficiaries, and Disableds
d. Actives and Inactives
e. Total: $(2)(a)+(2)(b)+(2)(c)+(2)(d)$
3. Unfunded Actuarial Accrued Liability
a. Annuity Savings Account: (1)(a) - (2)(a)
b. ASA Annuities: (1)(b)-(2)(b)
c. Retirees, Beneficiaries, and Disableds: (1)(c)-(2)(c)
d. Actives and Inactives: (1)(d) - (2)(d)
e. Total: (1)(e)-(2)(e)
4. Funded Status
a. Annuity Savings Account: (2)(a) / (1)(a)
b. ASA Annuities: (2)(b) / (1)(b)
c. Retirees, Beneficiaries, and Disableds: (2)(c) / (1)(c)
d. Actives and Inactives: (2)(d) / (1)(d)
e. Total: (2)(e)/(1)(e)

| June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: |
| \$ | $\begin{array}{r} 2,805,023,137 \\ 801,369,029 \\ 4,569,417,231 \\ 6,737,337,896 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 2,749,448,762 \\ 908,664,881 \\ 4,987,114,328 \\ 7,139,011,940 \\ \hline \end{array}$ |
| \$ | 14,913,147,293 | \$ | 15,784,239,911 |
| \$ | $\begin{array}{r} 2,805,023,137 \\ 801,369,029 \\ 4,569,417,231 \\ 3,824,776,913 \\ \hline \end{array}$ | \$ | $\begin{array}{r} 2,749,448,762 \\ 908,664,881 \\ 4,987,114,328 \\ 3,442,996,687 \\ \hline \end{array}$ |
| \$ | 12,000,586,310 | \$ | 12,088,224,658 |
| \$ | - | \$ | - |
|  | - |  | - |
|  | - |  | - |
|  | 2,912,560,983 |  | 3,696,015,253 |
| \$ | 2,912,560,983 | \$ | 3,696,015,253 |
|  | 100.0\% |  | 100.0\% |
|  | 100.0\% |  | 100.0\% |
|  | 100.0\% |  | 100.0\% |
|  | 56.8\% |  | 48.2\% |
|  | 80.5\% |  | 76.6\% |

## SECTION II - FUNDING

## B. Unfunded Actuarial Accrued Liability Reconciliation

1. Unfunded Actuarial Accrued Liability, Prior Year
2. Unfunded Actuarial Accrued Liability (Gain) / Loss
a. Actuarial Value of Assets Experience
b. Actuarial Accrued Liability Experience
c. Additional Liability Due to Cost-of-living Adjustments
d. Additional Liability Due to Changes in Actuarial Assumptions
e. Additional Liability Due to Changes in Plan Provisions
f. Total New Amortization Bases:

$$
(2)(a)+(2)(b)+(2)(c)+2(d)+(2)(e)
$$

g. Reduction in Existing Bases Due to Prior Year Amortization, Net of Interest
h. Change in Unfunded Actuarial Accrued Liability:

$$
(2)(\mathrm{f})+(2)(\mathrm{g})
$$

3. Unfunded Actuarial Accrued Liability, Current Year: (1) + (2)(h)

| June 30, 2011 |  |  | June 30, 2012 |  |
| :---: | ---: | :--- | :--- | :--- |
| $\$ \quad 2,148,853,187$ |  | $\$ \quad 2,912,560,983$ |  |  |


| $\$$ | $1,000,631,406$ | $\$$ | $486,424,398$ |
| :---: | ---: | :---: | ---: |
|  | $82,616,614$ |  | $(87,830,844)$ |
|  | - |  | $(14,135,011)^{1}$ |
|  | $(295,209,380)$ |  | $433,372,227^{2}$ |
|  | - |  | - |
|  | $\$ 888,038,640$ |  | $\$$ |
|  |  | $817,830,770$ |  |


|  | $(24,330,844)$ |  | $(34,376,500)$ |
| :--- | :--- | :--- | :--- |
|  | $763,707,796$ | $\$$ | $783,454,270$ |

\$ 783,454,270
$\$ \quad 2,912,560,983 \quad \$ \quad 3,696,015,253$

[^5]
## SECTION II - FUNDING

## C. Actuarial Accrued Liability Reconciliation

1. June 30, 2011 Actuarial Accrued Liability
2. Normal Cost
3. Actual Benefit Payments
4. Interest of $7.0 \%$ on $(1)+(2)-(3) / 2$
5. Expected June 30, 2012 Actuarial Accrued Liability:

$$
(1)+(2)-(3)+(4)
$$

6. (Gain)/Loss Components
a. Census
b. Cost-of-Living Adjustment ${ }^{1}$
c. Assumption Changes ${ }^{2}$
d. Total: $(6)(a)+(6)(b)+(6)(c)$
7. Actual June 30, 2012 Actuarial Accrued Liability: (5) + (6)(d)

| $\$$ | $14,913,147,293$ |
| :---: | ---: |
|  | $253,006,701$ |
|  | $748,745,154$ |
|  | $1,035,424,699$ |
| $\$$ | $15,452,833,539$ |


| Dollar Change | Percent Change |
| ---: | ---: |
| in Liability | in Liability |


\$ 15,784,239,911
${ }^{1}$ Retired members will be provided a 13th check by October 1, 2012 rather than a 1.0\% COLA on January 1, 2013.
${ }^{2}$ Assumption changes include the change in discount rate from $7.0 \%$ to $6.75 \%$, change in the interest rate on member ASA balances from $7.0 \%$ to $3.0 \%$, and change in mortality table from the 2008 IRS Static Mortality projected five (5) years with Scale AA to the 2013 IRS Static Mortality projected five (5) years with Scale AA.

## SECTION II - FUNDING

## D. Reconciliation of Market Value of Assets

1. Market Value of Assets, Prior June 30
2. Receipts
a. Employer Contributions
b. Member Contributions
c. Investment Income and Dividends Net of Fees
d. Security Lending Income Net of Fees
e. Transfers In
f. Miscellaneous Receipts
g. Total Receipts: $(2)(a)+(2)(b)+(2)(c)+(2)(d)+(2)(e)+(2)(f)$
3. Disbursements
a. Benefits Paid During the Year
b. Refund of Contributions and Interest
c. Administrative and Project Expenses
d. Transfers Out
e. Miscellaneous Disbursements
f. Total Disbursements: $(3)(a)+(3)(b)+(3)(c)+(3)(d)+(3)(e)$
4. Market Value of Assets, Current June 30: (1) + (2)(g) - (3)(f)
5. Market Value of Assets Approximate Annual Rate of Investment Return

| June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: |
| \$ | 10,581,319,413 | \$ | 12,461,355,909 |
| \$ | 342,778,706 | \$ | 397,842,387 |
|  | 156,027,588 |  | 158,695,936 |
|  | 2,105,673,340 |  | $(7,433,198)$ |
|  | 6,417,025 |  | 3,481,283 |
|  | 5,299,445 |  | 3,341,006 |
|  | 18,134 |  | 8,009 |
| \$ | 2,616,214,238 | \$ | 555,935,423 |
| \$ | 638,460,412 | \$ | 669,181,018 |
|  | 65,178,251 |  | 69,880,200 |
|  | 22,461,145 |  | 24,793,064 |
|  | 10,077,934 |  | 9,683,936 |
|  | - |  | - |
| \$ | 736,177,742 | \$ | 773,538,218 |
| \$ | 12,461,355,909 | \$ | 12,243,753,114 |
|  | 19.9\% |  | (0.2\%) |

## E. Reconciliation of Actuarial Value of Assets

[^6]
## SECTION II - FUNDING

## F. Allocation of Assets


#### Abstract

Total Assets Available for Benefit


a. Market Value of Assets
b. Actuarial Value of Assets
2. Annuity Savings Accounts

| June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: |
| \$ | 12,461,355,909 | \$ | 12,243,753,114 |
|  | 12,000,586,310 |  | 12,088,224,658 |
|  | 2,805,023,137 |  | 2,749,448,762 |
| \$ | 4,569,417,231 | \$ | 4,987,114,328 |
|  | 801,369,029 |  | 908,664,881 |
| \$ | 5,370,786,260 | \$ | 5,895,779,209 |
| \$ | 4,285,546,512 | \$ | 3,598,525,143 |
| \$ | 3,824,776,913 | \$ | 3,442,996,687 |
| \$ | 4,605,663,347 | \$ | 4,102,924,848 |
| \$ | 1,726,190,439 | \$ | 1,501,247,122 |
|  | 37.5\% |  | 36.6\% |
| \$ | 2,879,472,908 | \$ | 2,601,677,726 |
|  | 62.5\% |  | 63.4\% |

6. State Allocation
a. Market Value of Assets: (4)(a) $x(5)(b)$
b. Actuarial Value of Assets: (4)(b) $\times(5)(b)$
7. Political Subdivisions Allocation
a. Market Value of Assets: (4)(a) $\mathrm{x}(5)(\mathrm{d}) \quad \$ \quad 2,679,335,016 \quad \$ \quad 2,281,836,265$
b. Actuarial Value of Assets: (4)(b) $\times(5)(d)$
\$ 2,391,260,643 $\$ \quad 2,183,215,176$

## G. State - Contribution Rate

|  | June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: |
| Development of Annual Required Contribution: |  |  |  |  |
| 1. Current Payroll | \$ | 1,641,685,770 | \$ | 1,648,023,022 |
| 2. Normal Cost (Beginning of Year) |  |  |  |  |
| a. Amount | \$ | 73,614,164 | \$ | 78,888,474 |
| b. Percentage of Payroll |  | 4.49\% |  | 4.79\% |
| 3. Unfunded Actuarial Accrued Liability (UAAL) Annual Amortizations |  |  |  |  |
| a. Amount | \$ | 84,263,994 | \$ | 105,132,459 |
| b. Percentage of Payroll |  | 5.13\% |  | 6.38\% |
| 4. Annual Required Contribution Rate (Actuarially Calculated Rate, Before Smoothing): (2)(b) + (3)(b) |  | 9.62\% |  | 11.17\% |
| 5. Estimated Annual Required Contribution Amount |  |  |  |  |
| a. Fiscal Year Beginning |  | July 1, 2012 |  | July 1, 2013 |
| b. Anticipated Payroll: (1) $\mathrm{x}[(1+4.0 \%)]$ | \$ | 1,707,353,201 | \$ | 1,713,943,943 |
| c. Amount: $(4) \times(5)(\mathrm{b})^{1}$ | \$ | 164,247,378 | \$ | 191,447,538 |
| Approved Funding Rate: ${ }^{2}$ |  | 9.70\% |  | 11.20\% |

[^7]
## H. Political Subdivisions - Aggregate Contribution Rate

| Development of Annual Required Contribution: | June 30, 2011 |  | June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| 1. Current Payroll | \$ | 3,177,087,910 | \$ | 3,256,029,392 |
| 2. Normal Cost (Beginning of Year) |  |  |  |  |
| a. Amount | \$ | 179,392,537 | \$ | 192,085,509 |
| b. Percentage of Payroll |  | 5.64\% |  | 5.90\% |
| 3. Unfunded Actuarial Accrued Liability (UAAL) Annual Amortizations |  |  |  |  |
| a. Amount | \$ | 138,404,949 | \$ | 172,933,097 |
| b. Percentage of Payroll |  | 4.36\% |  | 5.31\% |
| 4. Aggregate Annual Required Contribution Rate (Actuarially Calculated Rate, Before Smoothing): |  | 10.00\% |  | 11.21\% |
| 5. Estimated Annual Required Contribution Amount |  |  |  |  |
| a. Fiscal Year Beginning |  | January 1, 2013 |  | January 1, 2014 |
| b. Anticipated Payroll: (1) $\mathrm{x}[(1+4.0 \%)]^{\wedge} 1.5$ | \$ | 3,369,606,916 | \$ | 3,453,331,941 |
| c. Amount: $(4) \mathrm{x}(5)(\mathrm{b})^{1}$ | \$ | 336,960,692 | \$ | 387,118,511 |
| Approved Funding Rate: ${ }^{2}$ |  | 9.73\% |  | 11.03\% |

${ }^{1}$ Since the Political Subdivision contribution rates becomes effective one and a half years after the valuation date, the Annual Required Contribution Amount is estimated by assuming payroll will increase $4.0 \%$ per year and then applying the Aggregate Annual Required Contribution Rate computed at the valuation date.
${ }^{2}$ At the December 16, 2011 meeting, the Board adopted a policy to phase in a single contribution rate for all participating political subdivisions, effective with the June 30 , 2011 valuation. The Approved Funding Rate for each political subdivision was set equal to the prior year Actual Rate, plus $1.50 \%$, subject to a maximum rate of $11.2 \%$ (i.e. the "composite" rate).

## Unfunded Actuarial Accrued Liability Amortization Schedule ${ }^{1}$

I. State

|  | Date Base <br> Established | Reason | Remaining Unfunded |  | Remaining Period | Amortization Amount |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 6/30/2008 | Fresh Start | \$ | 42,315,297 | 26 | \$ | 3,274,972 |
| 2. | 6/30/2009 | Actuarial Experience |  | 268,257,730 | 27 |  | 20,471,745 |
| 3. | 6/30/2010 | Actuarial Experience and Changes in Actuarial Assumptions |  | 543,980,061 | 28 |  | 40,977,084 |
| 4. | 6/30/2011 | Actuarial Experience and Changes in Actuarial Assumptions |  | 238,003,741 | 29 |  | 17,714,135 |
| 5. | 6/30/2012 | Actuarial Experience and Changes in Actuarial Assumptions |  | 308,333,198 | 30 |  | 22,694,523 |
|  | Total |  | \$ | 1,400,890,027 |  | \$ | 105,132,459 |

## J. Political Subdivisions

| Date Base Established | Reason | Remaining Unfunded |  | Remaining <br> Period | Amortization Amount |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6/30/2006 | Fresh Start | \$ | 215,044,910 | 24 | \$ | 17,180,318 |
| 6/30/2007 | Actuarial Experience and Changes in Actuarial Assumptions |  | 4,311,715 | 25 |  | 338,826 |
| 6/30/2008 | Actuarial Experience |  | 44,717,228 | 26 |  | 3,460,869 |
| 6/30/2009 | Actuarial Experience |  | 328,522,232 | 27 |  | 25,070,753 |
| 6/30/2010 | Actuarial Experience and Changes in Actuarial Assumptions |  | 651,339,165 | 28 |  | 49,064,261 |
| 6/30/2011 | Actuarial Experience and Changes in Actuarial Assumptions |  | 541,692,404 | 29 |  | 40,317,066 |
| 6/30/2012 | Actuarial Experience and Changes in Actuarial Assumptions |  | 509,497,572 | 30 |  | 37,501,004 |
| Total |  | \$ | 2,295,125,226 |  | \$ | 172,933,097 |

[^8]
## SECTION II - FUNDING

## K. History of Employer Contribution Rates ${ }^{1,2}$

| 1.Valuation Date | 2. <br> State |  | $3 .$ <br> Political Subdivisions (Aggregate) |  | 4. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Effective Date | Contribution Rate | Effective Date | Contribution Rate | Weighted Average |
| June 30, 2001 | July 1, 2002 | 5.2\% | January 1, 2003 | 5.0\% | 5.1\% |
| June 30, 2002 | July 1, 2003 | 5.6\% | January 1, 2004 | 6.2\% | 5.9\% |
| June 30, 2003 | July 1, 2004 | 3.8\% | January 1, 2005 | 4.7\% | 4.4\% |
| June 30, 2004 | July 1, 2005 | 4.5\% | January 1, 2006 | 5.3\% | 5.0\% |
| June 30, 2005 | July 1, 2006 | 5.5\% | January 1, 2007 | 6.3\% | 6.0\% |
| June 30, 2006 | July 1, 2007 | 6.3\% | January 1, 2008 | 6.9\% | 6.7\% |
| June 30, 2007 | July 1, 2008 | 6.3\% | January 1, 2009 | 6.9\% | 6.6\% |
| June 30, 2008 | July 1, 2009 | 6.5\% | January 1, 2010 | 7.1\% | 6.8\% |
| June 30, 2009 | July 1, 2010 | 7.0\% | January 1, 2011 | 7.9\% | 7.6\% |
| June 30, 2010 | July 1, 2011 | 8.6\% | January 1, 2012 | 8.8\% | 8.7\% |
| June 30, 2011 | July 1, 2012 | 9.7\% | January 1, 2013 | 9.7\% | 9.7\% |
| June 302012 | July 1, 2013 | 11.2\% | January 1, 2014 | 11.0\% | 11.1\% |

${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.
${ }^{2}$ Prior to the June 30, 2011 valuation date, rates shown reflect application of the contribution rate smoothing rules.

## L. Approximate Investment Return for Year Ending June 30, 2012

|  | Market Value of Assets |  | Actuarial Value of Assets |  |
| :---: | :---: | :---: | :---: | :---: |
| 1. Balance, beginning of year | \$ | 12,461,355,909 | \$ | 12,000,586,310 |
| 2. Balance, end of year |  | 12,243,753,114 |  | 12,088,224,658 |
| 3. Total increase: (2)-(1) |  | (217,602,795) |  | 87,638,348 |
| 4. Contributions and Transfers In |  | 559,887,338 |  | 559,887,338 |
| 5. Benefit payments and Transfers Out |  | 748,745,154 |  | 748,745,154 |
| 6. Net additions: (4) - (5) |  | $(188,857,816)$ |  | $(188,857,816)$ |
| 7. Net investment increase: (3) - (6) |  | (28,744,979) |  | 276,496,164 |
| 8. Average assets: [(1) + (2) - (7)] / 2 |  | 12,366,927,001 |  | 11,906,157,402 |
| 9. Approximate rate of return: $(7) /(8)^{1}$ |  | (0.2\%) |  | 2.3\% |

## M. Historical Investment Experience

| Year Ending June 30 | 2. 3. <br> Approximate Annual Rate of Investment Return |  | 4. <br> Actuarial Assumed Interest Rate |
| :---: | :---: | :---: | :---: |
|  | Market Basis | Actuarial Basis |  |
| 2001 | (2.1\%) | 5.8\% | 7.25\% |
| 2002 | (4.9\%) | 3.1\% | 7.25\% |
| 2003 | 3.5\% | 4.2\% | 7.25\% |
| 2004 | 16.2\% | 6.3\% | 7.25\% |
| 2005 | 9.2\% | 7.0\% | 7.25\% |
| 2006 | 10.4\% | 7.9\% | 7.25\% |
| 2007 | 17.7\% | 10.4\% | 7.25\% |
| 2008 | (8.3\%) | 5.3\% | 7.25\% |
| 2009 | (21.1\%) | (0.9\%) | 7.25\% |
| 2010 | 13.5\% | (0.7\%) | 7.25\% |
| 2011 | 19.9\% | (1.2\%) | 7.0\% |
| 2012 | (0.2\%) | 2.3\% | 7.0\% |

[^9]
## SECTION II - FUNDING

## N. Interest Rate Sensitivity

The investment return assumption (discount rate), as required by GASB, should be based on an estimated long-term investment yield for the plan, with consideration given to the nature and mix of current and expected plan investments. Management and the Board continually monitor the investment rate of return assumption and the Board formally reviews the assumption and makes changes as appropriate. The Board changed the assumption for the June 30, 2012 valuation from $7.0 \%$ to $6.75 \%$.

To illustrate the importance of the investment rate of return, which is used to discount the actuarial liabilities of the Plan, the funded status and ARC Rate (for the fiscal year beginning July 1, 2013 for State and January 1, 2014 for Political Subdivisions) are shown below at $6.75 \%$ (the current assumption), $6.0 \%$ (a three-fourths of a percent decrease), $6.5 \%$ (a one-fourth of a percent decrease), $7.5 \%$ (a three-fourths of a percent increase), and $8.0 \%$ (a one and one-fourth of a percent increase).

## Funded Status

Actuarial Accrued Liability
Actuarial Value of Assets

Unfunded Actuarial Accrued Liability

Funded Ratio

Annual Required Contribution Rate
Normal Cost Percentage

UAAL Amortization Percentage

Annual Required Contribution Percentage

| 0.75\% | 0.25\% |
| :---: | :---: |
| $\begin{gathered} \text { Decrease: } \\ (6.0 \%) \\ \hline \end{gathered}$ | $\begin{gathered} \text { Decrease: } \\ (6.5 \%) \\ \hline \end{gathered}$ |
| 17,032,412,879 | 16,182,000,738 |
| 12,088,224,658 | 12,088,224,658 |


| Assumption: <br> $(6.75 \%)$ |
| :---: |
| $15,784,239,911$ |
| $12,088,224,658$ |


| $0.75 \%$ | $1.25 \%$ |
| :---: | :---: |
| Increase: | Increase: |
| $(7.5 \%)$ | $(8.0 \%)$ |

$$
\$ 4,944,188,221 \quad \$ 4,093,776,080
$$

71.0\%
6.70\%
7.04\%
13.74\%
74.7\%
\$3,696,015,253
76.6\%
5.53\%
5.67\%
11.20\%
$4.29 \%$
8.87\%
7.42\%

## ACCOUNTING

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## REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB \#25 AND \#27

## A. Assumptions and Methods Under GASB \#25 and \#27

Under the Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27, as amended by GASB No. 50, certain information about the plan is required to be disclosed. 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 actuarial valuation follows:

Valuation Date
Actuarial Cost Method
Amortization Method
Amortization Period
Actuarial Value of Assets
Actuarial Assumptions:

| Investment Rate of Return | $6.75 \%$ |
| :--- | :--- |
| Future Salary Increases | $3.25 \%-4.5 \%$ (includes 3.0\% wage inflation) |
| Cost-of-Living Increases | $1.0 \%$ compounded annually on employer funded pension |

June 30, 2012
Entry Age Normal (Level Percent of Payroll)
Level Dollar
30 Years, Closed
4-Year Smoothed Market Value with 20\% Corridor
6.75\%
1.0\% compounded annually on employer funded pension

## B. Membership Data

The plan consisted of the following membership as of June 30, 2012, the date of the latest actuarial valuation:

| Retired members, beneficiaries and disabled members receiving benefits: | 72,992 |
| :--- | ---: |
| Terminated vested plan members entitled to but not yet receiving benefits: | 21,423 |
| Terminated non-vested plan members entitled to a refund of ASA balance: | 47,651 |
| Active Plan Members: | 145,519 |
| Total membership: | 287,585 |

## REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB \#25 AND \#27 (CONTINUED)

## C. Total PERF - Statement of Fiduciary Net Position

1. Assets
a. Cash
b. Securities Lending Collateral

| \$ | $11,501,124$ |
| :---: | ---: |
|  | $427,226,320$ |
|  |  |
| \$ | $103,267,801$ |
|  | $(409,923)$ |
|  | - |
|  | - |
| $\$$ | $107,625,424$ |
|  | $12,126,139,796$ |
|  | $9,068,654$ |
| $\$$ | $12,681,561,318$ |

2. Liabilities
a. Accounts Payable
b. Retirement Benefits Payable
c. Salaries and Benefits Payable
d. Investments Payable
e. Securities Lending Obligations
\$ 4,998,918

$$
2,115,852
$$

f. Securities Sold Under Agreement to Repurchase
g. Due To Other Funds
h. Total Liabilities: $(2)(a)+(2)(b)+(2)(c)+(2)(d)+(2)(e)+(2)(f)+(2)(g)$
3. Net Assets Held in Trust for Pension Benefits: (1)(f) - (2)(h)
703,281

84,577 427,226,320
i. Contributions Receivable
ii. Miscellaneous Receivables

4,767,546
iv. Interest and Divend
d. Total Investments
e. Net Capital Assets
f. Total Assets: $(1)(a)+(1)(b)+(1)(c)(v i)+(1)(d)+(1)(e)$
\$ 12,681,561,318

2,679,256
\$ 437,808,204
\$ 12,243,753,114

## REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB \#25 AND \#27 (CONTINUED)

## D. Total PERF - Statement of Changes in Fiduciary Net Position

1. Net Assets as of June 30, 2011
\$ 12,461,355,909
2. Revenue (Additions)
a. Contributions
i. Member Contributions

| \$ | 158,695,936 |
| :---: | :---: |
|  | 397,842,387 |
| \$ | 556,538,323 |
| \$ | 43,178,869 |
|  | 3,664,862 |
|  | $(183,579)$ |
|  | $(50,612,067)$ |
| \$ | (3,951,915) |
| \$ | 3,341,006 |
|  | 8,009 |
| \$ | 3,349,015 |
| \$ | 555,935,423 |

3. Expenses (Deductions)
a. Pension and Disability Benefits
\$ 669,181,018
b. Death, Survivor, and Funeral Benefits
c. Distributions of Contributions and Interest
d. Interfund Transfers

69,880,200
e. Pensions Relief Distributions
f. Local Unit Withdrawals
g. Administrative and Project Expenses
h. Total Expenses (Deductions): $(3)(a)+(3)(b)+(3)(c)+(3)(d)+(3)(e)+(3)(f)+(3)(g)$

| $24,793,064$ |
| ---: |
| $\$ \quad 773,538,218$ |

4. Changes in Net Assets Held in Trust for Pension Benefits: (2)(d) - (3)(h)
$\$ \quad(217,602,795)$
5. Net Assets as of June 30, 2012: (1) + (4)

## REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB \#25 AND \#27 (CONTINUED)

E. Total PERF - Schedule of Funding Progress ${ }^{1}$

| 1. | 2. | 3. | 4. | 5. | 6. | 7. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Actuarial |  |  |  |  |  |  |
| Valuation <br> Date June 30 | Actuarial | Actuarial Accrued | Unfunded Actuarial | Funded | Current | UAAL as a |
|  | Value of Assets | Liability (AAL) | Accrued Liability (UAAL) | Ratio | Payroll | \% of Payroll |
|  |  |  | (3) - (2) | (2) / (3) |  | (4) / (6) |
| 2007 | 12,220,934,214 | 12,439,798,183 | 218,863,969 | 98.2\% | 4,385,675,869 | 5.0\% |
| 2008 | 12,780,116,052 | 13,103,221,177 | 323,105,125 | 97.5\% | 4,600,353,894 | 7.0\% |
| 2009 | 12,569,335,911 | 13,506,280,351 | 936,944,440 | 93.1\% | 4,931,422,940 | 19.0\% |
| 2010 | 12,357,199,014 | 14,506,052,201 | 2,148,853,187 | 85.2\% | 4,896,012,580 | 43.9\% |
| 2011 | 12,000,586,310 | 14,913,147,293 | 2,912,560,983 | 80.5\% | 4,818,773,680 | 60.4\% |
| 2012 | 12,088,224,658 | 15,784,239,911 | 3,696,015,253 | 76.6\% | 4,904,052,414 | 75.4\% |

F. State - Schedule of Funding Progress ${ }^{1,2}$

| 1. | 2. | 3. | 4. | 5. | 6. | 7. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Actuarial |  |  |  |  |  |  |
| Valuation | Actuarial | Actuarial Accrued | Unfunded Actuarial | AAL Funded | Current | UAAL as a |
| Date June 30 | Value of Assets | Liability (AAL) | Accrued Liability (UAAL) | Ratio | Payroll | \% of Payroll |
|  |  |  | (3) - (2) | (2) / (3) |  | (4) / (6) |
| 2007 | 4,588,840,682 | 4,573,270,312 | (15,570,370) | 100.3\% | 1,573,566,285 | (1.0\%) |
| 2008 | 4,776,663,937 | 4,821,023,605 | 44,359,668 | 99.1\% | 1,661,248,319 | 2.7\% |
| 2009 | 4,548,408,448 | 4,869,897,611 | 321,489,163 | 93.4\% | 1,749,780,803 | 18.4\% |
| 2010 | 4,374,384,859 | 5,248,751,427 | 874,366,568 | 83.3\% | 1,730,479,696 | 50.5\% |
| 2011 | 4,158,786,069 | 5,264,131,212 | 1,105,345,143 | 79.0\% | 1,641,685,770 | 67.3\% |
| 2012 | 4,141,524,168 | 5,542,414,195 | 1,400,890,027 | 74.7\% | 1,648,023,022 | 85.0\% |

G. Political Subdivisions - Schedule of Funding Progress ${ }^{\text {1,2 }}$

| 1. | 2. | 3. | 4. 5 |  | 6. | 7. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Actuarial |  |  |  |  |  |  |
| Valuation |  | Actuarial | Actuarial Accrued | Unfunded Actuarial | AAL Funded | Current | UAAL as a |
| Date June 30 | Value of Assets | Liability (AAL) | Accrued Liability (UAAL) | Ratio | Payroll | \% of Payroll |
|  |  |  | (3) - (2) | (2) / (3) |  | (4) / (6) |
| 2007 | 7,632,093,532 | 7,866,527,871 | 234,434,339 | 97.0\% | 2,812,109,584 | 8.3\% |
| 2008 | 8,003,452,115 | 8,282,197,572 | 278,745,457 | 96.6\% | 2,939,105,575 | 9.5\% |
| 2009 | 8,020,927,463 | 8,636,382,740 | 615,455,277 | 92.9\% | 3,181,642,137 | 19.3\% |
| 2010 | 7,982,814,155 | 9,257,300,774 | 1,274,486,619 | 86.2\% | 3,165,532,884 | 40.3\% |
| 2011 | 7,841,800,241 | 9,649,016,081 | 1,807,215,840 | 81.3\% | 3,177,087,910 | 56.9\% |
| 2012 | 7,946,700,490 | 10,241,825,716 | 2,295,125,226 | 77.6\% | 3,256,029,392 | 70.5\% |

[^10]
## REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB \#25 AND \#27 (CONTINUED)

## H. Total PERF - Schedule of Employer Contributions ${ }^{1}$

| 1. |
| :---: |
| Plan Year Ending <br> June 30 |
| 2007 |
| 2008 |
| 2009 |
| 2010 |
| 2011 |
| 2012 |


| 2. |
| :---: |
| Annual Required |
| Contribution (ARC) |
| $275,170,690$ |
| $291,397,103$ |
| $316,059,105$ |
| $360,183,300$ |
| $483,842,478$ |
| $509,723,901$ |


| 3. Actual | 4. |
| :---: | :---: |
| Employer Contribution | \% of ARC |
|  | (3) / (2) |
| 260,150,203 | 94.5\% |
| 303,876,594 | 104.3\% |
| 323,151,092 | 102.2\% |
| 331,089,590 | 91.9\% |
| 342,778,706 | 70.8\% |
| 397,842,387 | 78.1\% |

I. State-Schedule of Employer Contributions ${ }^{\mathbf{1}}$

| 1. |
| :---: |
| Plan Year Ending <br> June 30 |
| 2007 |
| 2008 |
| 2009 |
| 2010 |
| 2011 |
| 2012 |


| 2. |
| :---: |
| Annual Required <br> Contribution (ARC) |
| $96,430,158$ |
| $99,134,700$ |
| $107,981,141$ |
| $118,199,909$ |
| $176,289,960$ |
| $183,389,316$ |


| 3. <br> Actual | 4. |
| :---: | :---: |
| Employer Contribution | \% of ARC |
|  | (3) / (2) |
| 89,800,501 | 93.1\% |
| 106,867,251 | 107.8\% |
| 111,214,012 | 103.0\% |
| 111,554,875 | 94.4\% |
| 115,232,212 | 65.4\% |
| 138,327,474 | 75.4\% |

## J. Political Subdivisions - Schedule of Employer Contributions ${ }^{1}$

1. 

| Plan Year Ending |
| :---: |
| June 30 |
| 2007 |
| 2008 |
| 2009 |
| 2010 |
| 2011 |
| 2012 |

2. 

Annual Required
Contribution (ARC)

| 3. <br> Actual | 4. |
| :---: | :---: |
| Employer Contribution | \% of ARC |
|  | (3) / (2) |
| 170,349,702 | 95.3\% |
| 197,009,343 | 102.5\% |
| 211,937,080 | 101.9\% |
| 219,534,715 | 90.7\% |
| 227,546,494 | 74.0\% |
| 259,514,913 | 79.5\% |

${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.

## REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB \#25 AND \#27 (CONTINUED)

K. State-Development of Net Pension Obligation (NPO) ${ }^{1}$

| 1. |  | 2. |  | 3. |  | 4. | 5. |  | 6. |  | 7. |  | 8. | $\begin{gathered} 9 . \\ \text { NPO at } \end{gathered}$ |  | 10. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Plan Year |  | Annual | Interest |  |  |  |  | Net Pension |  | Actual |  | Change |  |  |  |  |  |
| Ending |  | Required |  | n NPO at |  | ARC | Amortization |  |  |  | Employer |  |  | Beginning |  |  | NPO at |
| June 30 | Con | ribution (ARC) | Discount Rate |  |  | Adjustment | Factor | Cost (NPC) |  |  | ontribution | in NPO |  | of Year |  | End of Year |  |
|  |  |  |  |  |  | (9) / (5) |  | (2) $+(3)-(4)$ |  |  |  | (6) - (7) |  |  |  | (8) $+(9)$ |  |
| 2010 | \$ | 118,199,909 | \$ | $(4,579,156)$ | \$ | $(5,218,303)$ | 12.1037 | \$ | 118,839,056 | \$ | 111,554,875 | \$ | 7,284,181 | \$ | $(63,160,773)$ | \$ | $(55,876,592)$ |
| 2011 | \$ | 176,289,960 | \$ | $(3,911,361)$ | \$ | $(4,502,909)$ | 12.4090 | \$ | 176,881,508 | \$ | 115,232,212 | \$ | 61,649,296 | \$ | $(55,876,592)$ | \$ | 5,772,704 |
| 2012 | \$ | 183,389,316 | \$ | 404,089 | \$ | 465,203 | 12.4090 | \$ | 183,328,202 | \$ | 138,327,474 | \$ | 45,000,728 | \$ | 5,772,704 | \$ | 50,773,432 |

L. Political Subdivisions - Development of Net Pension Obligation (NPO) ${ }^{1}$

${ }^{1}$ NPO at the beginning of the 2010 plan year was determined by the prior actuary.
${ }^{2}$ Individual Political Subdivisions can withdraw from the plan or merge with other Political Subdivisions which prevents the NPO from reconciling year over year

## REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB \#25 AND \#27 (CONTINUED)

M. State - Three-Year Trend Information


## SECTION III - ACCOUNTING

O. Solvency Test ${ }^{1}$

Portion of Actuarial Liability Provided by Assets

| 1. | 2. | 3. | 4. | 5. | 6. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| As of June 30 | ASA <br> Balances | Retired and <br> Beneficiaries | Non-Retired <br> Members (Employer Financed Portion) | Total Actuarial <br> Accrued <br> Liabilities | Actuarial Value of Assets |
| 2007 | $\begin{array}{r} \hline 2,707,176,269 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 4,007,389,159 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 5,725,232,755 \\ 96.2 \% \end{array}$ | $\begin{array}{r} \hline 12,439,798,183 \\ 98.2 \% \end{array}$ | 12,220,934,214 |
| 2008 | $\begin{array}{r} 2,694,331,410 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 4,227,365,567 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 6,181,524,200 \\ 94.8 \% \end{array}$ | $\begin{array}{r} 13,103,221,177 \\ 97.5 \% \end{array}$ | 12,780,116,052 |
| 2009 | $\begin{array}{r} 2,669,318,240 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 4,611,256,619 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 6,225,705,492 \\ 85.0 \% \end{array}$ | $\begin{array}{r} 13,506,280,351 \\ 93.1 \% \end{array}$ | 12,569,335,911 |
| 2010 | $\begin{array}{r} 2,780,570,388 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 4,931,592,130 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 6,793,889,683 \\ 68.4 \% \end{array}$ | $\begin{array}{r} 14,506,052,201 \\ 85.2 \% \end{array}$ | 12,357,199,014 |
| 2011 | $\begin{array}{r} 2,805,023,137 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 5,370,786,260 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 6,737,337,896 \\ 56.8 \% \end{array}$ | $\begin{array}{r} 14,913,147,293 \\ 80.5 \% \end{array}$ | 12,000,586,310 |
| 2012 | $\begin{array}{r} 2,749,448,762 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 5,895,779,209 \\ 100.0 \% \end{array}$ | $\begin{array}{r} 7,139,011,940 \\ 48.2 \% \end{array}$ | $\begin{array}{r} 15,784,239,911 \\ 76.6 \% \end{array}$ | 12,088,224,658 |

[^11]
## CENSUS DATA

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I. Schedule of Average Benefit Payments as of June 30, 2012 ..... 37

## SECTION IV - CENSUS DATA

## A. Reconciliation of Participant Data

| Total as of June 30, 2011 | 147,933 | 70,446 | 20,634 | 1,659 | 4,655 | 57,155 | 8,570 | 311,052 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Entrants | 13,925 | - | - | - | - | - | - | 13,925 |
| Rehires | 1,655 | $(1,313)$ | (342) | - | - | - | - | - |
| Non-Vested Terminations | $(8,278)$ | 8,287 | (9) | - | - | - | - | - |
| Vested Terminations | $(2,392)$ | (317) | 2,710 | (1) | - | - | - | - |
| Retirements | $(3,276)$ | (52) | (927) | o | (4) | 4,260 | (1) | - |
| Disablements | (188) | (22) | (80) | o | 319 | (29) | o | - |
| Death with Beneficiary | (51) | (2) | (10) | (48) | (78) | (495) | 684 | - |
| Death - Entitled to ASA and/or Pension Benefits | (138) | (144) | (20) | 302 | - | - | - | - |
| Death without Beneficiary | (6) | - | - | - | (135) | $(1,526)$ | (469) | $(2,136)$ |
| Refunds | $(3,665)$ | $(30,078)$ | (769) | $(1,430)$ | - | (6) | (3) | $(35,951)$ |
| Data Adjustments | - | 587 | 13 | - | 29 | 35 | 31 | 695 |
| Total as of June 30, 2012 | 145,519 | 47,392 | 21,200 | 482 | 4,786 | 59,394 | 8,812 | 287,585 |

[^12]
## B. Census Information ${ }^{1}$

June 30, 2011 June 30, 2012

1. Active
a. Number
i. State
ii. Political Subdivisions
iii. Total
b. Average Age
c. Average Years of Service
d. Covered Payroll of Actives
i. State
ii. Political Subdivisions
iii. Total

| 45,912 | 45,156 |  |
| ---: | ---: | ---: |
| 102,021 | 100,363 |  |
|  | 147,933 |  |
| 475 | 479 |  |
| 11.4 |  | 47.6 |


|  | 1,641,685,770 |  | 1,648,023,022 |
| :---: | :---: | :---: | :---: |
|  | 3,177,087,910 |  | 3,256,029,392 |
| \$ | 4,818,773,680 | \$ | 4,904,052,414 |

2. Inactive - Vested
a. Number
b Average Age
c. Average Years of Service

| 20,933 | 21,423 |
| ---: | ---: |
| 52.7 | 52.7 |
| 11.8 | 11.9 |

3. Inactive - Non-Vested
a. Number

71,806
47,651
4. Retiree/Beneficiary/Disabled
a. Number
b. Average Age
c. Annual Benefits Payable
i. Pension
ii. ASA Annuities
iii. Total

| 70,380 | 72,992 |
| ---: | ---: |
| 72.5 | 72.5 |



[^13]
## SECTION IV - CENSUS DATA

C. Schedule of Active Member Valuation Data ${ }^{\mathbf{1 , 2}}$

| $\begin{gathered} 1 . \\ \text { As of } \\ \text { June } 30 \\ \hline \end{gathered}$ | 2. <br> Active <br> Members | 3.AnnualPayroll(\$ in Thousands) |  | 4. <br> Average <br> Pay | 5. <br> Annual <br> Percent <br> Increase |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | (3) / (2) |  |
| 2005 | 141,428 | \$ | 4,318,450 | 30,535 | 3.5\% |
| 2006 | 140,563 |  | 4,322,180 | 30,749 | 0.7\% |
| 2007 | 138,863 |  | 4,385,676 | 31,583 | 2.7\% |
| 2008 | 140,146 |  | 4,600,354 | 32,825 | 3.9\% |
| 2009 | 147,792 |  | 4,931,423 | 33,367 | 1.7\% |
| 2010 | 149,877 |  | 4,896,013 | 32,667 | (2.1\%) |
| 2011 | 147,933 |  | 4,818,774 | 32,574 | (0.3\%) |
| 2012 | 145,519 |  | 4,904,052 | 33,700 | 3.5\% |

[^14]D. Schedule of Retirees, Beneficiaries, and Disabled Members ${ }^{1,2,3}$
(\$ in Thousands)

${ }^{1}$ Headcounts reflect the record counts used in the valuation, which may include duplicate records for members (e.g. members with multiple periods of service).
${ }^{2}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.
${ }^{3}$ Annual Allowances include pension and ASA annuity benefits.
${ }^{4}$ End of year annual allowances are not equal to the prior end of year annual allowances plus additions and less removals because of reductions for beneficiary benefits, data changes, and cost-of-living increases.

## SECTION IV - CENSUS DATA

E. Distribution of Active Members by Age and Service ${ }^{1}$

| Attained | Distribution of Active Members by Age and Service as of June 30, 2012 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | Under 1 year | 1 to 4 years | 5 to 9 years | 10 to 14 years | 15 to 19 years | 20 to 24 years | 25 to 29 years | 30 to 34 years | 35 to 39 years | Over 40 years | Total |
| <25 | 2,232 | 2,054 | 66 | 1 | 1 |  |  |  |  |  | 4,354 |
| 25-29 | 2,360 | 6,180 | 2,238 | 46 |  |  |  |  |  |  | 10,824 |
| 30-34 | 1,410 | 4,655 | 4,458 | 1,397 | 47 |  |  |  |  |  | 11,967 |
| 35-39 | 1,176 | 3,809 | 3,919 | 2,874 | 938 | 41 | 2 |  |  |  | 12,759 |
| 40-44 | 1,142 | 4,128 | 4,421 | 3,172 | 2,392 | 1,025 | 85 | 11 | 1 |  | 16,377 |
| 45-49 | 999 | 3,878 | 4,791 | 3,798 | 2,633 | 2,310 | 1,270 | 103 | 3 | 2 | 19,787 |
| 50-54 | 817 | 3,373 | 4,662 | 4,532 | 3,603 | 2,712 | 2,322 | 1,725 | 176 | 3 | 23,925 |
| 55-59 | 700 | 2,803 | 3,811 | 3,968 | 3,497 | 3,151 | 2,201 | 1,841 | 1,045 | 61 | 23,078 |
| 60-64 | 364 | 1,826 | 2,657 | 2,564 | 2,146 | 2,109 | 1,580 | 1,058 | 862 | 332 | 15,498 |
| 65-69 | 143 | 643 | 1,140 | 881 | 689 | 605 | 435 | 277 | 186 | 127 | 5,126 |
| 70\&Up | 43 | 282 | 475 | 389 | 286 | 155 | 71 | 50 | 47 | 26 | 1,824 |
| Total | 11,386 | 33,631 | 32,638 | 23,622 | 16,232 | 12,108 | 7,966 | 5,065 | 2,320 | 551 | 145,519 |

${ }^{1}$ Headcounts reflect the record counts used in the valuation, which may include duplicate records for members (e.g. members with multiple periods of service).

## F. Distribution of Inactive Vested Members by Age and Service ${ }^{1}$

| Attained Age | Distribution of Inactive Vested Members by Age and Service as of June 30, 2012 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Under 5 years | 5 to 9 years | 10 to 14 years | 15 to 19 years | 20 to 24 years | 25 to 29 years | Over 30 years | Total |
| <25 |  |  | 2 |  |  |  |  | 2 |
| 25-29 |  |  | 2 |  |  |  |  | 2 |
| 30-34 |  |  | 342 | 5 |  |  |  | 347 |
| 35-39 |  |  | 1,119 | 282 | 9 |  |  | 1,410 |
| 40-44 |  |  | 1,445 | 929 | 253 | 6 | 2 | 2,635 |
| 45-49 |  |  | 1,722 | 843 | 512 | 127 | 14 | 3,218 |
| 50-54 |  |  | 2,133 | 1,273 | 625 | 321 | 117 | 4,469 |
| 55-59 |  |  | 2,267 | 1,390 | 734 | 344 | 197 | 4,932 |
| 60-64 |  |  | 2,157 | 679 | 358 | 157 | 164 | 3,515 |
| 65-69 |  |  | 362 | 158 | 87 | 35 | 57 | 699 |
| 70\&Up |  |  | 85 | 42 | 30 | 15 | 22 | 194 |
| Total |  |  | 11,636 | 5,601 | 2,608 | 1,005 | 573 | 21,423 |

[^15]
## G. Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired ${ }^{1}$

| Attained | Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired as of June 30,2012 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | Under 5 years | 5 to 9 years | 10 to 14 years | 15 to 19 years | 20 to 24 years | 25 to 29 years | Over 30 years | Total |
| <40 | 16 | 10 | 1 |  |  |  |  | 27 |
| 40-44 | 35 | 35 | 11 |  | 1 |  |  | 82 |
| 45-49 | 76 | 78 | 47 | 20 | 2 |  |  | 223 |
| 50-54 | 606 | 174 | 99 | 60 | 21 | 2 |  | 962 |
| 55-59 | 2,570 | 942 | 229 | 108 | 51 | 1 |  | 3,901 |
| 60-64 | 6,303 | 2,665 | 729 | 197 | 84 | 10 | 7 | 9,995 |
| 65-69 | 7,787 | 4,738 | 1,702 | 631 | 105 | 18 | 11 | 14,992 |
| 70-74 | 2,833 | 5,794 | 3,383 | 1,296 | 407 | 27 | 26 | 13,766 |
| 75-79 | 564 | 2,156 | 4,271 | 2,823 | 790 | 239 | 36 | 10,879 |
| 80-84 | 168 | 563 | 1,263 | 3,901 | 1,936 | 470 | 219 | 8,520 |
| 85-89 | 55 | 150 | 358 | 930 | 2,848 | 1,154 | 362 | 5,857 |
| 90\&Up | 9 | 44 | 77 | 184 | 537 | 1,695 | 1,242 | 3,788 |
| Total | 21,022 | 17,349 | 12,170 | 10,150 | 6,782 | 3,616 | 1,903 | 72,992 |

[^16]
## SECTION V - CENSUS DATA

H. Schedule of Benefit Recipients by Type of Benefit Option

Number of Benefit Recipients by Benefit Option as of June 30, 2012

|  | Number of Benefit Recipients by Benefit Option as of June 30, 2012 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Amount of Monthly Benefit | Five Year <br> Guaranteed <br> Beneficiary Benefit (Option 10) | Benefit with No Guarantee (Option 20) | $\begin{gathered} \text { Joint with Full } \\ \text { Survivor } \\ \text { Benefits (Option } \\ 30 \text { ) } \\ \hline \end{gathered}$ | Joint with TwoThirds Survivor Benefits (Option 40) | Joint with OneHalf Survivor Benefits (Option 50) | Integration with Social Security (Option 61) | Five Year Guaranteed Beneficiary Benefit with ASA Cash Refund (Option 71) | Benefit with No Guarantee (Option 8o) | Survivors | Disabled | Total |
| \$ 1-500 | 11,408 | 7,352 | 5,990 | 631 | 1,488 | 289 | 968 | o | 5,979 | 3,097 | 37,202 |
| 501-1,000 | 5,539 | 5,861 | 3,586 | 786 | 1,621 | 179 | 910 | 1 | 2,126 | 1,284 | 21,893 |
| 1,001-1,500 | 1,645 | 2,517 | 1,753 | 431 | 810 | 63 | 397 | o | 498 | 317 | 8,431 |
| 1,501-2,000 | 544 | 1,013 | 680 | 246 | 323 | 42 | 161 | o | 131 | 71 | 3,211 |
| 2,001-3,000 | 254 | 587 | 401 | 168 | 229 | 38 | 125 | o | 67 | 17 | 1,886 |
| over 3,000 | 43 | 129 | 70 | 42 | 44 | 8 | 22 | o | 11 | o | 369 |
| Total | 19,433 | 17,459 | 12,480 | 2,304 | 4,515 | 619 | 2,583 | 1 | 8,812 | 4,786 | 72,992 |

I. Schedule of Average Benefit Payments as of June 30, $2012^{1}$

|  | Years of Credited Service |  |  |  |  |  |  |  |  |  |  |  |  |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 |  | 5-9 |  | 10-14 |  | 15-19 |  | 20-24 |  | 25-29 |  | $30+$ |  |  |  |
| Average Monthly Defined Benefit | \$ | 103 | \$ | 170 | \$ | 265 | \$ | 363 | \$ | 504 | \$ | 701 | \$ | 1,139 | \$ | 555 |
| Average Monthly ASA Annuity | \$ | 37 | \$ | 43 | \$ | 89 | \$ | 116 | \$ | 171 | \$ | 233 | \$ | 407 | \$ | 188 |
| Average Final Average Salary | \$ | 26,362 | \$ | 21,011 | \$ | 21,993 | \$ | 24,513 | \$ | 26,534 | \$ | 29,347 | \$ | 36,331 | \$ | 27,306 |
| Number of Benefit Recipients |  | 516 |  | 2,007 |  | 12,369 |  | 19,361 |  | 15,258 |  | 10,589 |  | 12,892 |  | 72,992 |

[^17]
## ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions 38
B. Actuarial Methods 43

## A. Actuarial Assumptions

The assumptions used in the valuation were selected and approved by the INPRS Board of Trustees. The demographic assumptions are reviewed every five years through a study of actual experience. In this way, the actuary provides guidance to the Board in selecting the assumptions. The actuary and other economic and investment professionals also provide advice to the Board for selecting the economic assumptions. In our opinion, the assumptions are reasonable for purposes of this valuation.

| Interest Rate / Investment Return | 6.75\% (net of administrative and investment expenses) |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Interest on Member ASA Balances | 3.0\% per year |  |  |  |
| Future Salary Increases | Based on 2005-2010 experience. Illustrative rates shown below: |  |  |  |
|  | Age | Inflation | Productivity, <br> Merit, and Promotion | Total Individual <br> Salary growth |
|  | <31 | 3.0\% | 1.5\% | 4.5\% |
|  | 31-45 | 3.0\% | 1.0\% | 4.0\% |
|  | 46-60 | 3.0\% | 0.5\% | 3.5\% |
|  | $>=61$ | 3.0\% | 0.25\% | 3.25\% |
| Inflation | 3.0\% per year |  |  |  |
| Cost of Living Increases | 1.0\% per year in retirement |  |  |  |
| Mortality (Healthy and Disabled) | 2013 IRS Static Mortality projected five (5) years with Scale AA |  |  |  |

## A. Actuarial Assumptions (continued)

Disability

Termination
State (Male)
Earnings < $\mathbf{2 0 , 0 0 0}$

State (Male)
Earnings >= \$20,000

State (Female)
Earnings < \$20,000

Based on 2000-2005 experience for males and 1995-2000 experience for females. Recent experience has been consistent. Illustrative rates shown below:

| Age |  | Male |  | Female |
| :---: | :---: | :---: | :---: | :---: |
| 20 |  | $0.0067 \%$ |  | $0.0050 \%$ |
| 30 |  | $0.0208 \%$ |  | $0.0158 \%$ |
| 40 |  | $0.0646 \%$ |  | $0.0496 \%$ |
| 50 |  | $0.2005 \%$ |  | $0.1556 \%$ |
| 60 |  | $0.6220 \%$ |  | $0.4881 \%$ |
| 70 |  | $0.1000 \%$ |  | $0.1000 \%$ |
| 80 |  | $0.0000 \%$ |  | $0.0000 \%$ |

Select and ultimate tables based on 2005-2010 experience. Illustrative rates shown below:

| Age | Service |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | o | 1 | 2 | 3 | 4 | $5+$ |
| 20 | 57\% | 40\% | 23\% | 19\% | 17\% | 13\% |
| 30 | 56\% | 34\% | 21\% | 17\% | 15\% | 11\% |
| 40 | 55\% | 29\% | 18\% | 15\% | 13\% | 9\% |
| 50 | 55\% | 24\% | 15\% | 13\% | 11\% | 6\% |
| 60+ | 55\% | 20\% | 12\% | 10\% | 9\% | 4\% |


| Age |
| :---: |
| 20 |
| 30 |
| 40 |
| 50 |
| $60+$ |


| Service |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| o | 1 | 2 | 3 | 4 | $5^{+}$ |
| 43\% | 26\% | 13\% | 10\% | 9\% | 7\% |
| 39\% | 20\% | 12\% | 9\% | 8\% | 6\% |
| 36\% | 16\% | 11\% | 8\% | 7\% | 5\% |
| 36\% | 14\% | 9\% | 7\% | 7\% | 4\% |
| 37\% | 13\% | 8\% | 6\% | 6\% | 3\% |


| Age | Service |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 | 1 | 2 | 3 | 4 | $5^{+}$ |
| 20 | 57\% | 40\% | 26\% | 26\% | 21\% | 16\% |
| 30 | 54\% | 36\% | 23\% | 23\% | 19\% | 14\% |
| 40 | 54\% | 32\% | 20\% | 19\% | 16\% | 11\% |
| 50 | 54\% | 29\% | 17\% | 15\% | 13\% | 8\% |
| 60+ | 54\% | 25\% | 15\% | 11\% | 11\% | 6\% |

## SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

## A. Actuarial Assumptions (continued)

Termination (continued)

| State (Female) |  | Service |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Earnings >= \$20,000 | Age | O | 1 | 2 | 3 | 4 | $5+$ |
|  | 20 | 43\% | 25\% | 14\% | 14\% | 11\% | 8\% |
|  | 30 | 36\% | 22\% | 13\% | 12\% | 10\% | 7\% |
|  | 40 | 35\% | 19\% | 12\% | 10\% | 9\% | 6\% |
|  | 50 | 35\% | 17\% | 10\% | 9\% | 7\% | 5\% |
|  | 60+ | 36\% | 16\% | 9\% | 7\% | 6\% | 4\% |
| Political Subdivisions (Male) |  |  |  |  |  |  |  |
| Earnings < \$20,000 | Age | O | 1 | 2 | 3 | 4 | $5^{+}$ |
|  | 20 | 33\% | 25\% | 13\% | 12\% | 10\% | 7\% |
|  | 30 | 29\% | 21\% | 11\% | 10\% | 9\% | 6\% |
|  | 40 | 28\% | 17\% | 10\% | 8\% | 8\% | 5\% |
|  | 50 | 26\% | 14\% | 8\% | 7\% | 6\% | 4\% |
|  | 60+ | 25\% | 11\% | 6\% | 5\% | 5\% | $3 \%$ |
| Political Subdivisions (Male) |  |  |  |  |  |  |  |
| Earnings >= \$20,000 | Age | O | 1 | 2 | 3 | 4 | $5+$ |
|  | 20 | 30\% | 19\% | 7\% | 7\% | 5\% | 4\% |
|  | 30 | 22\% | 14\% | 7\% | 6\% | 5\% | 4\% |
|  | 40 | 22\% | 11\% | 6\% | 5\% | 4\% | 3\% |
|  | 50 | 21\% | 10\% | 5\% | 5\% | 4\% | 3\% |
|  | 60+ |  | 9\% | 4\% |  | 3\% | 2\% |
| Political Subdivisions (Female) |  |  |  |  |  |  |  |
| Earnings < \$20,000 | Age | O | , | 2 | 3 | 4 | $5{ }^{+}$ |
|  | 20 | 36\% | 30\% | 16\% | 12\% | 11\% | 8\% |
|  | 30 | 32\% | 25\% | 14\% | 11\% | 10\% | 7\% |
|  | 40 | 32\% | 21\% | 12\% | 10\% | 9\% | 5\% |
|  | 50 | 31\% | 18\% | 9\% | 8\% | 7\% | 4\% |
|  | 60+ | 30\% | 14\% | 7\% | 6\% | 5\% | 3\% |

## A. Actuarial Assumptions (continued)

## Termination (continued)

Political Subdivisions (Female)
Earnings >=\$20,000

| Age | Service |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | O | 1 | 2 | 3 | 4 | 5+ |
| 20 | 31\% | 21\% | 10\% | 8\% | 7\% | 4\% |
| 30 | 24\% | 16\% | 9\% | 7\% | 6\% | 4\% |
| 40 | 23\% | 14\% | 8\% | 6\% | 5\% | 3\% |
| 50 | 23\% | 12\% | 7\% | 6\% | 5\% | 3\% |
| 60+ | 23\% | 11\% | 6\% | 5\% | 4\% | 2\% |

Retirement
Based on PERF experience 2005-2010. Illustrative rates shown below:

| Age | Service |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 10 | 15 | 20 | 30 | $31+$ |
| 50 | o\% | 4\% | 4\% | 4\% | 4\% |
| 55 | o\% | 7\% | 7\% | 12\% | 7\% |
| 60 | o\% | 10\% | 10\% | 10\% | 10\% |
| 65 | 30\% | 30\% | 30\% | 30\% | 30\% |
| 70 | 25\% | 25\% | 25\% | 25\% | 25\% |
| 75+ | 100\% | 100\% | 100\% | 100\% | 100\% |

Decrements are assumed to occur at the beginning of the year.
$75 \%$ of male members and $60 \%$ of female members are assumed to be married and or to have a dependent beneficiary. Male members are assumed to be three (3) years older than their spouses and female members are assumed to be two (2) years younger than their spouses

## SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

## A. Actuarial Assumptions (continued)

ASA Withdrawal

Data Assumptions

For active members who are expected to terminate prior to becoming vested (before 10 years of service), $100 \%$ of such members are assumed to withdraw their ASA balance immediately upon termination. For all other active members, $50 \%$ of such members are assumed to withdraw their ASA balance immediately upon termination and $50 \%$ of such members are assumed to annuitize their ASA balance upon commencement of their employer funded annuity benefit.

For inactive members who are not vested, $100 \%$ of such members are assumed to withdraw their ASA balance immediately. For inactive members who are vested, $50 \%$ of such members are assumed to withdraw their ASA balance immediately and $50 \%$ of such members are assumed to annuitize upon their ASA balance commencement of their employer funded annuity benefit.

The actual assumptions used to convert ASA balances to annuity forms of payment are different than the valuation assumptions. This results in the liability being slightly greater than the ASA balance for members assumed to annuitize their ASA

Actives and inactives with no date of birth are assumed to be age 48 and 46 , respectively. Spouse gender is assumed to be the opposite gender of the member.

Retirees and disabled members that are not married and do not have a retirement option listed are assumed to elect a 5 -year certain and life annuity. Retirees and disabled members that are married and do not have a retirement option listed are assumed to be receiving a $100 \%$ joint and survivor annuity. Beneficiaries that do not have a retirement option listed are assumed to receive monthly payments for life.

Actives and inactives with a date of death who have not received a distribution of their ASA or commenced a pension annuity are included in the valuation as follows (provided by INPRS):

- For non-vested members, the ASA Balance is included in the valuation
- For vested members, the ASA Balance is included in the valuation if one of the following is true:
- Date of death is more than 3 years before the valuation date
- Age of the member is greater than or equal to 65 with less than 10 years of creditable service
- Age of the member is less than or equal to 65 with less than 15 years of creditable service
- If neither of the items listed above are met, the ASA Balance and estimated pension annuity are included in the valuation.

Changes in Assumptions

For the June 30, 2012 valuation, the Board approved the following assumption changes:

- The interest rate assumption was decreased from 7.0\% to $6.75 \%$.
- The interest rate on member ASA balances was decreased from $7.0 \%$ to $3.0 \%$.
- The mortality table was changed from the 2008 IRS Static Mortality projected five (5) years with Scale AA to the 2013 IRS Static Mortality projected five (5) years with Scale AA.


## B. Actuarial Methods

The actuarial methods used in this valuation were selected and approved by the Board. In general, the methods provide orderly funding of all benefits being accrued, as well as unfunded past-service benefit liabilities, over a period of thirty years. However, the smoothing methods employed in determining the Actuarial Value of Assets may accelerate or lengthen the effective funding period, depending on whether gains or losses are experienced. In our opinion, the actuarial methods are reasonable for the purposes of this valuation.

1. Actuarial Cost Method

The actuarial cost method is Entry Age Normal - Level Percent of Payroll.

The normal cost is calculated separately for each active member and is equal to the level percentage of payroll needed as an annual contribution from entry age to retirement age to fund projected benefits. The actuarial accrued liability on any valuation date is the accumulated value of such normal costs from entry age to the valuation date.

Gains and losses occurring from census experience different than assumed, assumption changes, and benefit changes are amortized over a 30 -year period with level payments each year. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 30-year period. The purpose of the method is to give a smooth progression of the costs from year to year and, at the same time, provide for an orderly funding of the unfunded liabilities.
2. Asset Valuation Method

Actuarial Value of Assets is equal to a four-year smoothing of gains and losses on the Market Value of Assets subject to a 20\% corridor.
3. Employer Funding Contribution Rate

The contribution rate approved for the State is equal to the Actuarially Calculated Rate for the State, rounded up to the next tenth of a percent. The Political Subdivision rates are now based on a composite rate migration, whereby the rate for each Political Subdivision is based on an increase of $1.5 \%$ over the previous year's Actual Rate, up to a maximum of $11.2 \%$ (i.e. the composite rate).

## SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

## B. Actuarial Methods (continued)

4. Method for Allocation of Actuarial Accrued Liability and Normal Cost

The Actuarial Accrued Liability ("AAL") for members with multiple current and/or historical employers is allocated pro rata to each respective employer based on the service the member accrued at each employer. In the event service at each employer is not included in the data, the AAL is allocated evenly amongst all respective employers.

The Normal Cost for members with multiple current employers is allocated to each respective employer based on the salary the member earned at each employer. In the event salary at each employer is not included in the data, the Normal Cost is allocated evenly amongst all respective current employers.

## 5. Changes in Actuarial Methods

There have been no changes in the actuarial methods since the June 30, 2011 valuation.

## SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions

## SECTION VI - SUMMARY OF PLAN PROVISIONS

## Summary of Plan Provisions

The benefit provisions for PERF are set forth in IC 5-10.2 and 5-10.3. A summary of those defined pension benefit provisions is presented below:

Participation All full time employees of the State of Indiana and all full time employees of Political Subdivisions which have adopted the plan become members of PERF upon date of hire.

Eligibility for Defined Pension Benefits
a. Normal Retirement Earliest of:

- Age 65 with 10 or more years of vesting service
- Age 60 with 15 or more years of vesting service
- Age 55 with sum of age and vesting service equal to 85 or more
b. Early Retirement Age 50 with 15 or more years of vesting service
c. Late Retirement Subject to continued employment after normal retirement
d. Disability Retirement 5 or more years of vesting service and qualified for Social Security disability benefits or federal Civil Service disability benefits
e. Termination $\quad 10$ or more years of vesting service and no longer active (i.e. vested inactive)
f. Pre-Retirement Death 15 or more years of vesting service if death occurs in service. If death occurs after separating from service, age 50 with 15 or more years of vesting service


## SECTION VI - SUMMARY OF PLAN PROVISIONS

## Summary of Plan Provisions (continued)

## Amount of Benefits

a. Normal Retirement The normal retirement benefit is a pension payable for life with 60 months guaranteed and is equal to $1.1 \%$ of average monthly earnings ${ }^{1}$ multiplied by years of creditable service earned.
b. Early Retirement The early retirement benefit is the accrued retirement benefit determined as of the early retirement date and payable commencing at the normal retirement date. A member may elect to have the benefit commence prior to normal retirement provided the benefit is reduced by $1 / 10 \%$ for each of the first 60 months and by $5 / 12 \%$ for each of the next 120 months that the benefit commencement date precedes the normal retirement date.
c. Late Retirement

The late retirement benefit is calculated in the same manner as the normal retirement benefit. Creditable service and earnings earned after normal retirement is included in the computation.
d. Disability Retirement The disability retirement benefit is the accrued retirement benefit determined as of the disability date and payable commencing the month following disability date without reduction for early commencement.
e. Termination

The termination benefit is the accrued retirement benefit determined as of the termination date and payable commencing at age 65 . If the member has 15 or more years of creditable service, then the member may elect to receive a reduced early retirement benefit prior to age 65 .
f. Pre-Retirement Death The spouse or dependent beneficiary is entitled to receive the monthly life benefit under the assumption that the member retired on the later of age 50 or the date before the date of death and elected the joint and full survivor option.
${ }^{1}$ Average monthly earnings is the monthly average of earnings during 20 quarters (in groups of 4 consecutive contribution quarters) preceding retirement that produce the highest such average. Earnings include basic salary, the member's $3 \%$ mandatory contribution paid by the employer, the member's salary reduction agreement under Section 125, 430(b), or 457 of the Internal Revenue Code, and up to $\$ 2,000$ of additional compensation received from the employer in anticipation of the member's termination or retirement.

## SECTION VI - SUMMARY OF PLAN PROVISIONS

## Summary of Plan Provisions (continued)

Member Contributions
Each member is required to contribute to an Annuity Savings Account at the rate of $3 \%$ of pay (unless the employer has opted to make the contribution for the employee). These contributions are kept on deposit and credited with interest based on the investment elections of each member until such time as they are refunded or used to provide the annuity benefit at retirement.

The benefits provided by the Annuity Savings Account are in addition to the benefits provided by employer contributions.
a. 5-Year Guaranteed Beneficiary Benefit (Option 10)

Member will receive a monthly benefit for the rest of their life. If the member dies before receiving benefits for 5 years, the beneficiary will receive that monthly benefit for the remainder of those 5 years or a lump sum distribution equal to the present value of those payments. After 5 years, there are no payments available to the beneficiary.
b. Benefit with No Guarantee (Option 20)

Member will receive a monthly benefit for life, but there are no monthly payments to anyone after death. However, the balance of the Annuity Savings Account will be distributed to the beneficiary or estate if it is larger than the payments previously made to the member.
c. Joint with Full Survivor Member will be paid a monthly benefit for life. After death, the same monthly benefit will be paid to the Benefits (Option 30) beneficiary for their lifetime.
d. Joint with Two-Thirds Member will be paid a monthly benefit for life. After death, two-thirds (2/3) of the benefit will be paid to the Survivor Benefits beneficiary for their lifetime.
(Option 40)
e. Joint with One-Half

Member will be paid a monthly benefit for life. After death, one-half $(1 / 2)$ of the benefit will be paid to the Survivor Benefits (Option 50)
beneficiary for their lifetime.

## SECTION VI - SUMMARY OF PLAN PROVISIONS

## Summary of Plan Provisions (continued)

## Optional Forms of Payment (Continued)

f. Integration with Social A member who retires between ages 50 and 62 may integrate the PERF monthly pension benefit with the Security (Option 61) member's estimated Social Security benefits. This does not affect the amount of the benefit received from the Social Security Administration.

Before age 62, the member's benefits will equal the sum of the member's Social Security estimate, multiplied by actuarial factors, and the member's early retirement benefit. This will result in the member receiving a larger monthly benefit payment before age 62 . After age 62 , the member's benefit will equal the difference between the member's Social Security estimate, multiplied by actuarial factors, and the member's pre- 62 monthly pension benefit. Depending upon the member's estimated Social Security disbursement, benefit payments may be greatly reduced or terminated at age 62.
g. 5-Year Guaranteed In order to select this option, the member must choose to combine at least a portion of their ASA with their Beneficiary Benefit lifetime monthly pension benefit. If selected, the member will receive a monthly benefit for the rest of their life. If with ASA Cash Refund the member dies before receiving payments for 5 years, the beneficiary will receive the pension portion of their (Option 71) monthly benefit for the remainder of those 5 years or a lump sum equal to the present value of those remaining payments. Also, upon death (whether death occurs before or after receiving 5 years of benefits), the beneficiary may receive any remaining balance of the Annuity Savings Account.

## Annuity Savings Account ("ASA") Payment Forms

a. Leave ASA Invested with PERF
b. Combine ASA with Lifetime Pension Benefit

Members may choose to leave their ASA invested with PERF. According to IRS regulations, the member must begin distribution at age $701 / 2$. Until the member elects to receive funds, they will remain invested according to member direction.

The member may choose to receive, as part of their monthly benefit, the total amount of their ASA. The member will not receive any other distribution from the ASA other than this monthly payment.

## SECTION VI - SUMMARY OF PLAN PROVISIONS

## Summary of Plan Provisions (continued)

Annuity Savings Account ("ASA") Payment Forms (continued)
c. Withdraw Entire ASA
d. Withdraw 1986 Tax Basis Portion of ASA and Combine Taxable Portion with Pension Benefit

Cost-of-Living Adjustments

Changes in Provisions

The member withdraws their entire ASA by means of either a direct rollover, complete withdrawal, or partial rollover to a qualified plan for the Taxable Portion of their ASA and, if it applicable, one of these choices for the 1986 Tax Basis Portion.

The member withdraws the non-taxable ( 1986 Tax Basis) portion of their ASA in the form of a direct rollover, a complete distribution, or a partial rollover to a qualified plan, and then receives the balance of the account as a part of their monthly payment.

The monthly pension benefits for members in pay status are increased periodically to preserve purchasing power that is diminished due to inflation. Such increases are not guaranteed by Statute and have historically been provided on an "ad hoc" basis.

A "13th check" was paid to each member in pay status during September 2012. The amount of the 13 th check varied based on the years of creditable service the member had earned prior to retirement.

## Definitions of Technical Terms

Definitions of Technical Terms

## SECTION VII - DEFINITIONS OF TECHNICAL TERMS

## Definitions of Technical Terms

Actual Rate

Actuarial Accrued Liability (AAL)

Actuarial Assumptions

Actuarial Cost Method

Actuarially Equivalent

Actuarial Gain/(Loss)

Actuarial Present Value

Actuarial Valuation

For valuations prior to June 30, 2011, the contribution rate expressed as a percentage of covered payroll on an annual basis (not less than $0.0 \%$ ) that is the result of applying applicable smoothing rules to the prior year Actual Rate and current year Actuarially Calculated Rate. Beginning with the June 30, 2011 valuation, the Board resolved to discontinue use of the smoothing rules for establishing contribution rates/amounts.

That portion, as determined by a particular Actuarial Cost Method, of the Present Value of Future Benefits (PVFB) and expenses which is not provided for by future Normal Costs. Generally this means the portion of the PVFB attributable to past service.

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided pension benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.

A procedure for determining an actuarially equivalent allocation of the Present Value of Future Benefits to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.

A method of making the actuarial present value of two series of payments equal as of a given date using the same assumptions.

The difference between actual unfunded Actuarial Accrued Liability and anticipated unfunded Actuarial Accrued Liability - during the period between two valuation dates. It is a measurement of the difference between actual and expected experience.

The single amount now that is equal to a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.

The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

## SECTION VII - DEFINITIONS OF TECHNICAL TERMS

## Definitions of Technical Terms (continued)

Actuarial Valuation Date
Actuarially Calculated Rate

Amortization

Annual Required Contribution of the Employer (ARC)

Creditable Service

Fresh Start

Funding Policy

## Normal Cost (NC)

The date as of which an actuarial valuation is performed.

The precise actuarial contribution rate expressed as a percentage of covered payroll that is determined by summing the Normal Cost and amortization of unfunded Actuarial Accrued Liability and dividing by anticipated payroll.

The payment of a present value financial obligation on an installment basis over a future number of years.

The employer's periodic required contributions to a defined benefit pension plan, calculated in accordance with the plan provisions, actuarial assumptions, actuarial cost method and other actuarial method prescribed by Governmental Accounting Standards No. 25 and No. 27.

Service credited under the system that was rendered before the date of the actuarial valuation.
Re-starting amortization of the UAAL by eliminating existing bases and starting with a single amortization base equal to the current UAAL.

The program for the amounts and timing of contributions to be made by plan members, employer, and other contributing entities (for example, state government contributions to a local government plan) to provide the benefits specified by a pension plan.

The amount to be amortized is divided into equal dollar amounts to be paid over a given number of years; part of each payment is interest and part is principal (similar to a mortgage payment on a building). Because payroll can be expected to increase as a result of inflation, level dollar payments generally represent a decreasing percentage of payroll; in dollars adjusted for inflation, the payments can be expected to decrease over time.

That portion of the present value of future benefits which is allocated to a valuation year by the Actuarial Cost Method. The normal cost is specific to the cost method used.

## SECTION VII - DEFINITIONS OF TECHNICAL TERMS

## Definitions of Technical Terms (continued)

## Plan Assets

Plan Members

Present Value of Future Benefits (PVFB)

Resources, usually in the form of stocks, bonds, and other classes of investments, that have been segregated and restricted in a trust, or equivalent arrangement, in which (a) employer contributions to the plan are irrevocable, (b) assets are dedicated to providing benefits to retirees and their beneficiaries, and (c) assets are legally protected from creditors of the employer(s) or plan administrator, for the payment of benefits in accordance with the terms of the plan.

The individuals covered by the terms of a pension plan. The plan membership generally includes employees in active service, terminated employees who have accumulated benefits but are not yet receiving them, and retired employees and beneficiaries currently receiving benefits.

Projected benefits estimated to be payable to plan members (retirees and beneficiaries, terminated employees entitled to benefits but not yet receiving them, and current active members upon retirement) as a result of their service through the valuation date and their expected future service. The actuarial present value of projected future benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment (taking into account mortality, turnover, probability of participating in plan retirement, etc.). Alternatively, it is the amount that would have to be invested on the valuation date so that the amount invested plus investment earnings will provide sufficient assets to pay the projected benefits when due.


[^0]:    ${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.

[^1]:    ${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.
    ${ }^{2}$ The contribution rates shown were developed on a funding basis only and do not reflect accounting requirements.
    ${ }^{3}$ The Approved Funding Rate shown is the aggregate rate for the State and Political Subdivisions. The funding rates determined by the June 30,2012 valuation become effective July 1, 2013 for the State rate and January 1, 2014 for the Political Subdivisions' rates. Approved Funding Rates before June 30, 2011 were based on smoothing rules that were repealed by the Board in December 2011.

[^2]:    ${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.
    ${ }^{2}$ The contribution rates shown were developed on a funding basis only and do not reflect accounting requirements.
    ${ }^{3}$ The Approved Funding Rate shown is the aggregate rate for Political Subdivisions. The funding rates determined by the June 30,2012 valuation become effective July 1,2013 for the State rate and January 1, 2014 for the Political Subdivisions' rates. Approved Funding Rates before June 30, 2011 were based on smoothing rules that were repealed by the Board in December 2011.

[^3]:    ${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary

[^4]:    ${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.

[^5]:    ${ }^{1}$ Retired members will be provided a 13th check by October 1, 2012 rather than a 1.0\% COLA on January 1, 2013.
    ${ }^{2}$ Assumption changes include the change in discount rate from $7.0 \%$ to $6.75 \%$, change in the interest rate on member ASA balances from $7.0 \%$ to $3.0 \%$, and change in mortality table from the 2008 IRS Static Mortality projected five (5) years with Scale AA to the 2013 IRS Static Mortality projected five (5) years with Scale AA.

[^6]:    1. Market Value of Assets, June 30, 2011
    2. Market Value of Assets, June 30, 2012
    12,461,355,909
    3. Expected Earnings/Expenses
    a. Expected Investment Earnings at 7.0\% on June 30, 2011 Market Value
    b. Receipts and Expected Investment Earnings at 7.0\%
    c. Disbursements and Expected Investment Expenses at 7.0\%
    4. Expected Assets, June 30, 2012: (1) + (3)(a) + (3)(b) - (3)(c)
    5. 2011-2012 Gain/(Loss): (2) - (4)
    6. Smoothing of Gain/(Loss)

    |  | Year | Gain/(Loss) |  | \% Unrecognized |
    | :---: | :---: | :---: | :---: | :---: |
    | a. | 2011-2012 | \$ | (894,429,870) | 75\% |
    | b. | 2010-2011 | \$ | 1,356,272,606 | 50\% |
    | c. | 2009-2010 | \$ | 592,858,223 | 25\% |

    7. Preliminary Actuarial Value of Assets, June 30, 2012: (2) - (6)(a) - (6)(b) - (6)(c)
    8. Corridor
    a. $120 \%$ of Market Value
    b. $80 \%$ of Market Value

    14,692,503,737
    9,795,002,491
    9. Actuarial Value of Assets, June 30, 2012
    10. Actuarial Value of Assets as a Percent of Market Value: (9) / (2)
    11. Actuarial Value of Assets Approximate Annual Rate of Investment Return

[^7]:    ${ }^{1}$ Since the State contribution rate becomes effective one year after the valuation date, the Annual Required Contribution Amount is estimated by assuming payroll will increase $4.0 \%$ per year and then applying the Annual Required Contribution Rate computed at the valuation date.
    ${ }^{2}$ The Approved Funding Rate is based on Annual Required Contribution rate, rounded up to the next tenth of a percent.

[^8]:    ${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.

[^9]:    ${ }^{1}$ Net of expenses.

[^10]:    ${ }^{1}$ Valuation results prior to June 30,2010 were calculated by the prior actuary.
    ${ }^{2}$ As requested by INPRS, one-third ( $1 / 3$ ) of the retired / disabled / beneficiary member liability, ASA account balances, and ASA annuities has been allocated to the State and the remaining two-thirds ( $2 / 3$ ) to the Political Subdivisions.

[^11]:    ${ }^{1}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.

[^12]:    ${ }^{1}$ Headcounts reflect the record counts used in the valuation, which may include duplicate records for members (e.g. members with multiple periods of service).
    Inactive deceased counts include 223 members with vested benefit

[^13]:    ${ }^{1}$ Headcounts reflect the record counts used in the valuation, which may include duplicate records for members (e.g. members with multiple periods of service).

[^14]:    ${ }^{1}$ Headcounts reflect the record counts used in the valuation, which may include duplicate records for members (e.g. members with multiple periods of service).
    ${ }^{2}$ Valuation results prior to June 30, 2010 were calculated by the prior actuary.

[^15]:    ${ }^{1}$ Headcounts reflect the record counts used in the valuation, which may include duplicate records for members (e.g. members with multiple periods of service).

[^16]:    ${ }^{1}$ Headcounts reflect the record counts used in the valuation, which may include duplicate records for members (e.g. members with multiple periods of service).

[^17]:    For some members average salary at retirement and years of credited service was not available. The average salary for each group excludes these members. Retired members with credited service information that is missing are counted in the "10-14" group.

