

**EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF
HAWAII**

REPORT TO BOARD OF TRUSTEES ON THE 89TH ANNUAL
ACTUARIAL VALUATION

FOR THE YEAR ENDING JUNE 30, 2014

January 16, 2015

Board of Trustees
Employees' Retirement System of
The State of Hawaii
City Financial Tower
201 Merchant St., Ste. 1400
Honolulu, HI 96813-2980

Dear Trustees:

SUBJECT: ACTUARIAL VALUATION AS OF JUNE 30, 2014

We certify that the information contained in the 2014 actuarial valuation report is accurate and fairly presents the actuarial position of the Employees' Retirement System of the State of Hawaii (ERS) as of June 30, 2014.

All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, the results presented comply with the requirements of the Hawaii statutes and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries. One or more of them are an Enrolled Actuary and/or a Member of the American Academy of Actuaries. All are experienced in performing valuations for large public retirement systems.

ACTUARIAL VALUATIONS

The primary purpose of the valuation report is to determine the adequacy of the current employer contribution rate through measuring the resulting funding period, to describe the current financial condition of ERS, and to analyze changes in ERS's condition.

Prior valuation reports provided information that ERS needed to comply with Governmental Accounting Standards Board (GASB) Statement No. 25. Although this statement no longer applies to the ERS, this report continues to provide the GASB No. 25 information this year so that the employers that participate in the ERS can develop their GASB No. 27 disclosures. ERS must now comply with the GASB Statement No. 67. Due to the increases in the amount of information that must be provided under this statement, the required disclosure information of GASB No. 67 will be provided in a separate report.

The valuation report also provides various summaries of the data.

Valuations are prepared annually, as of June 30th of each year, the last day of ERS's plan year and fiscal year.

FINANCING OBJECTIVES

Contribution rates are established by Law that, over time, are intended to remain level as a percent of payroll. The employee and employer contribution rates have been set by Law and are intended to provide for the normal cost plus the level percentage of payroll required to amortize the unfunded actuarial accrued liability (UAAL) over a period not in excess of 30 years.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

The 2011 Legislature made significant changes to the future employer contribution rates. The current 24.00% of pay contribution rate for Police and Fire employees will increase to 25.00% in FY2016, and the 16.50% of pay contribution rate for All Other Employees will increase to 17.00% in FY2016. The contribution rates are then expected to stay at those levels until the System is fully funded. The Legislature also made changes to the benefits and member contribution rates for employees hired after June 30, 2012. Because these changes result in significantly higher contributions towards the unfunded liability in the future than in the current year, we believe it is more appropriate to determine the funding period using an open group projection rather than a static mathematical formula, which assumes that all amortization payments in the future will be the same percentage of pay as in the current year.

Based on the future increases in the employer contribution rates and the changes to the benefits and member contributions of future employees, we have determined that the funding period for paying off the UAAL of the System (in aggregate) is 26 years. Because this period does not exceed 30 years, the financing objectives of ERS are currently being realized. (Hawaii Revised Statutes §88-122(e)(1) state that the employer contribution rates are subject to adjustment when the funding period is in excess of 30 years.)

The actuarial accrued liability, the unfunded actuarial accrued liability (UAAL), and the determination of the resulting funding period illustrate the progress toward the realization of financing objectives. The System's UAAL was expected to increase from the prior year based on the deferral of investment losses from prior valuations and the future increases in contributions not being effective for this fiscal year. In addition, the System had a liability experience loss which was caused by adverse experience compared to the assumptions. However, the losses were offset by investment gains due to the favorable investment performance during the fiscal year 2014. As a result, the UAAL grew less than expected and based on this actuarial valuation as of June 30, 2014, ERS's underfunded status as measured by the UAAL is now \$8.578 billion.

Because of the favorable investment performance in FY2014, the System is now deferring \$561 million in investment gains (compared with \$391 million deferred losses last year). If there are no significant investment losses or other actuarial losses over the next several years, the funded status of the System would be expected to increase.

BENEFIT PROVISIONS AND LEGISLATIVE CHANGES

This is the second valuation with members covered under the new benefit tier.

There have been no changes in the benefit provisions since the prior valuation. See Table 16 of this report for more details on the benefit provisions for members of the System.

ASSUMPTIONS AND METHODS

The actuarial assumptions used were adopted by the Board in December of 2010 based on the recommendations provided by an Experience Study performed by GRS.

There have been no changes to the assumptions or methods since the prior valuation. Further detail on the assumptions and methods may be found in Table 18 of this report.

In our opinion, the assumptions are internally consistent and are reasonably based on the actual experience of ERS.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations are intended to provide information for rational decision making.

DATA

Member data for retired, active, and inactive participants was supplied as of March 31, 2014, by ERS's staff. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. Asset information was supplied by ERS's staff.

RESPONSIBILITY FOR TABLES AND SCHEDULES

The actuary is responsible for the information with respect to years after 1999 in the Required Supplementary Information, the Schedule of Employer Contributions, and the Notes to Required Supplementary Information in the Financial Section of the ERS's Comprehensive Annual Financial Report (CAFR). Information with respect to years prior to 2000 was supplied by ERS.

Tables and schedules in the Actuarial Section of the CAFR were generally prepared directly by the Actuary. However, certain of these tables were prepared by ERS utilizing information from this report. When the tables were prepared by ERS from our report, they are so noted.

Board of Trustees

January 16, 2015

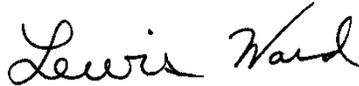
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The undersigned are independent actuaries and consultants. Mr. Newton is an Enrolled Actuary, a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries. Finally, all of the undersigned are experienced in performing valuations for large public retirement systems.

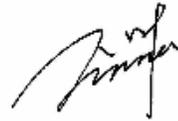
Sincerely,



Joseph P. Newton, FSA, EA
Senior Consultant & Actuary



Lewis Ward
Consultant



Linna Ye, ASA, MAAA
Actuary

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

The following table summarizes the key results of the June 30, 2014 actuarial valuation of the Employees' Retirement System of the State of Hawaii (ERS).

Item	2014	2013
Membership		
• Number of		
- Active members	67,206	66,226
- Retirees and beneficiaries	43,087	41,812
- Inactive, vested	8,105	7,312
- Total	<u>118,398</u>	<u>115,350</u>
• Covered payroll for active members	\$3,871.0 million	\$3,720.8 million
• Actual benefit payments and refunds	\$1,130.9 million	\$1,067.8 million
Assets		
• Actuarial (smoothed) value	\$13,641.8 million	\$12,748.8 million
• Market value	\$14,203.0 million	\$12,357.8 million
• Return on actuarial value	9.2%	6.7%
• Return on market value	17.8%	12.3%
• Employer contributions during fiscal year	\$653,127,697	\$581,447,212
• External cash flow %	(2.0%)	(2.5%)
Actuarial Information		
• Total normal cost % (employee + employer)	10.96%	11.02%
• Unfunded actuarial accrued liability (UAAL)	\$8,578.3 million	\$8,494.9 million
• Funded ratio (based on smoothed assets)	61.4%	60.0%
• Funded ratio (based on market assets)	63.9%	58.2%
• Funding period (years)*	26.0	28.0
• Employer contribution rate % of projected payroll** For FY beginning July 1	17.28%	16.76%

* Funding Period based on actuarial value of assets, scheduled increases in employer contribution rates, and an open group projection reflecting changes in benefits and future member contribution rates.

** Weighted average of 24.0% Contribution Rate for Police and Firefighters and 16.5% Contribution Rate for All Other Employees for FY 2015, 23.0% and 16% respectively for FY 2014.

SECTION B

INTRODUCTION

Introduction

The results of the June 30, 2014 actuarial valuation of ERS are presented in this report.

The primary purpose of the valuation report is to determine the adequacy of the current employer contribution rates through measuring the resulting funding period, to describe the current financial condition of ERS, and to analyze changes in ERS's condition.

Section C discusses the funded status of ERS. Section D analyzes the change in the UAAL. Section G discusses the disclosure requirements of GASB No. 25 and GASB No. 67.

Sections E, F, H, and I discuss background information used in the preparation of this report-- benefit provisions, actuarial assumptions and methods, financial information, and membership data. Section K contains the actuarial certification.

All the tables referenced by the other sections appear in Section L.

SECTION C
FUNDED STATUS

Funded Status

Table 1 shows the development of the Plan's liabilities and funded status for the current year and compares it with those of the prior year.

The calculation of the funded status involves the following steps and includes the following comments:

- The actuarial present value of future benefits is determined for the present members, including retired members, beneficiaries, inactive members, and active members. This amounts to \$25.7 billion. Table 2 shows the development of this total for the current year and the prior year.
- The individual entry age normal funding method is used to allocate the actuarial present value of future benefits between that portion due for the current year (the normal cost), prior years (the actuarial accrued liability) and future years (the present value of future normal cost). Under the individual entry age normal cost method, the current and future normal costs are determined as a level percentage of payroll. Table 3 shows an analysis of the normal cost for the current year and the prior year. The amount needed to fund the current and future normal costs is 19.47% of pay for Police and Fire employees and 9.92% for All Other employees. It includes all of the employees' contribution (if any) and the employers' normal cost rate.
- The impact of the new tier of benefits can be seen in the decline of the normal cost for Police and Fire Employees from last year to this year as shown on Table 3 Item 1.f. The impact is not as apparent in the All Other Employees numbers because some of the new hires in this plan are replacing members of the Noncontributory Plan which has a lower normal cost. However, the impact on the new tier on the net employer normal cost can be seen by comparing Item 3 of Table 3 from last year to this year.
- A part of the normal cost is paid by the employee contributions of 12.30% of pay for Police and Firefighters, leaving 7.17% of pay to be funded by the employers. Thus the current year's employer normal cost for Police and Firefighters is deemed to be 7.17% of the valuation payroll. As for the All Other Employees group, the average weighted effective employee contribution rate is 4.58% of pay, leaving 5.34% of pay to be funded by the employers. This is shown in Line 3 of Table 1.

- The UAAL is \$8.578 billion for 2014, an increase from \$8.495 billion in 2013. As indicated in Table 1, the UAAL equals the difference between the total actuarial accrued liability (Item 7) and current actuarial assets (Item 8).
- In determining the number of years that will be required to amortize the UAAL, an assumption is made concerning future growth of the ERS covered payroll. Payroll can grow from intrinsic growth in the pay of individual members and it can also grow due to active membership growth. In determining the funding period of the System, we have assumed that the number of active members will remain constant in our open group projection.
- As shown in Item 10 of Table 1 and on Table 9c, the period to fund the UAAL is 29 years for Police and Fire and 26 years for the All Other Employees group. The aggregate funding period for ERS is 26 years. Since the aggregate funding period based on the contribution rates does not exceed 30 years, the rates are adequate to meet the requirements of Hawaii Revised Statutes §88-122(e)(1).

As of the valuation date, ERS has a funded ratio of 61.4%, based on the actuarial value of assets.

Due to the significant changes in the future contribution rates and benefits for employees hired after June 30, 2012, the ERS funding policy uses an open group projection for determining how many years it will take to eliminate the unfunded liabilities of the System. As shown on Table 9c, the System is expected to be fully funded in 2040 which is 26 years from now. Therefore, the funding period is equal to 26 years. The open group projection assumes that the number of active members will remain constant and that there will be no actuarial gains or losses on liabilities or investments.

SECTION D

ANALYSIS OF CHANGES

Analysis of Changes

Section C has noted that the unfunded actuarial accrued liability (UAAL) is \$8.578 billion as of June 30, 2014 compared to the \$8.495 billion UAAL for 2013.

Table 7 develops the estimated yield for the year based on two measures of asset values. Table 9b takes the information contained in Table 6 and develops the expected value of actuarial assets for this valuation, based on the investment return assumption of 7.75%.

As shown in Item 5 of Table 9b, the expected value of actuarial assets as of June 30, 2014 is \$13.455 billion. As developed in Table 6, the actual value of actuarial assets as of the valuation date is \$13.642 billion (as repeated in Item 6 of Table 9b). Thus the asset gain for the year is the difference between the actual value and the expected value, or \$187.1 million (as shown in Item 7). This asset gain for the year is a direct reflection of the estimated yield for the year based on the value of actuarial assets, namely 9.23% (as shown in Item B4 of Table 7) being more than the assumed rate of return.

The actuarial asset valuation method is intended to smooth out year-to-year fluctuations in the market return. The expected actuarial value of assets is calculated and compared to the actual market value of assets. One fourth of the difference between these numbers is then recognized and added to the expected actuarial value of assets to get the final actuarial value of assets. This method has the advantage of more quickly converging towards the market value in years when the returns go in the opposite direction of the prior years, as was the case this year. Part of the excess investment earnings from FY 2014 will be recognized over future actuarial valuations.

After an unfavorable year in FY 2012, the investment markets had a good year in FY 2013 and an even better year in FY 2014 with a return of 17.76% on the market value of assets. The rate of return for the actuarial value was 9.23%, which is less than the market return due to the smoothing methodology used in the determination of the actuarial value of assets. The market value of assets exceeds the actuarial value of assets by \$561 million, so there are \$561 million in deferred investment gains still to be recognized in the actuarial value of assets. Please note that as of the last valuation there was \$391 million in deferred losses, all deferred investment losses were recognized (or offset by investment gains) in this valuation.

Table 9a indicates that the total actuarial experience gain for the 2013/2014 plan year was \$125.0 million (Item 7). As noted above, the actuarial investment gain was equal to \$187.1 million. This means that there was a liability loss during the year equal to \$62.1 million. This experience loss is primarily due to longer life expectancy of retirees and beneficiaries.

Table 9c shows the current year's valuation results plus a 30-year open group projection of the System's assets and liabilities. As discussed previously, this projection assumes no actuarial gains or losses in the actuarial liabilities or the actuarial value of assets. In addition, the projection reflects the changes made to the future employer contribution rates as well as the changes to the

benefits and member contribution rates of employees hired after June 30, 2012. As may be seen by examining this table, unfunded liability of the System (Column 7) is expected to be eliminated in fiscal year 2040, which is 26 years from this valuation. Therefore, for the purpose of satisfying Hawaii Revised Statutes §88-122(e)(1) the funding period is considered to be 26 years.

SECTION E

ERS ASSETS

ERS Assets

Table 4 presents a summary of the market value of assets held by the ERS. About 79% of the total assets available for benefits are held in equities (including alternative investments) and real estate compared to about 76% last year. Table 5 shows a reconciliation of the assets from the beginning of the prior year to the valuation date.

Table 6 shows the development of the Actuarial Value of Assets (AVA). An actuarial value is used in order to dampen some of the year-to-year fluctuations which would occur if the market value were used instead. The method used, determines the actuarial value of assets as the expected actuarial value of assets plus 25% of the difference between the actual market value of assets and the expected actuarial value of assets.

Table 7 shows an estimate of the ERS's dollar-weighted rate of return for the year. This is shown on (i) the market value of assets (reflecting all realized and unrealized gains and losses), and (ii) the actuarial value of assets. While the dollar-weighted market return this year was 17.76%, the return on the actuarial value was 9.23%. The difference between these is due to the smoothing effect of the AVA valuation method.

Table 9b determines the asset gain or loss for the year, based on the difference between the actual fund return and the assumed rate of 7.75%.

Finally, Table 13 shows a history of cash flows for the trust.

SECTION F

BENEFIT PROVISIONS

Benefit Provisions

Table 16 summarizes the provisions of ERS used in this valuation. Table 17 is a historical record of prior legislative changes starting with changes effective in 1999. There were significant changes made by the 2011 Legislature to the benefit provisions of the System for employees hired after June 30, 2012. Because the Board has chosen to use the Individual Entry Age Normal Cost method, the normal cost and the growth of the accrued liabilities will be slowly impacted by the changes in the benefit provisions, as members under the new tier are hired to replace members who are covered under the older tier of benefits.

There have been no changes to the benefit provisions since the last valuation that had an actuarial impact on the valuation.

Legislation was also enacted in 2011 that impacted the employer contribution rates beginning in fiscal year 2013. The employer contribution rates for Police and Fire employees will increase according to the following schedule: 22.00% in FY2013, 23.00% in FY 2014, and 24.00% in FY 2015, and 25.00% in FY 2016 and beyond. The employer contribution rates for All Other Employees will increase according to the following schedule: 15.50% in FY2013, 16.00% in FY 2014, and 16.50% in FY 2015, and 17.00% in FY 2016 and beyond.

This valuation reflects benefits promised to members by the ERS's statutes. There are no ancillary benefits - retirement type benefits not required by the ERS's statutes but which might be deemed an ERS liability if continued beyond the availability of funding by the current funding source.

Act 179/2004 was adopted during FY2003/2004 and established the new Hybrid Plan that became effective on July 1, 2006. Current participants had the choice to elect to move to the new plan or stay in the current plan. There were 26,228 plan members who elected to so transfer. The Hybrid plan membership has since grown to more than 43,000 members.

SECTION G

GASB DISCLOSURE

GASB Disclosure

For fiscal years prior to 2014, Governmental Accounting Standards Board (GASB) Statement No. 25 governed reporting for ERS. Effective with fiscal year 2014, GASB No. 67 replaced GASB No. 25. However, we have included the GASB No. 25 information for fiscal year 2014 so that the employers covered by ERS can pull any information they need for their 2014 fiscal year reporting, since the new reporting rules for employers (GASB No. 68) is not effective until FY2015. The disclosure information required under GASB No. 67 will be provided in a separate report.

This report includes Tables 11a, 11b, and 11c--showing information determined under GASB No. 25. Table 11a shows a history of funding progress (a comparison of actuarial assets with the actuarial accrued liability and a comparison of UAAL with compensation).

Table 11b shows the Schedule of Employer Contributions as computed under GASB No. 25, and it shows what percent of this amount was actually received. We have determined the GASB No. 25 Annual Required Contribution (ARC) using a 30-year amortization period. The ARC for fiscal year 2014 is 18.46% of pay for all employees (if determined separately, the ARC is 25.36% for Police and Fire and 17.61% for All Other Employees). The ARC has been determined based on the benefits of the current members only.

Table 11c shows other information that must be included in the notes section of the financial report. The auditor's notes should disclose the following events which may affect the comparability of the trend information shown in Tables 11a and 11b: the change in assumptions effective as of June 30, 2006, the new salary scale assumption effective June 30, 2007, the new assumptions effective June 30, 2011.

SECTION H

ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as rates of salary increase, probabilities of retirement, termination, death and disability, and an investment return assumption. The ERS's Board adopts the assumptions used, taking into account the actuary's recommendations.

In addition to the actuarial assumptions, the actuary also makes use of an actuarial funding method to allocate costs to particular years. In common with most public sector plans, ERS uses the entry age normal method (individual normal cost). This method produces a relatively level pattern of funding for individual employees over time. We believe this method is appropriate for ERS.

There have been no changes in the assumptions or methods since the prior valuation.

Please see Table 18 for a complete description of the actuarial assumptions and methods.

SECTION I

MEMBERSHIP DATA

Membership Data

Membership data was provided in electronic files, via a secured file transfer protocol, by the staff. Data for active members include sex, birthdate, service, pay rate as of March 2014, employer entity and accumulated employee contributions. Data for inactive, nonretired members was similar, but also includes the members' unreduced benefit. For retired members, data includes status (service retiree, disabled retiree or beneficiary), sex, birthdate, pension amount, pension COLA amount, form of payment, beneficiary sex and birthdate if applicable, and date of retirement.

While not verifying the correctness of the data at the source, we performed various tests to ensure the internal consistency of the data and its overall reasonableness. Membership statistics are summarized in Table 12a. Table 12b summarizes certain active member data, and the age/service distribution of active members is shown in Table 19. Tables 30-43 show various distributions of retirees.

Since last year, the number of active members increased by 980 members from 66,226 to 67,206. These 67,206 active members are distributed as follows:

Category	Number	% of Total
(1)	(2)	(3)
Police & Fire	5,006	7.4%
Contributory	1,275	1.9%
Noncontributory	17,061	25.4%
Hybrid Plan	<u>43,864</u>	<u>65.3%</u>
Total	67,206	100.00%

Covered payroll (which is the annualized pay for all active members on the census date) increased 4.0% since last year. ERS also provided the actual aggregate payroll for fiscal year 2014 on which contributions were received (this includes payroll for members who terminated and retired during the year). This aggregate payroll amount is adjusted by the payroll growth rate and the average growth in active membership during the year to produce the *projected FY 2015 payroll for contribution purposes*, as shown in Item 1 of Table 1.

Average age of the active members increased from 47.7 years to 47.8 years, while average service remained at 13.5 years.

SECTION J

SUMMARY AND CLOSING COMMENTS

Summary and Closing Comments

To summarize the results of the actuarial valuation of the Employees' Retirement System as of June 30, 2014, it is our opinion that if all assumptions are met going forward, the present assets plus future required contributions will be sufficient to provide the benefits specified in the law. The large investment gains have resulted in a decrease in the estimated time to eliminate the unfunded liability of the System from 28 years to 26 years. The funding period is less than the 30-year maximum period specified by Hawaii Revised Statute 88-122(e)(1).

The System is now deferring \$561 million in investment gains. In the absence of offsetting losses the funded position of the plan will increase faster than expected over the next several valuations as the deferred investment gains are recognized.

There are still concerns for the future. The key ones are as follow:

- The funded ratio based on the market value of assets is still only 63.9%.
- The current economic condition in the State. The overall levels of membership and payroll have direct impact on amount of contributions into the System. If payroll does not grow as assumed, then the contribution dollar amounts will not grow as anticipated.
- Nationally, recent trends in mortality improvement are substantially greater than in the prior decades. This trend may also be occurring in Hawaii. This may necessitate a change in the mortality assumption at the next experience study, that will be performed for the 5-year period ending June 30, 2015.

SECTION K

ACTUARIAL CERTIFICATION STATEMENT

Actuarial Certification Statement

	Police and Firefighters June 30, 2014 (1)	All Other Employees June 30, 2014 (2)	All Employees June 30, 2014 (3)
1. Gross normal cost as a percentage of pay	19.47%	9.92%	10.96%
2. Present value of future benefits			
a. Active employees	\$ 2,545,508,130	\$ 11,061,442,472	\$ 13,606,950,602
b. Inactive members	30,640,206	413,452,001	444,092,207
c. Pensioners and beneficiaries	2,009,448,307	9,663,539,439	11,672,987,746
d. Total	<u>\$ 4,585,596,643</u>	<u>\$ 21,138,433,912</u>	<u>\$ 25,724,030,555</u>
3. Present value of future employee and employer contributions			
a. Present value of future normal costs	\$ 750,656,299	\$ 2,753,276,709	\$ 3,503,933,008
b. Present value of future employee contributions	<u>480,241,601</u>	<u>1,320,311,535</u>	<u>1,800,553,136</u>
c. Present value of future employer normal costs (Item 3a - Item 3b)	\$ 270,414,698	\$ 1,432,965,174	\$ 1,703,379,872
4. Actuarial accrued liability (Item 2d - Item 3a)	\$ 3,834,940,344	\$ 18,385,157,203	\$ 22,220,097,547
5. Actuarial value of assets			
a. Annuity Savings Fund	\$ 817,847,128	\$ 1,289,335,500	\$ 2,107,182,628
b. Pension Accumulation Fund	<u>1,767,115,986</u>	<u>9,767,456,686</u>	<u>11,534,572,672</u>
c. Total	<u>\$ 2,584,963,114</u>	<u>\$ 11,056,792,186</u>	<u>\$ 13,641,755,300</u>
6. Unfunded actuarial accrued liability	\$ 1,249,977,230	\$ 7,328,365,017	\$ 8,578,342,247
7. Adequacy of contribution rates			
a. Statutory Contribution Rate for Fiscal Year Fiscal Year 2015	24.00%	16.50%	17.28%
b. Funding Period in years as of June 30, 2014*	29	26	26

* The Funding Period is calculated using an open group projection which reflects the impact of both the new employer contribution rates schedule and the benefits and member contribution rates for employees hired after June 30, 2012.

Actuarial Certification Statement

The actuarial valuation as of June 30, 2014 is based on the provisions of Chapter 88 of the Hawaii Revised Statutes, as amended. The assumptions used in the cost calculations were those adopted by the Board of Trustees on December 20, 2010 based on the actuary's actuarial experience investigation report covering the five-year period July 1, 2005 – June 30, 2010. The investment return assumption is formally adopted by the Board effective with the June 30, 2012 actuarial valuation (this assumption was previously prescribed by statute). The actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures.

In our opinion, the contributions required to meet ERS's liabilities were calculated in accordance with the provisions of Chapter 88 regarding the funding of the Employees' Retirement System on an actuarial reserve basis.

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned is an independent actuary and consultant. Mr. Newton is an Enrolled Actuary, a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries. Finally, he is experienced in performing valuations for large public retirement systems.



Joseph P. Newton, FSA, EA, MAAA
Senior Consultant & Actuary

SECTION L

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Development of Employer Cost

	Police and Firefighters June 30, 2014 (1)	All Other Employees June 30, 2014 (2)	All Employees June 30, 2014 (3)
1. Projected FY 2015 payroll for contribution purposes	\$ 414,605,839	\$ 3,577,034,439	\$ 3,991,640,278
2. Gross normal cost (Table 3)	19.47%	9.92%	10.96%
3. Employer normal cost rate (Table 3)	7.17%	5.34%	5.54%
4. Present value future benefits (Table 2)	\$ 4,585,596,643	\$ 21,138,433,912	\$ 25,724,030,555
5. Present value future employer normal cost	\$ 270,414,698	\$ 1,432,965,174	\$ 1,703,379,872
6. Present value future employee contributions	\$ 480,241,601	\$ 1,320,311,535	\$ 1,800,553,136
7. Actuarial accrued liability (Item 4 - Item 5 - Item 6)	\$ 3,834,940,344	\$ 18,385,157,203	\$ 22,220,097,547
8. Actuarial value of assets	\$ 2,584,963,114	\$ 11,056,792,186	\$ 13,641,755,300
9. Unfunded actuarial accrued liability (UAAL) (Item 7 - Item 8)	\$ 1,249,977,230	\$ 7,328,365,017	\$ 8,578,342,247
10. Funding Period*	29	26	26

	Police and Firefighters June 30, 2013 (1)	All Other Employees June 30, 2013 (2)	All Employees June 30, 2013 (3)
1. Payroll (adjusted for one year's pay increase)	\$ 425,955,308	\$ 3,480,715,308	\$ 3,906,670,616
2. Gross normal cost (Table 3)	19.84%	9.91%	11.02%
3. Employer normal cost rate (Table 3)	7.60%	5.53%	5.76%
4. Present value future benefits (Table 2)	\$ 4,446,972,755	\$ 20,213,636,945	\$ 24,660,609,700
5. Present value future employer normal cost	\$ 288,878,692	\$ 1,448,159,266	\$ 1,737,037,958
6. Present value future employee contributions	\$ 475,079,954	\$ 1,204,747,411	\$ 1,679,827,365
7. Actuarial accrued liability (Item 4 - Item 5 - Item 6)	\$ 3,683,014,109	\$ 17,560,730,268	\$ 21,243,744,377
8. Actuarial value of assets	\$ 2,387,843,681	\$ 10,360,984,429	\$ 12,748,828,110
9. Unfunded actuarial accrued liability (UAAL) (Item 7 - Item 8)	\$ 1,295,170,428	\$ 7,199,745,839	\$ 8,494,916,267
10. Funding Period*	30	28	28

* The Funding Period is calculated using an open group projection which reflects the impact of both the new employer contribution rates schedule and the benefits and member contribution rates for employees hired after June 30, 2012.

Actuarial Present Value of Future Benefits

	Police and Firefighters June 30, 2014 (1)	All Other Employees June 30, 2014 (2)	All Employees June 30, 2014 (3)
1. Active members			
a. Service retirement benefits	\$ 2,414,882,084	\$ 10,014,902,083	\$ 12,429,784,167
b. Termination Benefits	80,450,842	705,704,501	786,155,343
c. Survivor benefits	38,550,200	246,300,570	284,850,770
d. Disability retirement benefits	11,625,004	94,535,318	106,160,322
e. Total	<u>\$ 2,545,508,130</u>	<u>\$ 11,061,442,472</u>	<u>\$ 13,606,950,602</u>
2. Retired members			
a. Service retirement	\$ 1,889,621,754	\$ 9,032,484,732	\$ 10,922,106,486
b. Disability retirement	29,733,132	171,580,522	201,313,654
c. Beneficiaries	90,093,421	459,474,185	549,567,606
d. Total	<u>\$ 2,009,448,307</u>	<u>\$ 9,663,539,439</u>	<u>\$ 11,672,987,746</u>
3. Inactive members			
a. Vested terminations	\$ 28,085,050	\$ 369,301,164	\$ 397,386,214
b. Nonvested terminations	2,555,156	44,150,837	46,705,993
c. Total	<u>\$ 30,640,206</u>	<u>\$ 413,452,001</u>	<u>\$ 444,092,207</u>
4. Total actuarial present value of future benefits	<u>\$ 4,585,596,643</u>	<u>\$ 21,138,433,912</u>	<u>\$ 25,724,030,555</u>

	Police and Firefighters June 30, 2013 (1)	All Other Employees June 30, 2013 (2)	All Employees June 30, 2013 (3)
1. Active members			
a. Service retirement benefits	\$ 2,393,112,014	\$ 9,560,436,194	\$ 11,953,548,208
b. Termination Benefits	80,314,208	669,557,420	749,871,628
c. Survivor benefits	38,096,802	233,658,581	271,755,383
d. Disability retirement benefits	11,381,658	90,543,278	101,924,936
e. Total	<u>\$ 2,522,904,682</u>	<u>\$ 10,554,195,473</u>	<u>\$ 13,077,100,155</u>
2. Retired members			
a. Service retirement	\$ 1,791,126,664	\$ 8,729,793,532	\$ 10,520,920,196
b. Disability retirement	29,248,957	163,528,639	192,777,596
c. Beneficiaries	73,580,138	395,257,117	468,837,255
d. Total	<u>\$ 1,893,955,759</u>	<u>\$ 9,288,579,288</u>	<u>\$ 11,182,535,047</u>
3. Inactive members			
a. Vested terminations	\$ 27,759,262	\$ 336,765,219	\$ 364,524,481
b. Nonvested terminations	2,353,052	34,096,965	36,450,017
c. Total	<u>\$ 30,112,314</u>	<u>\$ 370,862,184</u>	<u>\$ 400,974,498</u>
4. Total actuarial present value of future benefits	<u>\$ 4,446,972,755</u>	<u>\$ 20,213,636,945</u>	<u>\$ 24,660,609,700</u>

Analysis of Normal Cost

	Police and Firefighters June 30, 2014 <u> </u> (1)	All Other Employees June 30, 2014 <u> </u> (2)	All Employees June 30, 2014 <u> </u> (3)
1. Normal cost as a percent of pay			
a. Service retirement benefits	16.66%	7.43%	8.43%
b. Deferred termination benefits	0.78%	0.67%	0.68%
c. Refunds	1.39%	1.36%	1.37%
d. Disability retirement benefits	0.17%	0.16%	0.16%
e. Survivor benefits	0.47%	0.30%	0.32%
f. Total	<u>19.47%</u>	<u>9.92%</u>	<u>10.96%</u>
2. Employee contribution rate	12.30%	4.58%	5.42%
3. Effective employer normal cost rate (Item 1f - Item 2)	7.17%	5.34%	5.54%

	Police and Firefighters June 30, 2013 <u> </u> (1)	All Other Employees June 30, 2013 <u> </u> (2)	All Employees June 30, 2013 <u> </u> (3)
1. Normal cost as a percent of pay			
a. Service retirement benefits	17.02%	7.45%	8.52%
b. Deferred termination benefits	0.80%	0.70%	0.71%
c. Refunds	1.37%	1.31%	1.32%
d. Disability retirement benefits	0.17%	0.16%	0.16%
e. Survivor benefits	0.48%	0.29%	0.31%
f. Total	<u>19.84%</u>	<u>9.91%</u>	<u>11.02%</u>
2. Employee contribution rate	12.24%	4.38%	5.26%
3. Effective employer normal cost rate (Item 1f - Item 2)	7.60%	5.53%	5.76%

Statement of Net Position

Item	Valuation as of	
	June 30, 2014	June 30, 2013
1. Cash and cash equivalents	\$ 421,279,485	\$ 375,751,204
2. Receivables:		
a. Accounts receivable and others	\$ 8,509,083	\$ 23,021,831
b. Investment sale proceeds	77,605,229	417,454,112
c. Accrued income	42,264,207	41,322,029
d. Employer contributions	55,910,549	27,287,944
e. Member contributions	5,464,431	4,684,532
f. Subtotal	<u>\$ 189,753,499</u>	<u>\$ 513,770,448</u>
3. Investments		
a. Equity securities	\$ 9,450,253,187	\$ 7,801,688,190
b. Fixed income securities	2,669,398,695	2,630,703,273
c. Real estate investments	1,192,580,996	1,242,936,282
d. Real estate mortgages	-	-
e. Alternative investments	751,113,517	614,940,544
f. Subtotal	<u>\$ 14,063,346,395</u>	<u>\$ 12,290,268,289</u>
4. Other		
a. Invested securities lending collateral	\$ 1,233,104,953	\$ -
b. Equipment at cost, net of depreciation	10,104,068	9,374,587
c. Other assets	-	-
d. Subtotal	<u>\$ 1,243,209,021</u>	<u>\$ 9,374,587</u>
5. Total assets	\$ 15,917,588,400	\$ 13,189,164,528
6. Liabilities		
a. Bank overdraft	\$ -	\$ -
b. Accounts payable	48,127,972	55,717,299
c. Investment commitments payable	182,232,054	493,615,557
d. Due to employers	-	-
e. Securities lending collateral	1,233,104,953	-
f. Notes payable	251,108,118	282,006,046
g. Total liabilities	<u>\$ 1,714,573,097</u>	<u>\$ 831,338,902</u>
7. Total market value of assets available for benefits (Item 5 - Item 6g)	\$ 14,203,015,303	\$ 12,357,825,626

Statement of Changes in Net Position

	Year Ending	
	June 30, 2014	June 30, 2013
1. a. Value of assets at beginning of year	\$ 12,357,825,626	\$11,285,929,822
b. Adjustment due to post valuation changes in CAFR assets	<u>(45,997,676)</u>	<u>2,111,644</u>
c. Adjusted value of assets at beginning of year	\$ 12,311,827,950	\$11,288,041,466
2. Revenue for the year		
a. Contributions		
i. Member contributions	\$ 206,127,337	\$ 185,837,186
ii. Employer contributions	<u>653,127,697</u>	<u>581,447,212</u>
iii. Total	\$ 859,255,034	\$ 767,284,398
b. Income		
i. Interest, dividends, and other income	\$ 407,762,710	\$ 327,857,580
ii. Investment expenses	<u>(34,096,053)</u>	<u>(37,088,469)</u>
iii. Net	\$ 373,666,657	\$ 290,769,111
c. Net realized and unrealized gains (loss)	<u>\$ 1,801,813,303</u>	<u>\$ 1,091,773,487</u>
d. Net income (loss)	\$ 2,175,479,960	\$ 1,382,542,598
e. Total revenue	\$ 3,034,734,994	\$ 2,149,826,996
3. Expenditures for the year		
a. Refunds	\$ 8,475,969	\$ 7,204,411
b. Benefit payments	1,122,445,642	1,060,561,148
c. Administrative and miscellaneous expenses	<u>12,626,030</u>	<u>12,277,277</u>
d. Total expenditures	\$ 1,143,547,641	\$ 1,080,042,836
4. Increase (decrease) in net assets (Item 2e - Item 3d)	\$ 1,891,187,353	\$ 1,069,784,160
5. Value of assets at end of year (Item 1c + Item 4)	\$ 14,203,015,303	\$12,357,825,626

Development of Actuarial Value of Assets

	Year Ending June 30, 2014	Year Ending June 30, 2013
1. Actuarial value of assets, beginning of year	\$ 12,748,828,110	\$ 12,242,493,808
2. Net new investments		
a. Contributions	\$ 859,255,034	\$ 767,284,398
b. Benefits paid	(1,122,445,642)	(1,060,561,148)
c. Refunds	(8,475,969)	(7,204,411)
d. Subtotal	(271,666,577)	(300,481,161)
3. Market value of assets at end of year	\$ 14,203,015,303	\$ 12,357,825,626
4. Expected return on actuarial value of assets	\$ 977,507,099	\$ 937,149,625
5. Expected actuarial value of assets, end of year	\$ 13,454,668,632	\$ 12,879,162,272
6. Excess/(shortfall) return (Item 3-Item 5)	\$ 748,346,671	\$ (521,336,646)
7. Excess/(shortfall) recognized (25% of Item 6)	\$ 187,086,668	\$ (130,334,162)
8. Actuarial value of assets as of June 30, 2014 (Item 5 + Item 7)	\$ 13,641,755,300	\$ 12,748,828,110
9. Ratio of actuarial value to market value	96.0%	103.2%
10. Remaining deferred Excess/(shortfall) (Item 6 - Item 7)	\$ 561,260,003	\$ (391,002,484)

Estimation of Yields

	June 30, 2014 (1)	June 30, 2013 (2)
A. Market value yield		
1. Beginning of year market assets	\$ 12,311,827,950	\$ 11,288,041,466
2. Investment income		
a. Change in assets (Item 3 - Item 1)	\$ 1,891,187,353	\$ 1,069,784,160
b. Cash Flow (excluding expenses)	<u>(271,666,577)</u>	<u>(300,481,161)</u>
c. Total investment income based on market value (Item 2a less Item 2b)	\$ 2,162,853,930	\$ 1,370,265,321
3. End of year market assets	\$ 14,203,015,303	\$ 12,357,825,626
4. Estimated dollar weighted market value yield (net of investment and administrative expenses)	17.76%	12.30%
B. Actuarial value yield		
1. Beginning of year actuarial assets	\$ 12,748,828,110	\$ 12,242,493,808
2. Investment income (based on asset valuation method)		
a. Change in assets (Item 3 - Item 1)	\$ 892,927,190	\$ 506,334,302
b. Cash Flow	<u>(271,666,577)</u>	<u>(300,481,161)</u>
c. Total investment income based on market value (Item 2a less Item 2b)	\$ 1,164,593,767	\$ 806,815,463
3. End of year actuarial assets	\$ 13,641,755,300	\$ 12,748,828,110
4. Estimated actuarial value yield (net of investment and administrative expenses)	9.23%	6.67%

Allocation of Cash and Investments

	<u>June 30, 2014</u>	<u>June 30, 2013</u>
	(1)	(2)
1. Cash and short-term equivalents	2.9%	3.0%
2. Fixed income securities	18.4%	20.8%
3. Equity securities	65.3%	61.5%
4. Real estate	8.2%	9.8%
5. Other	<u>5.2%</u>	<u>4.9%</u>
6. Total investments	100.0%	100.0%

Total Experience Gain or Loss

Item	Police and Firefighters	All Other Employees	All Employees
(1)	(2)	(3)	(4)
A. Calculation of total actuarial gain or loss			
1. Unfunded actuarial accrued liability (UAAL), as of June 30, 2013	\$ 1,295,170,428	\$ 7,199,745,839	\$ 8,494,916,267
2. Normal cost for the year (employer and employee)	\$ 79,806,553	\$ 346,288,316	\$ 426,094,869
3. Less: contributions and assessments for the year	\$ (147,873,311)	\$ (711,381,723)	\$ (859,255,034)
4. Interest at 7.75 %			
a. On UAAL	\$ 100,375,708	\$ 557,980,303	\$ 658,356,011
b. On normal cost	3,092,504	13,418,672	16,511,176
c. On contributions	(5,730,091)	(27,566,042)	(33,296,133)
d. Total	\$ 97,738,121	\$ 543,832,933	\$ 641,571,054
5. Expected UAAL as of June 30, 2014 (Sum of Items 1 - 4)	\$ 1,324,841,791	\$ 7,378,485,365	\$ 8,703,327,156
6. Actual UAAL as of June 30, 2014	\$ 1,249,977,230	\$ 7,328,365,017	\$ 8,578,342,247
7. Total gain (loss) for the year (Item 5 - Item 6)	\$ 74,864,561	\$ 50,120,348	\$ 124,984,909
B. Source of gains and losses			
8. Asset gain (loss) for the year (Table 9b)	\$ 35,450,873	\$ 151,635,795	\$ 187,086,668
9. Gain (loss) due to change in actuarial assumptions	-	-	-
10. Gain (loss) due to change in actuarial method	-	-	-
11. Other liability gain (loss)	39,413,688	(101,515,447)	(62,101,759)
12. Change in benefit provisions	-	-	-
13. Total gain (loss) for the year	\$ 74,864,561	\$ 50,120,348	\$ 124,984,909

Investment Experience Gain or Loss

Item (1)	June 30, 2014 (2)	June 30, 2013 (3)
1. Actuarial assets, beginning of year	\$ 12,748,828,110	\$ 12,242,493,808
2. Total contributions during year	\$ 859,255,034	\$ 767,284,398
3. Benefits and refunds paid	\$ (1,130,921,611)	\$ (1,067,765,559)
4. Assumed net investment income at 7.75%		
a. Beginning of year assets	\$ 988,034,178	\$ 948,793,270
b. Contributions	33,296,133	29,732,270
c. Benefits and refunds paid	(43,823,212)	(41,375,915)
d. Total	\$ 977,507,099	\$ 937,149,625
5. Expected actuarial assets, end of year (Sum of items 1 through 4)	\$ 13,454,668,632	\$ 12,879,162,272
6. Actual actuarial assets, end of year	\$ 13,641,755,300	\$ 12,748,828,110
7. Asset gain (loss) for year (Item 6 - Item 5)	\$ 187,086,668	\$ (130,334,162)
8. Asset gain (loss) as a percent of actuarial value of assets, end of year (Item 7 / Item 6)	1.37%	(1.02%)

Projection Results Based on June 30, 2014 Actuarial Valuation

Valuation as of June 30,	Employer Contribution Rate for Fiscal Year Following Valuation Date	Compensation (in Millions)	Employer Contributions (in Millions)	Actuarial Accrued Liability (AAL, in Millions)	Actuarial Value of Assets (AVA, in Millions)	Unfunded Actuarial Accrued Liability (UAAL, in Millions)	Funded Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2014	17.28%	\$ 3,991.6	\$ 690	\$ 22,220	\$ 13,642	\$ 8,578	61.4%
2015	17.83%	4,094.4	730	23,102	14,346	8,756	62.1%
2016	17.83%	4,209.4	750	24,026	15,125	8,902	62.9%
2017	17.82%	4,332.5	772	24,947	15,913	9,035	63.8%
2018	17.82%	4,464.2	796	25,863	16,711	9,152	64.6%
2019	17.82%	4,604.7	821	26,776	17,524	9,252	65.4%
2020	17.82%	4,753.6	847	27,685	18,354	9,331	66.3%
2021	17.81%	4,910.9	875	28,589	19,203	9,386	67.2%
2022	17.81%	5,076.8	904	29,490	20,074	9,415	68.1%
2023	17.80%	5,251.8	935	30,387	20,973	9,414	69.0%
2024	17.80%	5,435.9	968	31,281	21,902	9,379	70.0%
2025	17.79%	5,628.3	1,002	32,172	22,867	9,305	71.1%
2026	17.79%	5,829.5	1,037	33,059	23,870	9,189	72.2%
2027	17.78%	6,040.2	1,074	33,942	24,917	9,025	73.4%
2028	17.78%	6,260.6	1,113	34,822	26,014	8,808	74.7%
2029	17.78%	6,491.6	1,154	35,701	27,169	8,532	76.1%
2030	17.77%	6,732.8	1,197	36,580	28,389	8,191	77.6%
2031	17.77%	6,984.8	1,241	37,462	29,684	7,778	79.2%
2032	17.77%	7,247.9	1,288	38,348	31,063	7,286	81.0%
2033	17.76%	7,522.3	1,336	39,242	32,537	6,705	82.9%
2034	17.76%	7,809.9	1,387	40,146	34,118	6,028	85.0%
2035	17.76%	8,109.8	1,440	41,066	35,821	5,245	87.2%
2036	17.76%	8,422.8	1,496	42,005	37,659	4,346	89.7%
2037	17.76%	8,749.9	1,554	42,966	39,647	3,319	92.3%
2038	17.76%	9,092.0	1,615	43,954	41,802	2,152	95.1%
2039	17.76%	9,449.2	1,678	44,976	44,143	833	98.1%
2040	17.76%	9,821.8	1,744	46,037	46,690	(653)	101.4%
2041	17.76%	10,210.0	1,813	47,143	49,464	(2,321)	104.9%
2042	17.76%	10,614.7	1,885	48,299	52,488	(4,189)	108.7%
2043	17.76%	11,036.2	1,960	49,513	55,785	(6,272)	112.7%
2044	17.76%	11,475.2	2,038	50,789	59,382	(8,592)	116.9%

Employer Covered Payroll

	Police and Firefighters		All Other Employees		All Employees	
	March 31, 2014	March 31, 2013	March 31, 2014	March 31, 2013	March 31, 2014	March 31, 2013
	(1)	(2)	(3)	(4)	(5)	(6)
State of Hawaii	\$ 15,825,252	\$ 16,083,546	\$ 2,894,093,727	\$ 2,768,036,737	\$ 2,909,918,979	\$ 2,784,120,283
City & County of Honolulu	250,908,710	247,900,345	308,936,385	296,729,868	559,845,095	544,630,213
Board of Water Supply	-	-	33,411,383	32,127,222	33,411,383	32,127,222
County of Hawaii	62,796,259	61,098,403	85,763,414	82,469,996	148,559,673	143,568,399
County of Maui	53,484,544	53,732,680	92,251,101	88,991,927	145,735,645	142,724,607
County of Kauai	23,412,506	23,964,561	50,152,804	49,674,677	73,565,310	73,639,238
Total All Employers	\$ 406,427,271	\$ 402,779,535	\$ 3,464,608,814	\$ 3,318,030,427	\$ 3,871,036,085	\$ 3,720,809,962

Schedule of Funding Progress
(As required by GASB #25)

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial		Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
			Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
June 30, 1999	\$ 8,590.8	\$ 9,181.7	\$ 590.9	93.6%	\$ 2,186.5	27.0%
June 30, 2000	9,204.7	9,698.9	494.2	94.9%	2,275.3	21.7%
June 30, 2001	9,516.0	10,506.9	991.0	90.6%	2,444.2	40.5%
June 30, 2002	9,415.2	11,210.2	1,795.1	84.0%	2,671.7	67.2%
June 30, 2003	9,074.0	11,952.1	2,878.1	75.9%	2,826.7	101.8%
June 30, 2004	8,797.1	12,271.3	3,474.2	71.7%	2,865.1	121.3%
June 30, 2005	8,914.8	12,986.0	4,071.1	68.6%	3,041.1	133.9%
June 30, 2006 *	9,529.4	14,661.4	5,132.0	65.0%	3,238.3	158.5%
June 30, 2007 **	10,589.8	15,696.5	5,106.8	67.5%	3,507.0	145.6%
June 30, 2008	11,381.0	16,549.1	5,168.1	68.8%	3,782.1	136.6%
June 30, 2009	11,400.1	17,636.4	6,236.3	64.6%	4,030.1	154.7%
June 30, 2010	11,345.6	18,483.7	7,138.1	61.4%	3,895.7	183.2%
June 30, 2011 **	11,942.8	20,096.9	8,154.2	59.4%	3,916.0	208.2%
June 30, 2012	12,242.5	20,683.4	8,440.9	59.2%	3,890.0	217.0%
June 30, 2013	12,748.8	21,243.7	8,494.9	60.0%	3,906.7	217.4%
June 30, 2014	13,641.8	22,220.1	8,578.3	61.4%	3,991.6	214.9%

Note : Dollar amounts in millions.

* Assumption changes and new Hybrid Plan effective June 30, 2006.

** New assumption effective on valuation date.

Schedule of Employer Contributions
(As required by GASB #25)

Fiscal Year	Annual Required Contribution	Actual Contribution	Percentage Contributed
(1)	(2)	(3)	(4)
1999	\$ 185,387	\$ 154,470	83.3%
2000	172,255	22,392	13.0%
2001	164,397	8,132	4.9%
2002	167,459	167,459	100.0%
2003	190,586	190,586	100.0%
2004	235,686	235,686	100.0%
2005	328,717	328,717	100.0%
2006*	423,446	423,446	100.0%
2007	476,754	454,494	95.3%
2008	510,727	488,770	95.7%
2009	526,538	578,635	109.9%
2010	536,237	547,613	102.1%
2011	582,535	534,858	91.8%
2012	654,755	548,353	83.7%
2013	667,142	581,447	87.2%
2014	705,224	653,128	92.6%

Note : Dollar amounts in thousands

* Effective July 1, 2005 the required contributions are based on contribution rates and not specific dollar amounts.

Notes to Required Supplementary Information
(as required by GASB #25)

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

Valuation date	June 30, 2014
Actuarial cost method	Entry Age Normal
Amortization method	Level percent, open
Remaining amortization period as of June 30, 2014*	30 years
Asset valuation method	4-year smoothed market
Actuarial assumptions:	
Investment rate of return**	7.75%
Projected salary increases **	
Police and Fire Employees	19.00% to 5.00%
General Employees	8.00% to 4.00%
Teachers	8.50% to 5.00%
**Includes inflation at	3.00%
Cost-of-living adjustments (COLAs)***	2.5%/1.5%

*Remaining amortization period for Annual Required Contribution is 30 years.

***COLAs are not compounded, they are based on original pension amount.

Membership Data

	Police and Firefighters		All Other Employees		All Employees	
	June 30, 2014	June 30, 2013	June 30, 2014	June 30, 2013	June 30, 2014	June 30, 2013
	(1)	(2)	(3)	(4)	(5)	(6)
1. Active members						
a. Number	5,006	4,971	62,200	61,255	67,206	66,226
b. Covered payroll	\$ 406,427,272	\$ 402,779,535	\$ 3,464,608,815	\$ 3,318,030,427	\$ 3,871,036,087	\$ 3,720,809,962
c. Average salary	\$ 81,188	\$ 81,026	\$ 55,701	\$ 54,168	\$ 57,600	\$ 56,184
d. Average age	42.0	41.8	48.2	48.1	47.8	47.7
e. Average service	14.1	14.0	13.5	13.5	13.5	13.5
2. Inactive members						
a. Number	245	251	7,860	7,061	8,105	7,312
b. Total annual deferred benefits	\$ 3,886,865	\$ 3,871,611	\$ 57,116,099	\$ 51,478,187	\$ 61,002,964	\$ 55,349,798
c. Average annual deferred benefit	\$ 15,865	\$ 15,425	\$ 7,267	\$ 7,290	\$ 7,527	\$ 7,570
3. Service retirees						
a. Number	3,238	3,165	34,866	34,013	38,104	37,178
b. Total annual benefits	\$ 157,342,660	\$ 148,633,887	\$ 855,752,432	\$ 819,710,342	\$ 1,013,095,092	\$ 968,344,229
c. Average annual benefit	\$ 48,593	\$ 46,962	\$ 24,544	\$ 24,100	\$ 26,588	\$ 26,046
4. Disabled retirees						
a. Number	146	152	1,430	1,411	1,576	1,563
b. Total annual benefits	\$ 2,859,902	\$ 2,855,319	\$ 16,975,618	\$ 16,132,190	\$ 19,835,520	\$ 18,987,509
c. Average annual benefit	\$ 19,588	\$ 18,785	\$ 11,871	\$ 11,433	\$ 12,586	\$ 12,148
5. Beneficiaries						
a. Number	248	223	3,159	2,848	3,407	3,071
b. Total annual benefits	\$ 8,015,198	\$ 6,625,501	\$ 45,309,054	\$ 39,323,155	\$ 53,324,252	\$ 45,948,656
c. Average annual benefit	\$ 32,319	\$ 29,711	\$ 14,343	\$ 13,807	\$ 15,651	\$ 14,962

Historical Summary of Active Member Data

Year Ending June 30,	Active Members		Covered Payroll		Average Salary		Average Age	Average Service
	Number	Percent Increase	Amount in \$ Millions	Percent Increase	\$ Amount	Percent Increase		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1994	58,890	2.5%	\$ 2,029.9	2.7%	\$ 34,469	0.2%		
1995	58,498	-0.7%	2,083.0	2.6%	35,608	3.3%		
1996	56,985	-2.6%	1,990.1	-4.5%	34,923	-1.9%		
1997	57,044	0.1%	2,019.3	1.5%	35,399	1.4%		
1998	57,797	1.3%	2,135.9	5.8%	36,955	4.4%		
1999	58,387	0.9%	2,186.5	2.4%	37,448	1.3%		
2000	59,191	1.4%	2,275.3	4.1%	38,440	2.6%	45.5	13.0
2001	59,992	1.4%	2,350.2	3.3%	39,175	1.9%	45.6	13.3
2002	62,208	3.7%	2,568.7	9.3%	41,292	5.4%	45.8	13.2
2003	62,292	0.1%	2,718.4	5.8%	43,640	5.7%	46.0	13.1
2004	62,573	0.5%	2,755.5	1.4%	44,037	0.9%	46.0	13.0
2005	63,073	0.8%	2,924.5	6.1%	46,368	5.3%	46.3	13.0
2006	64,069	1.6%	3,113.7	6.5%	48,599	4.8%	46.4	13.0
2007	65,251	1.8%	3,340.5	7.3%	51,194	5.3%	46.5	13.0
2008	66,589	2.1%	3,601.7	7.8%	54,089	5.7%	46.6	12.9
2009	67,912	2.0%	3,838.0	6.6%	56,514	4.5%	46.8	12.9
2010	65,890	-3.0%	3,713.6	-3.2%	56,360	-0.3%	47.1	13.2
2011	65,310	-0.9%	3,731.4	0.5%	57,133	1.4%	47.4	13.4
2012	65,599	0.4%	3,706.1	-0.7%	56,497	-1.1%	47.6	13.5
2013	66,226	1.0%	3,720.8	0.4%	56,184	-0.6%	47.7	13.5
2014	67,206	1.5%	3,871.0	4.0%	57,600	2.5%	47.8	13.5

History of Cash Flow

Year Ending June 30,	Contributions			Expenditures				External Cash Flow for the Year ²	Market Value of Assets	External Cash Flow as Percent of Market Value
	Employee	Employer	Total	Benefit Payments	Refunds	Administrative Expenses ¹	Total			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2003	\$ 57.2	\$ 190.6	\$ 247.8	\$ (569.2)	\$ (36.2)	\$ (6.8)	\$ (612.2)	\$ (364.4)	\$ 7,687.2	(4.7%)
2004	55.1	235.7	290.8	(636.2)	(2.3)	(10.5)	(649.0)	(358.2)	8,565.4	(4.2%)
2005	57.1	328.7	385.8	(676.3)	(3.4)	(7.3)	(687.0)	(301.2)	9,195.9	(3.3%)
2006	56.3	423.4	479.7	(720.5)	(2.5)	(8.5)	(731.5)	(251.8)	9,932.4	(2.5%)
2007	144.7	454.5	599.2	(761.0)	(3.5)	(9.6)	(774.1)	(174.9)	11,434.3	(1.5%)
2008	163.4	488.8	652.2	(792.3)	(3.7)	(10.7)	(806.7)	(154.5)	10,846.8	(1.4%)
2009	184.5	578.6	763.1	(839.1)	(3.5)	(12.3)	(854.9)	(91.8)	8,818.0	(1.0%)
2010	360.0	547.6	907.6	(906.4)	(7.8)	(12.2)	(926.4)	(18.8)	9,821.6	(0.2%)
2011	231.0	534.9	765.9	(960.2)	(7.9)	(13.3)	(981.4)	(215.5)	11,642.3	(1.9%)
2012	178.8	548.4	727.2	(1,015.4)	(7.2)	(11.6)	(1,034.2)	(307.0)	11,285.9	(2.7%)
2013	185.8	581.4	767.2	(1,060.6)	(7.2)	(12.3)	(1,080.1)	(312.9)	12,357.8	(2.5%)
2014	\$ 206.1	\$ 653.1	\$ 859.2	\$ (1,122.4)	\$ (8.5)	\$ (12.6)	\$ (1,143.5)	\$ (284.3)	\$ 14,203.0	(2.0%)

Amounts in \$ millions

¹ Excludes investment expenses² Column (9) = Column (4) + Column (8)

Solvency Test

	<u>June 30, 2014</u>	<u>June 30, 2013</u>
	(1)	(2)
1. Actuarial accrued liability (AAL)		
a. Active member contributions	\$ 1,812,870,083	\$ 1,658,194,978
b. Retirees and beneficiaries	11,672,987,746	11,182,535,047
c. Active and inactive members	<u>8,734,239,718</u>	<u>8,403,014,352</u>
d. Total	\$ 22,220,097,547	\$ 21,243,744,377
2. Actuarial value of assets	\$ 13,641,755,300	\$ 12,748,828,110
3. Cumulative portion of AAL covered		
a. Active member contributions	100%	100%
b. Retirees and beneficiaries	100%	99%
c. Active and inactive members	2%	0%

Highlights of Last Five Annual Actuarial Valuations
2010 through 2014

Item	Valuation Date: June 30				
	2010	2011	2012	2013	2014
Number of active members	65,890	65,310	65,599	66,226	67,206
Number of inactive members	6,895	6,649	6,909	7,312	8,105
Number of pensioners	35,763	36,871	37,830	38,741	39,680
Number of beneficiaries	2,678	2,818	2,944	3,071	3,407
Average monthly contributory plan pension amount	\$ 2,118	\$ 2,221	\$ 2,315	\$ 2,414	\$ 2,508
Average monthly noncontributory plan pension amount	\$ 1,457	\$ 1,509	\$ 1,538	\$ 1,562	\$ 1,585
Average monthly hybrid plan pension amount	\$ 1,857	\$ 2,055	\$ 2,090	\$ 2,092	\$ 2,088
Average monthly beneficiary amount	\$ 1,151	\$ 1,188	\$ 1,219	\$ 1,247	\$ 1,304
Total actuarial value of assets (\$millions)	\$ 11,346	\$ 11,943	\$ 12,242	\$ 12,749	\$ 13,642
Unfunded actuarial accrued liability (\$millions)	\$ 7,138.1	\$ 8,154.2	\$ 8,440.9	\$ 8,494.9	\$ 8,578.3
Funding Period (in years) ⁽¹⁾	41.3	25.0	30.0	28.0	26.0
Item (Dollar amounts in millions)	Fiscal Year				
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Employer contributions ⁽²⁾	\$ 547.6	\$ 534.9	\$ 548.4	\$ 581.4	\$ 653.1

⁽¹⁾ Beginning with the 2011 valuation, the funding period was determined using an open group projection. Prior valuations determined the remaining amortization based on the assumption that the amortization payment would remain constant as a percentage of pay.

⁽²⁾ Beginning with the fiscal year beginning July 1, 2005 a dollar contribution amount is not determined under the provisions of Act 181/2004. Instead a fixed percentage of payroll is contributed (15.75% for Police and Fire, 13.75% for All Others). Beginning July 1, 2008, the percentages increased to 19.70% for Police and Fire, 15.00% for All Others. Beginning July 1, 2012, the percentages increased to 22.0% for Police and Fire, 15.5% for All Others. Beginning July 1, 2013, the percentages increased to 23.0% for Police and Fire, 16.0% for All Others.

**Summary of Benefit Provisions
(For Members Hired Prior to 7/1/2012)**

	<u>Noncontributory Plan</u>	<u>Contributory Plan</u>	<u>Hybrid Plan</u>
Employee Contributions	No employee contributions	7.8% of salary	6.0% of salary
Normal Retirement			
Eligibility	Age 62 and 10 years credited service; or Age 55 and 30 years credited service	Age 55 and 5 years credited service	Age 62 and 5 years credited service; or Age 55 and 30 years credited service
Benefit	1 ¼% of average final compensation times years of credited service (Average final compensation or AFC is an average of the highest salaries during any three years of credited service, excluding any salary paid in lieu of vacation or if ERS membership occurred prior to 1/1/71, AFC may be an average of the highest salaries during any five years of credited service including any salary paid in lieu of vacation.)	2% of average final compensation times years of credited service (Average final compensation or AFC is an average of the highest salaries during any three years of credited service, excluding any salary paid in lieu of vacation or if ERS membership occurred prior to 1/1/71, AFC may be an average of the highest salaries during any five years of credited service including any salary paid in lieu of vacation.)	2% of average final compensation times years of credited service, split formula for unconverted noncontributory service at 1 ¼% (Average final compensation or AFC is an average of the highest salaries during any three years of credited service, excluding any salary paid in lieu of vacation or if ERS membership occurred prior to 1/1/71, AFC may be an average of the highest salaries during any five years of credited service including any salary paid in lieu of vacation.)

	<u>Noncontributory Plan</u>	<u>Contributory Plan</u>	<u>Hybrid Plan</u>
Early Retirement			
Eligibility	Age 55 and 20 years credited service	Any age and 25 years credited service	Age 55 with 20 years credited service
Benefit	Maximum allowance reduced 6% per year under age 62	Maximum allowance reduced 5% per year under age 55 plus 4% per year under age 50	Maximum allowance reduced 5% for each year under age 62
Deferred Vesting			
Eligibility	10 years credited service	5 years credited service and contributions left in the ERS	5 years credited service and contributions left in the ERS
Benefit	Accrued maximum allowance payable at age 65	Accrued maximum allowance payable at age 55	Accrued maximum allowance payable at age 62
Annuity Savings Account			
Interest	Not applicable	4.5% per annum on employee contributions and accrued interest	4.5% per annum on employee contributions and accrued interest
Eligibility	Not applicable	Requests refund and forfeits future retirement benefit	Requests refund and forfeits future retirement benefit
Benefit			
- Terminates with less than 5 years credited service	Not applicable	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest
- Terminates with 5 or more years of credited service	Not applicable	Return of member's contributions and accrued interest	Return of member's Hybrid Plan contributions and accrued interest, both times 150%. Return of non-Hybrid balance transfers and accrued interest.

	<u>Noncontributory Plan</u>	<u>Contributory Plan</u>	<u>Hybrid Plan</u>
Ordinary Disability			
Eligibility	10 years credited service	10 years credited service	10 years credited service
Benefit	1 ¼% of AFC times years of credited service, unreduced for age (Minimum is 12.5% AFC)	1 ¾% of AFC times years of credited service, unreduced for age (Minimum is 30% AFC)	2% of AFC times years of credited service, unreduced for age, split formula for unconverted noncontributory service at 1 ¼% (Minimum is 25% AFC)
Service-Connected Disability			
Eligibility	Any age or credited service	Any age or credited service	Any age or credited service
Benefit	Accrued maximum allowance, but not less than 15% AFC. For accidents that occur on or after July 1, 2004, lifetime pension of 35% of AFC.	Totally disabled: lifetime pension of 66 2/3% AFC plus annuity. Occupationally disabled: same benefit (66 2/3% pension plus annuity) paid for 3 years and then pension is reduced to 33 1/3% AFC if not totally disabled. For accidents on or after July 7, 1998, lifetime pension of 50% of AFC plus refund of member's contributions and accrued interest.	Lifetime pension of 35% of AFC plus refund of member's contributions and accrued interest.

	Noncontributory Plan	Contributory Plan	Hybrid Plan
Ordinary Death			
Eligibility	Active employee at time of death with at least 10 years of credited service	Active employee at time of death with at least 1 year of service	Active employee at time of death with at least 5 years of service
Benefit	<p>Surviving spouse/reciprocal beneficiary and dependent children receive a benefit equal to a percentage of member's accrued maximum allowance unreduced for age; or</p> <p>Option B (100% Joint and Survivor) benefit for surviving spouse if member was eligible for retirement at time of death and a percentage of member's accrued maximum allowance unreduced for age for the dependent children</p>	<p>Lump sum payment of member's contributions and accrued interest plus a percentage of the salary earned in the 12 months preceding death; or</p> <p>Option 3 (50% Joint and Survivor) benefit if member was not eligible for retirement at the time of death, credited with 10 years of service, and one beneficiary designated (benefit calculated using the ordinary disability retirement formula); or</p> <p>Option 2 (100% Joint and Survivor) benefit if member was eligible for retirement at the time of death and one beneficiary designated</p>	<p>Return of member's Hybrid Plan contributions and accrued interest (both times 150%) plus return of non-Hybrid balance transfers and accrued interest; or</p> <p>Option 3 (50% Joint Survivor) lifetime benefit if credited with at least 10 years of service and one beneficiary designated; or</p> <p>Option 2 (100% Joint Survivor) lifetime monthly benefit if member was eligible for service retirement at time of death, and one beneficiary designated</p>

	Noncontributory Plan	Contributory Plan	Hybrid Plan
Service-Connected Death			
Eligibility	Any age or service	Any age or service	Any age or service
Benefit	<p>Surviving spouse/reciprocal beneficiary receives pension equal to 30% of AFC (until remarriage or re-entry into a new reciprocal beneficiary relationship); additional benefits payable to surviving dependent children (up to age 18)</p> <p>If there is no spouse/reciprocal beneficiary or dependent children, no benefit is payable.</p>	<p>Lump sum payment of member's contributions and accrued interest, plus pension of 50% AFC to surviving spouse/reciprocal beneficiary (until remarriage or re-entry into a new reciprocal beneficiary relationship);</p> <p>If there is no surviving spouse or reciprocal beneficiary, surviving dependent children (up to age 18) or dependent parents shall be eligible for a monthly benefit.</p> <p>If there is no spouse/reciprocal beneficiary or dependent children/parents, the ordinary death benefit shall be payable to the designated beneficiary.</p>	<p>Lump sum payment of member's contributions and accrued interest, plus pension of 50% AFC to surviving spouse/reciprocal beneficiary (until remarriage or re-entry into a new reciprocal beneficiary relationship);</p> <p>If there is no surviving spouse or reciprocal beneficiary, surviving dependent children (up to age 18) or dependent parents shall be eligible for a monthly benefit.</p> <p>If there is no spouse/reciprocal beneficiary or dependent children/parents, the ordinary death benefit shall be payable to the designated beneficiary.</p>

For members hired after June 30, 2011, the interest crediting rate on employee contributions and accrued interest is 2.0% per annum.

The plan provisions summarized above apply to teachers and most State and County employees. Special provisions applicable to other groups of employees are outlined below:

- A. Police officers, firefighters, investigators of the Department of the Prosecuting Attorney and the Attorney General, narcotic enforcement investigators, and public safety investigators contribute 12.2% of their monthly salary to the ERS instead of 7.8%. These members may retire at age 55 with 5 years of credited service or at any age with 25 years of credited service and receive a retirement benefit of 2 ½% of average final compensation (AFC) for each year of such service up to a maximum of 80% AFC, provided the last 5 years of credited service in any of these occupations.
- B. Judges, elected officials, and legislative officers may retire at age 55 with at least 5 years of credited service, or at any age with at least 10 years of credited service and receive a pension of 3 ½% of AFC for each year of such service plus an annuity from their contributions allocable to the period of such service. This benefit cannot exceed 75% of the AFC. Judges hired after June 30, 1999 require 25 years of credited service in order to retire before age 55.
- C. Sewer workers in specified classifications, water safety officers, and emergency medical technicians (EMTs) may retire at any age if they are credited with 25 years of such service with the last 5 or more years in these occupations. (The 25-year feature is phased in through 7/1/2008 for EMTs.)
- D. Sewer workers in specified classifications, water safety officers, and emergency medical technicians (EMTs) that transfer to the Hybrid Plan contribute 9.75% of their monthly salary to the ERS. These members may retire at age 62 with 5 years of credited service or at any age if they are credited with 25 years of such service with the last 5 or more years in these occupations.

**Summary of Benefit Provisions
(For Members Hired After 6/30/2012)**

	Contributory Plan (for Police/Fire)	Contributory Plan (for Judges/Elected Officers)	Hybrid Plan
Employee Contributions	14.2% of base pay earnings	9.8% of base pay earnings	8.0% of base pay earnings 11.75% of base pay earnings for Sewer workers, water safety officers, and emergency medical technicians (EMTs)
Normal Retirement Eligibility	Age 60 and 10 years credited service	Age 60 and 10 years credited service	Age 65 and 10 years credited service; or Age 60 and 30 years credited service Sewer workers, water safety officers, and EMTs may retire with 25 years credited service at age 55.
Benefit	2.25% of average final compensation times years of credited service. (Average final compensation or AFC is an average of the highest base pay earnings during any five years of credited service, excluding any salary paid in lieu of vacation.) Maximum is 80% of AFC.	3.0% of average final compensation times years of credited service (Average final compensation or AFC is an average of the highest base pay earnings during any five years of credited service, excluding any salary paid in lieu of vacation.) Maximum is 75% of AFC.	1.75% of average final compensation times years of credited service (Average final compensation or AFC is an average of the highest base pay earnings during any five years of credited service, excluding any salary paid in lieu of vacation.)

	Contributory Plan (for Police Fire)	Contributory Plan (for Judges/Elected Officers)	Hybrid Plan
Early Retirement			
Eligibility	Age 55 and 25 years credited service	Age 55 and 25 years credited service Any age with 10 years for elected officers	Age 55 with 20 years credited service Sewer workers, water safety officers, and emergency medical technicians (EMTs) may retire with 25 years credited service.
Benefit	Maximum allowance reduced 6% per year under age 60	Maximum allowance reduced 6% per year under age 60	Maximum allowance reduced 5% for each year under age 65
Deferred Vesting			
Eligibility	10 years credited service and contributions left in the ERS	10 years credited service and contributions left in the ERS	10 years credited service and contributions left in the ERS
Benefit	Accrued maximum allowance payable at age 60	Accrued maximum allowance payable at age 60	Accrued maximum allowance payable at age 65
Annuity Savings Account			
Interest	2.0% per annum	2.0% per annum	2.0% per annum
Eligibility	Requests refund and forfeits future retirement benefit	Requests refund and forfeits future retirement benefit	Requests refund and forfeits future retirement benefit
Benefit			
- Terminates with less than 10 years credited service	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest
- Terminates with 10 or more years of credited service	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest	Return of member's contributions and accrued interest, both times 120%

	Contributory Plan (for Police Fire)	Contributory Plan (for Judges/Elected Officers)	Hybrid Plan
Ordinary Disability			
Eligibility	10 years credited service	10 years credited service	10 years credited service
Benefit	1 ¾% of AFC times years of credited service, unreduced for age (Minimum is 30% AFC)	3.0% of AFC times years of credited service, unreduced for age (Minimum is 30% AFC)	1 ¾% of AFC times years of credited service, unreduced for age (Minimum is 25% AFC)
Service-Connected Disability			
Eligibility	Any age or credited service	Any age or credited service	Any age or credited service
Benefit	Lifetime pension of 50% of AFC plus refund of member's contributions and accrued interest.	Lifetime pension of 50% of AFC plus refund of member's contributions and accrued interest.	Lifetime pension of 35% of AFC plus refund of member's contributions and accrued interest.

	Contributory Plan (for Police Fire)	Contributory Plan (for Judges/Elected Officers)	Hybrid Plan
Ordinary Death			
Eligibility	Active employee at time of death with at least 1 years of credited service	Active employee at time of death with at least 1 years of credited service	Active employee at time of death with at least 10 years of service
Benefit	Lump sum payment of member's contributions and accrued interest plus a percentage of the salary earned in the 12 months preceding death; or Option 3 (50% Joint Survivor) lifetime benefit if credited with at least 10 years of service and one beneficiary designated; or Option 2 (100% Joint Survivor) lifetime monthly benefit if member was eligible for service retirement at time of death, and one beneficiary designated	Lump sum payment of member's contributions and accrued interest plus a percentage of the salary earned in the 12 months preceding death; or Option 3 (50% Joint Survivor) lifetime benefit if credited with at least 10 years of service and one beneficiary designated; or Option 2 (100% Joint Survivor) lifetime monthly benefit if member was eligible for service retirement at time of death, and one beneficiary designated	Return of member's Hybrid Plan contributions and interest; or Option 3 (50% Joint Survivor) lifetime benefit if credited with at least 10 years of service and one beneficiary designated; or Option 2 (100% Joint Survivor) lifetime monthly benefit if member was eligible for service retirement at time of death, and one beneficiary designated

	Contributory Plan (for Police Fire)	Contributory Plan (for Judges/Elected Officers)	Hybrid Plan
Service-Connected Death			
Eligibility	Any age or service	Any age or service	Any age or service
Benefit	Same for all plans.		
	Lump sum payment of member's contributions and interest, plus pension of 50% AFC to surviving spouse/reciprocal beneficiary (until remarriage or re-entry into a new reciprocal beneficiary relationship);		
	If there is no surviving spouse or reciprocal beneficiary, surviving dependent children (up to age 18) or dependent parents shall be eligible for a monthly benefit.		
	If there is no spouse/reciprocal beneficiary or dependent children/parents, the ordinary death benefit shall be payable to the designated beneficiary.		

Post Retirement Benefit

Each retiree's original retirement allowance is increased by 1 ½% (if their membership date is after June 30, 2012) or 2 ½% (if their membership date is before July 1, 2012) on each July 1 beginning the calendar year after retirement. This cumulative benefit is not compounded.

Retirement Options**Contributory and Hybrid Plans**

Maximum Allowance: The member receives a lifetime maximum allowance and at death the difference between the value of the member's contributions at the time of retirement and the retirement allowance paid prior to death is paid to the designated beneficiary(ies) or estate.

Option One: The member receives a reduced lifetime allowance based on age and at death, the difference between the initial insurance reserve and the retirement allowance paid prior to death is paid to the designated beneficiary(ies) or estate.

Option Two (100% Joint and Survivor with Pop-Up): The member receives a reduced lifetime allowance based on ages of both the member and the sole beneficiary and at death of the member; the same allowance is paid to the designated beneficiary for life. Should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance, and all payments will cease at the retiree's death.

Option Three (50% Joint and Survivor with Pop-Up): This plan is similar to Option Two. The member receives a reduced lifetime allowance which is higher than Option Two and is based on ages of both the member and the sole beneficiary; however, at death of the member one-half of the allowance is paid to the designated beneficiary for life. Like Option Two, should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance, and all payments will cease at the retiree's death.

Option Four: This option allows the member to devise a plan that will provide a benefit according to the member's specifications. It requires certification by the Actuary and approval of the Board of Trustees. The following Option Four plans have been approved:

Combination of Options Five and Maximum Allowance: The member receives a reduced lifetime allowance and is allowed to withdraw the pre-1987 nontaxable contribution, 50% of accumulated contributions, or 75% of accumulated contributions (Hybrid Plan members are not allowed the 75% option); at death, the difference between the value of the member's contributions at the time of retirement and the retirement allowance paid prior to death is paid to the designated beneficiary(ies) or estate.

Combination of Options Five and One: The member receives a reduced lifetime allowance and is allowed to withdraw the pre-1987 nontaxable contributions, 50% of accumulated contributions, or 75% of accumulated contributions (Hybrid Plan members are not allowed the 75% option); at death, the difference between the initial insurance reserve and the retirement allowance paid prior to death is paid to the designated beneficiary(ies) or estate.

Combination of Options Five and Two: The member receives a reduced lifetime allowance based on ages of both member and the sole beneficiary, and is allowed to withdraw the pre-1987 nontaxable contributions, 50% of accumulated contributions, or 75% of accumulated contributions (Hybrid Plan members are not allowed the 75% option); at death of the member, the same allowance is paid to the designated beneficiary for life. As in the case of Option Two, should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance (as adjusted for the contribution withdrawal), and all payments will cease at the retiree's death.

Combination of Options Five and Three: The member receives a reduced lifetime allowance based on ages of both member and the sole beneficiary, and is allowed to withdraw the pre-1987 nontaxable contributions, 50% of accumulated contributions, or 75% of accumulated contributions (Hybrid Plan members are not allowed the 75% option); at death of the member, one-half of the allowance is paid to the designated beneficiary for life. As in the case of Option Three, should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance (as adjusted for the contribution withdrawal), and all payments will cease at the retiree's death.

Option Five: The member receives a reduced lifetime allowance and is allowed to withdraw all accumulated contributions; at death, the retiree is entitled to the pension for the entire month that death occurs.

Option Four and Option Five are restricted to those members with at least ten years of credited service excluding unused sick leave credit.

Regardless of the option selected, should death occur during the first year of retirement, the designated beneficiary may elect to receive benefits as if death had occurred immediately prior to retirement in lieu of the death benefits described above.

Noncontributory Plan

Maximum Allowance: The member receives a lifetime pension and at death, the retiree is entitled to the pension for the entire month that death occurs.

Option A (50% Joint and Survivor with Pop-Up): The member receives a reduced lifetime pension and at death of the member, one-half of the pension is paid to the sole designated beneficiary for life. Should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance, and all payments will cease at the retiree's death.

Option B (100% Joint and Survivor with Pop-up): The member receives a reduced lifetime pension and at death of the member, the same pension is paid to the sole designated beneficiary for life. Like Option A, should the designated beneficiary predecease the retiree, another beneficiary cannot be named, the benefit will revert back to the Maximum Allowance, and all payments will cease at the retiree's death.

Option C (Ten-Year Guarantee): The member receives a reduced lifetime pension. Should death occur within ten years of retirement, the same pension will be paid to the designated beneficiary for the balance of the ten-year period. Should the designated beneficiary predecease the retiree, another beneficiary can be named.

Regardless of the option selected, should death occur during the first year of retirement, the designated beneficiary may elect to receive benefits as if death had occurred immediately prior to retirement in lieu of the death benefits described above.

Summary of Plan Changes

Act 65, effective July 1, 1999

Requires judges who enter or re-enter service after June 30, 1999 to be at least 55 years old and five years of service or have 25 years of service to rehire.

Act 100, effective June 30, 1999

Uses actuarial investment earnings in excess of a ten percent (10%) actuarial investment yield rate to reduce the employer's contribution requirements by \$147.0 million and \$50.6 million for fiscal years ending June 30, 2000 and 2001, respectively.

Act 284, effective June 30, 2001

Provide an increase in pension benefits for current retirees with military service who retired prior to July 2, 1989. A retirant who rendered honorable active military service could be granted up to 4 years of military service credits based upon his/her years of credited service under the ERS, not to exceed his/her actual years of military service. The years of military service credits granted are based on the following schedule:

- 0 years for retirants with less than 8 years of credited service
- Up to 2 years of retirants with 8 years or more of credited service
- Up to 3 years of retirants with 20 years or more of credited service
- Up to 4 years of retirants with 25 years or more of credited service

For each year of military service credits granted on the schedule above, the retirant will be provided a \$36.00 increase in his/her monthly pension or retirement allowance.

Act 199, effective June 30, 2003

Emergency Medical Technicians (EMTs) are allowed to retire with an unreduced benefit after 25 years of service regardless of age, of which the last five or more years prior to retirement must be in that capacity. This feature is phased in one year at a time, July 1, 2003 through June 30, 2008.

Act 177, effective July 1, 2004

This Act allows police officers with a permanent service-connected disability to retain the 2-1/2% benefit multiplier for each year of service as a police officer.

Act 179, effective July 1, 2004

This Act increased the Noncontributory service-connected disability formula to 35% of average final compensation. The Act also changed the methodology for crediting interest on contributions for terminated members so that interest continues to accrue until the date of refund. The Act adds a "pop-up" feature to the joint & survivor benefit options if the beneficiary pre-deceases the retiree.

This Act also created the new Hybrid Plan which became effective July 1, 2006.

Act 181, effective July 1, 2004

This Act establishes fixed employer contribution rates as a percentage of compensation effective July 1, 2005. Employers will contribute 15.75% for their police officers and firefighters and 13.75% for other employees.

Act 183, effective July 1, 2004

This Act amends the ERS statutes to comply with the federal tax limits on compensation retroactive to July 1, 1996.

Act 56, effective December 1, 2004

This Act amends the ERS statutes to allow the automatic cost-of-living-adjustment to be reflected when determining actuarial equivalent optional forms of payment.

Act 256, effective July 5, 2007

Legislation was enacted to remove the statutory salary increase assumption from the statutes and to grant the System's Board of Trustees the authority to set the salary increase assumption. As a result of this legislation, the Board has adopted effective with this valuation the salary increase assumption recommended by GRS as a result of the Experience Study performed in 2006.

Legislation was also enacted to increase the employer contribution rates to the System. Effective July 1, 2008, the employer contribution rate for Police and Fire employees will increase from 15.75% to 19.70% and the rate for All Other employees will increase from 13.75% to 15.00%.

Act 163, effective June 23, 2011

Legislation was enacted that increased the future employer contribution rates to ERS. Employers of Police and Fire employees will contribute 22% of pay in FY 2013, 23% in FY 2014, 24% in FY 2015, and 25% in FY 2016 and beyond. Employers of All Other Employees will contribute 15.5% of pay in FY 2013, 16.0% in FY 2014, 16.5% in FY 2015, and 17.0% in FY 2016 and beyond.

Legislation was enacted that made numerous changes to the benefits and member contribution rates for employees hired after June 30, 2012. Key changes are shown below:

Benefit Provision	Police & Fire Employees	All Other Employees
Benefit Multiplier	2.25%	1.75%
Normal Retirement	Age 55 with 25 years of service, or age 60 with 10 years of service	Age 60 with 30 years of service, or age 65 with 10 years of service
Post-Retirement Increase	1.5%	1.5%
Hybrid Match	N/A	120%
Average Final Compensation	Highest 5 annual base salaries	Highest 5 annual base salaries
Eligibility for Deferred Benefit	10 years of service	10 years of service
Member Contribution Rate	14.20%	8.00%

Similar changes were also made to the benefits of Judges, Legislative Officers, etc.

Similar changes were also made to those employees in the All Other Employees group who are eligible to retire at 25 years of service including the addition of a minimum age requirement (55).

Finally, legislation was enacted that set the investment return assumption for the June 30, 2011 valuation at 7.75% (the rate recommended in the Experience Study presented to the Board in December of 2010). In addition, the legislation granted ERS's Board the authority to set this assumption for valuations after 2011.

Act 152, effective June 26, 2012

Legislation was enacted to require employers to pay additional contributions if a retiring employee, who was first employed prior to July 1, 2012 and who was last employed by the employer, has significant non-base pay increases included in their average final compensation. The additional contribution is equal to the actuarial present value of the additional benefits earned due to the "excessive" non-base pay increases.

Act 153, effective June 26, 2012

Legislation was enacted to eliminate most types of non-base pay from the definition of compensation for employees hired after June 30, 2012. For the impacted employees, non-base pay compensation will be excluded in determining both the contributions made by and on behalf of these employees and the benefits they will earn in the System.

**Summary of Actuarial Methods and Assumptions
(Adopted on June 30, 2007, and December 20, 2010)**

I. Valuation Date

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The normal cost and actuarial accrued liability are determined using the Entry Age Actuarial Cost Method. The actuarial accrued liability is assigned to years prior to the valuation, and the normal cost is assigned to the year following the valuation. The remaining costs are assigned to future years. The normal cost and accrued liability are determined on an individual basis.

The normal cost is the level percentage of payroll contribution required to accumulate the needed funds to pay all expected benefits. This percentage of payroll is then applied to the total compensation for the prior year for all active members, and is then adjusted for the payroll growth assumption.

The actuarial accrued liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial accrued liability (UAAL) is the excess of the actuarial accrued liability over the actuarial value of assets.

III. Funding of Unfunded Actuarial Accrued Liability

Since the State statutes governing the System establish the employee and employer contribution rates, the actuarial valuation determines the number of years required to amortize (or fund) the UAAL. Because of the legislated increases in future employer contribution rates and the new tier of benefits for employees hired after June 30, 2012, an open group projection of liabilities and assets was used to determine the length of time until the UAAL is eliminated. The open group projection assumed that the number of active members would remain static (i.e. each active employee who leaves employment due to termination, retirement, death or disability, would be replaced by exactly one new employee.

Because of this methodology for determining the funding period, any change in the unfunded actuarial accrued liability due to (i) actuarial gains and losses, (ii) changes in actuarial assumptions, or (iii) amendments, affects the funding period.

Please see Section VIII of this table for a description of the new entrant profile used in the open group projection.

IV. Actuarial Value of Assets

The actuarial value of assets is equal to the expected actuarial value of assets plus 25% of the difference between the actual market value of assets and the expected actuarial value of assets. The expected actuarial value of assets is calculated net of investment and administrative expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's actuarial value of assets, adjusted for contributions, benefits paid, and refunds.

V. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 7.75% per year, compounded annually, composed of an assumed 3.00% inflation rate and a 4.75% net real rate of return **(effective June 30, 2011)**.
2. Payroll growth rate: 3.50% per annum **(effective June 30, 2006)**.
3. Salary increase rate **(effective June 30, 2011)**: As shown below

	General Employees		Teachers	
Years of Service	Service-related Component	Total Annual Rate of Increase Including 3.00% Inflation Component and 1.00% General Increase Rate	Service-related Component	Total Annual Rate of Increase Including 3.00% Inflation Component and 1.50% General Increase Rate
(1)	(2)	(3)	(2)	(3)
1	4.00%	8.00%	4.00%	8.50%
2	3.00%	7.00%	3.25%	7.75%
3	2.00%	6.00%	2.50%	7.00%
4	1.25%	5.25%	2.00%	6.50%
5	1.00%	5.00%	1.50%	6.00%
6	0.75%	4.75%	1.00%	5.50%
7	0.50%	4.50%	1.00%	5.50%
8	0.50%	4.50%	0.75%	5.25%
9	0.50%	4.50%	0.75%	5.25%
10	0.25%	4.25%	0.75%	5.25%
11	0.25%	4.25%	0.50%	5.00%
12	0.25%	4.25%	0.50%	5.00%
13	0.25%	4.25%	0.50%	5.00%
14	0.25%	4.25%	0.50%	5.00%
15 or more	0.00%	4.00%	0.00%	4.50%

Police & Firefighters		
Years of Service	Service-related Component	Total Annual Rate of Increase Including 3.00% Inflation Component and 2.00% General Increase Rate
(1)	(2)	(3)
0	14.00%	19.00%
1	12.00%	17.00%
2 or more	0.00%	5.00%

Salary increases are assumed to occur once a year, on July 1. Therefore the pay used for the period between the valuation date and the first anniversary of the valuation date is equal to the reported pay for the prior year, annualized if necessary, and then increased by the salary increase assumption.

B. Demographic Assumptions

1. Post-Retirement Mortality rates

General Employees (effective June 30, 2011)

- a. Healthy males – Client Specific Table for males, 89% multiplier.
- b. Healthy females - Client Specific Table for females, 89% multiplier.
- c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward nine years.
- d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward nine years.

Teachers

- a. Healthy males – Client Specific Table for male teachers, 65% multiplier (**effective June 30, 2011**).
- b. Healthy females - Client Specific Table for female teachers, 67% multiplier (**effective June 30, 2011**).
- c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward five years (**effective June 30, 2011**).
- d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward six years (**effective June 30, 2006**).

Police and Fire

- a. Healthy males – 1994 US Group Annuity Mortality Static Table for males, 85% multiplier (**effective June 30, 2006**).
- b. Healthy females - 1994 US Group Annuity Mortality Static Table for females, 85% multiplier (**effective June 30, 2006**).
- c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward three years (**effective June 30, 2011**).
- d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward three years (**effective June 30, 2011**).

Mortality Improvement: To account for future mortality improvement, the healthy mortality rates were chosen so that the assumed mortality rates are smaller than the rates observed in the most recent experience study (dated 12-20-2010). The margin at the time of the study was at least 7% for all groups (i.e. 7% more actual male deaths than expected). No future mortality improvement after the measurement date is assumed except as described above.

2. Pre-retirement Mortality Rates (**effective June 30, 2011**)

The male pre-retirement mortality rates are multiples of a table that has the RP-2000 Male Employee rates for ages 1 to 70 and the RP-2000 Combined Male rates for ages above 70. Similarly, the female pre-retirement rates are multiples of a table that has the RP-2000 Female Employee rates for ages 1 to 70 and the RP-2000 Combined Female rates for ages above 70. The following table shows the factors that are used in conjunction with the tables described above to derive the final ordinary and accidental death rates.

Type	General Employees		Teachers		Police and Fire	
	Males	Females	Males	Females	Males	Females
Ordinary	64%	48%	50%	40%	15%	15%
Accidental	16%	12%	10%	5%	35%	35%

3. Disability rates (**effective June 30, 2011**) – The assumed total disability rates for employees covered by the contributory plan, hybrid plan and the noncontributory plan at select ages are multiples of the client specific table that follows:

Age	Male & Female
25	0.000%
30	0.001%
35	0.008%
40	0.026%
45	0.064%
50	0.146%
55	0.198%
60	0.217%

Note: The disability rates project the percentage of employees at each age that is assumed to become disabled before retiring. Multiples of the rates above are assumed to be ordinary disability or accidental disability, and vary by employee group as follows:

Type	General Employees		Teachers		Police and Fire
	Male	Female	Male	Female	Male & Female
Ordinary	135%	85%	50%	40%	70%
Duty	30%	7%	5%	5%	35%

4. Termination Rates (**effective June 30, 2011**) - Separate male and female rates, based on both age and service, developed from 2010 Experience Study. Rates reflect terminations for causes other than death, disability or retirement. Employees eligible for retirement are assumed to have no probability of termination. Sample rates are shown below:

For first 6 years of service

Group	Expected Terminations per 100 Lives (Male Members)					
	Years of Service					
	0	1	2	3	4	5
General Employees	15.5	12.5	10.5	9.0	7.0	6.0
Teachers	33.0	23.0	15.0	13.0	11.0	9.0
Police & Fire	12.0	9.0	4.0	4.0	4.0	4.0

Group	Expected Terminations per 100 Lives (Female Members)					
	Years of Service					
	0	1	2	3	4	5
General Employees	18.5	16.5	12.5	10.0	8.0	7.0
Teachers	28.0	23.0	16.0	14.0	12.0	8.0
Police & Fire	12.0	9.0	4.0	4.0	4.0	4.0

After first 6 years of service

Age	Expected Terminations per 100 Lives				
	Years of Service				
	General Employees Males	General Employees Females	Teachers Males	Teachers Females	Police & Fire
(1)	(2)	(3)	(4)	(5)	(6)
20	7.15	8.12	6.22	7.12	2.03
25	6.50	7.83	4.98	6.72	1.91
30	5.46	5.84	4.12	6.15	2.53
35	4.40	4.04	3.95	4.99	2.75
40	3.60	3.30	3.60	3.70	2.01
45	3.02	2.65	2.88	2.88	1.18
50	2.54	2.41	2.34	2.36	0.79
55	2.52	2.41	2.34	2.36	0.24
60	2.52	2.41	2.34	2.36	0.00

5. Retirement rates (**effective June 30, 2011**) - Separate male and female rates, based on age, developed from the 2010 Experience Study. Sample rates are shown below:

Contributory Plan and Hybrid Plan

Age	Expected Retirements per 100 Lives				
	General Employees		Teachers		Police and Fire
	Male	Female	Male	Female	Male & Female
45	2	1	0	0	13
46	2	1	0	0	13
47	2	1	0	0	13
48	2	1	0	0	13
49	2	1	0	0	13
50	2	1	1	0	15
51	2	1	1	1	15
52	2	1	1	1	15
53	2	2	2	2	15
54	3	3	3	3	15
55	16	13	20	18	20
56	14	13	15	16	20
57	14	13	15	16	20
58	14	13	15	16	20
59	14	13	15	16	20
60	14	15	14	18	30
61	15	15	14	18	30
62	25	25	14	25	30
63	20	20	14	20	30
64	20	20	14	15	30
65	25	25	20	25	100
66	25	25	15	25	100
67	20	20	15	20	100
68	20	20	15	20	100
69	20	20	15	20	100
70	20	20	15	20	100
71	20	20	15	20	100
72	20	20	15	20	100
73	20	20	15	20	100
74	20	20	15	20	100
75	100	100	100	100	100

Retirement rates for 25 & out group ages 50-54 are 10% for both males and females

Noncontributory Plan

Expected Retirements per 100 Lives

Age	General Employees				Teachers			
	Unreduced Retirement		Reduced Retirement		Unreduced Retirement		Reduced Retirement	
	Male	Female	Male	Female			Male	Female
55	13	12	2	2	10	13	2	3
56	13	12	2	2	10	13	2	3
57	13	12	2	2	10	14	2	3
58	13	12	2	2	10	15	2	3
59	13	12	3	3	10	16	3	3
60	14	15	4	4	10	17	5	5
61	14	18	5	5	10	18	10	5
62	25	25			16	25		
63	25	25			12	20		
64	20	20			10	18		
65	25	22			20	30		
66	25	22			15	25		
67	25	22			15	25		
68	25	22			15	25		
69	25	22			15	25		
70	20	20			15	25		
71	20	20			15	25		
72	20	20			15	25		
73	20	20			15	25		
74	20	20			15	25		
75	100	100			100	100		

Retirement rates for the 25 & out group ages 50-54 are 10% for both males and females

For Hybrid plan, early retirement rates are reduced by a factor of 10% for each year prior to age 65 (if hired after June 30, 2012) or 62 (if hired before July 1, 2012) for a maximum of 10 years.

Normal retirement rates for those hired after June 30, 2012 are increased by a factor of 10% for each year the member's first eligible normal retirement age is beyond the first eligible normal retirement age if he is hired before July 1, 2012. For Police/Fire, this factor will be 20% each year.

C. Other Assumptions

1. Projected Payroll for Contributions Purposes (**effective June 30, 2014**): The aggregate projected payroll for the fiscal year following the valuation date is calculated by increasing the actual payroll paid during the previous fiscal year by the payroll growth rate and multiplying by the ratio of current active members to the average number of active members during the previous fiscal year.
2. Percent married (**effective June 30, 2006**): 77% of male employees and 57.6% of female employees are assumed to be married.
3. Age difference (**effective June 30, 2006**): Male members are assumed to be four years older than their spouses, and female members are assumed to be four years younger than their spouses.
4. Percent electing annuity on death for contributory participants (when eligible): All of the spouses of married participants who die after becoming eligible for a retirement benefit are assumed to elect an annuity or a refund, whichever is more valuable at time of participant's death.
5. Percent electing deferred termination benefit: vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.
6. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt when eligible for early retirement.
7. Administrative expenses (**effective June 30, 2011**): The assumed investment return rate represents the anticipated net return after payment of all investment and administrative expenses. For purposes of determining the investment return assumption administrative expenses are assumed to be equal to 40 basis points of each year's investment return.
8. Reemployment, purchase of service, transfers: No recognition is made of (i) future member reimbursements upon reemployment, (ii) future purchase of additional service, or (iii) special transfer provisions.
9. Sick Leave: It is assumed that all members will have their benefit service increased by sick leave and the following loads will be applied by group:

General Employees	3.75%
Teachers	4.25%
Police and Fire	5.00%

10. COLA delay: It is assumed that the first COLA will be received 9 months after retirement. Teachers are assumed to receive the first COLA 12 months after retirement.
11. There will be no recoveries once disabled.
12. No surviving spouse will remarry and there will be no children's benefit.
13. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
14. Decrement timing: Retirements and terminations of Teachers are assumed to occur at the beginning of the year. All other decrements are assumed to occur mid-year.
15. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
16. Decrement relativity: Decrement rates are used directly from the Experience Study, without adjustment for multiple decrement table effects.
17. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.
18. Benefit Service: All members are assumed to accrue 1 year of service each year. Exact fractional service is used to determine the amount of benefit payable.
19. Police officers, firefighters, investigators of the Department of the Prosecuting Attorney and the Attorney General, narcotic enforcement investigators, and public safety investigators hired prior to June 30, 2012 are not assumed to retire at age 55 unless they have 10 years of service.

VI. Participant Data

Participant data was supplied for (i) active members, (ii) inactive vested members, who are entitled to a future deferred benefit, (iii) members and beneficiaries receiving benefits.

Salary supplied for the current year was based on the earnings for the March preceding the valuation date. This salary was compared to March base pay plus a twelve-month average of overtime, with the greater of the two being used for valuation pay.

VII. Dates of Adoption of Assumptions and Methods

Generally, actuarial assumptions and methods were adopted by the Board of Trustees on December 20, 2010 as recommended by Gabriel, Roeder, Smith & Company (GRS). The legislature set the investment return assumption for the 2011 valuation to the assumption recommended by GRS. The ERS Board has adopted the assumption beginning with the 2012 valuation.

VIII. New Entrant Profile

For the purposes of determining the funding period, an open group projection is used which replaces on a one-to-one basis each active member who leaves employment with an average new hire. The average new hire is determined based on a new entrant profile, which is created from the valuation data by determining the entry age and entry pay for anyone with seven or less years of service. The new entrant profile for the Police and Fire Employees and the All Other Employees are shown in the table below.

New Entrant Profile for Police & Fire Employees		
Entry Age	# of Employees	Average Salary
20-24	199	\$42,080
25-29	421	41,841
30-34	286	41,807
35-39	136	42,273
40-44	47	42,310
45-49	17	43,503
50-54	6	45,708
55-59	1	40,632
Total	1,113	41,993

It is assumed that 92.7% of new hires will be male.

Each group of new hires' salaries is assumed to grow 4.00% over the salaries of the previous year's group.

New Entrant Profile for All Other Employees		
Entry Age	# of Employees	Average Salary
15-19	19	\$26,410
20-24	1,433	37,250
25-29	3,459	40,108
30-34	2,759	42,208
35-39	2,388	43,097
40-44	1,954	41,537
45-49	1,785	40,980
50-54	1,449	42,278
55-59	1,169	45,146
60-64	484	46,511
65-69	52	47,971
Total	16,951	41,610

It is assumed that 40.0% of new hires will be male.

SECTION M

STATISTICAL TABLES

STATISTICAL TABLES

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19	79	DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE – ALL EMPLOYEES
20	80	DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE – NONCONTRIBUTORY MEMBERS, ALL
21	81	DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE – NONCONTRIBUTORY MEMBERS, GENERAL EMPLOYEES
22	82	DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE – NONCONTRIBUTORY MEMBERS, TEACHERS
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25	85	DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE – CONTRIBUTORY MEMBERS, TEACHERS
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36-2	97	HYBRID PENSIONS IN FORCE BY YEARS OF SERVICE
37-1	98	CONTRIBUTORY PENSIONS IN FORCE BY YEARS SINCE RETIREMENT
37-2	99	HYBRID PENSIONS IN FORCE BY YEARS SINCE RETIREMENT
38,41	100/103	PENSIONS IN FORCE BY PAYMENT OPTION – GENERAL EMPLOYEES/NEW
39,42	101/104	PENSIONS IN FORCE BY PAYMENT OPTION – TEACHERS/NEW
40,43	102/105	PENSIONS IN FORCE BY PAYMENT OPTION – POLICE AND FIRE/NEW

**Distribution of Active Members by Age and by Years of Service - All Employees
As of 06/30/2014**

Attained Age	Years of Credited Service												Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	347 \$36,402	235 \$39,869	49 \$39,023	26 \$40,964	3 \$41,901	4 \$38,294	0 \$0	664 \$38,037						
25-29	870 \$40,848	841 \$43,579	676 \$48,261	424 \$50,365	269 \$50,679	535 \$48,240	2 \$38,957	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3,617 \$45,808
30-34	713 \$44,028	773 \$45,943	628 \$49,177	510 \$51,266	429 \$54,864	2,716 \$52,630	412 \$54,003	3 \$63,855	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	6,184 \$50,591
35-39	590 \$44,092	593 \$48,089	495 \$52,801	397 \$53,408	306 \$54,236	2,606 \$53,377	2,167 \$59,096	238 \$60,365	2 \$49,776	0 \$0	0 \$0	0 \$0	0 \$0	7,394 \$54,111
40-44	398 \$44,770	446 \$45,513	354 \$54,838	303 \$49,016	224 \$55,089	2,143 \$54,226	2,308 \$59,684	1,899 \$65,967	474 \$65,178	4 \$44,148	0 \$0	0 \$0	0 \$0	8,553 \$57,877
45-49	354 \$44,297	326 \$44,929	298 \$52,950	246 \$52,782	180 \$51,250	1,794 \$52,323	1,695 \$56,812	1,509 \$64,576	2,348 \$68,459	474 \$72,389	3 \$63,289	0 \$0	0 \$0	9,227 \$59,734
50-54	288 \$45,384	316 \$46,943	251 \$55,192	203 \$56,427	174 \$55,608	1,734 \$49,761	1,512 \$52,559	1,152 \$58,508	2,145 \$66,273	2,013 \$70,981	361 \$68,108	1 \$60,744	1 \$60,744	10,150 \$59,678
55-59	207 \$43,644	280 \$46,668	217 \$52,198	196 \$57,478	141 \$49,915	1,424 \$50,225	1,353 \$51,801	1,050 \$57,911	1,728 \$61,806	1,730 \$68,133	1,116 \$73,279	214 \$66,157	214 \$66,157	9,656 \$59,523
60-64	144 \$50,010	161 \$49,077	154 \$58,990	128 \$58,702	129 \$55,079	1,076 \$53,043	1,082 \$52,320	855 \$57,510	1,307 \$61,966	1,138 \$69,097	722 \$76,498	764 \$76,585	764 \$76,585	7,660 \$62,014
65 & Over	49 \$59,988	86 \$57,342	58 \$67,724	62 \$51,806	63 \$54,157	653 \$52,713	631 \$52,221	480 \$58,412	600 \$63,395	483 \$68,529	272 \$80,612	664 \$88,169	664 \$88,169	4,101 \$64,726
Total	3,960 \$43,262	4,057 \$45,780	3,180 \$51,868	2,495 \$52,525	1,918 \$53,539	14,685 \$52,256	11,162 \$55,864	7,186 \$61,605	8,604 \$65,053	5,842 \$69,664	2,474 \$74,258	1,643 \$79,899	1,643 \$79,899	67,206 \$57,599

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, All
As of 06/30/2014**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	1 \$41,040	0 \$0	18 \$38,352	1 \$38,621	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	20 \$38,500
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	332 \$51,394	178 \$48,663	1 \$51,597	0 \$0	0 \$0	0 \$0	0 \$0	511 \$50,443
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	425 \$51,291	834 \$55,237	91 \$49,477	0 \$0	0 \$0	0 \$0	0 \$0	1,350 \$53,606
40-44	0 \$0	0 \$0	0 \$0	0 \$0	1 \$48,048	350 \$52,208	898 \$54,130	650 \$59,300	164 \$58,060	2 \$45,771	0 \$0	0 \$0	2,065 \$55,733
45-49	0 \$0	0 \$0	0 \$0	1 \$39,518	0 \$0	313 \$50,578	742 \$52,422	609 \$57,846	823 \$60,487	156 \$59,154	1 \$41,421	0 \$0	2,645 \$56,350
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	237 \$46,722	743 \$49,517	553 \$53,463	842 \$60,796	669 \$63,845	82 \$65,164	0 \$0	3,126 \$56,518
55-59	0 \$0	0 \$0	0 \$0	1 \$34,200	0 \$0	226 \$46,720	598 \$47,548	492 \$54,445	801 \$56,667	683 \$62,545	266 \$67,855	71 \$62,098	3,138 \$56,208
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	159 \$47,983	465 \$48,652	393 \$53,179	621 \$58,772	489 \$63,508	222 \$73,515	221 \$74,683	2,570 \$58,961
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	125 \$48,975	283 \$45,147	249 \$52,545	340 \$59,610	264 \$64,542	113 \$78,372	262 \$85,343	1,636 \$61,433
Total	0 \$0	0 \$0	0 \$0	3 \$38,253	1 \$48,048	2,185 \$49,903	4,742 \$51,223	3,038 \$55,517	3,591 \$59,217	2,263 \$63,122	684 \$71,068	554 \$78,111	17,061 \$56,746

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, General Employees
As of 06/30/2014**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	1 \$41,040	0 \$0	18 \$38,352	1 \$38,621	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	20 \$38,500
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	181 \$47,193	122 \$44,931	1 \$51,597	0 \$0	0 \$0	0 \$0	0 \$0	304 \$46,300
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	273 \$48,760	436 \$53,081	57 \$44,082	0 \$0	0 \$0	0 \$0	0 \$0	766 \$50,871
40-44	0 \$0	0 \$0	0 \$0	0 \$0	1 \$48,048	263 \$49,773	622 \$51,958	328 \$55,649	136 \$55,167	2 \$45,771	0 \$0	0 \$0	1,352 \$52,739
45-49	0 \$0	0 \$0	0 \$0	1 \$39,518	0 \$0	245 \$46,644	590 \$49,650	414 \$54,575	559 \$57,079	131 \$56,980	1 \$41,421	0 \$0	1,941 \$52,946
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	200 \$44,453	598 \$45,720	433 \$49,639	657 \$57,005	471 \$60,585	76 \$64,530	0 \$0	2,435 \$52,820
55-59	0 \$0	0 \$0	0 \$0	1 \$34,200	0 \$0	184 \$44,471	487 \$43,872	391 \$50,700	668 \$53,622	546 \$59,460	206 \$65,114	61 \$58,132	2,544 \$52,929
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	130 \$45,262	378 \$45,124	306 \$48,246	475 \$52,597	380 \$58,731	170 \$70,227	177 \$71,054	2,016 \$54,326
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	103 \$44,935	229 \$41,152	202 \$47,906	270 \$52,781	188 \$56,587	78 \$70,025	146 \$74,313	1,216 \$53,397
Total	0 \$0	0 \$0	0 \$0	3 \$38,253	1 \$48,048	1,597 \$46,742	3,463 \$47,780	2,132 \$51,205	2,765 \$54,943	1,718 \$59,088	531 \$67,344	384 \$70,240	12,594 \$52,851

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, Teachers
As of 06/30/2014**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.		
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	151 \$56,429	56 \$56,794	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	207 \$56,528
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	152 \$55,836	398 \$57,599	34 \$58,523	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	584 \$57,194
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	87 \$59,568	276 \$59,026	322 \$63,018	28 \$72,111	0 \$0	0 \$0	0 \$0	0 \$0	713 \$61,409
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	68 \$64,749	152 \$63,185	195 \$64,791	264 \$67,703	25 \$70,548	0 \$0	0 \$0	0 \$0	704 \$65,737
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	37 \$58,985	145 \$65,180	120 \$67,259	185 \$74,259	198 \$71,600	6 \$73,193	0 \$0	0 \$0	691 \$69,549
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	42 \$56,577	111 \$63,677	101 \$68,946	133 \$71,964	137 \$74,836	60 \$77,265	10 \$86,289	10 \$89,279	594 \$70,253
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	29 \$60,178	87 \$63,981	87 \$70,531	146 \$78,860	109 \$80,161	52 \$84,266	44 \$89,279	44 \$89,279	554 \$75,828
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	22 \$67,888	54 \$62,085	47 \$72,483	70 \$85,951	76 \$84,220	35 \$96,976	116 \$99,225	116 \$99,225	420 \$84,701
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	588 \$58,487	1,279 \$60,546	906 \$65,666	826 \$73,525	545 \$75,837	153 \$83,994	170 \$95,890	170 \$95,890	4,467 \$67,727

**Distribution of Active Members by Age and by Years of Service
Contributory Members, All
As of 06/30/2014**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.		
Under 25	17 \$55,737	27 \$56,176	5 \$64,150	2 \$62,467	0 \$0	51 \$57,058								
25-29	51 \$54,754	68 \$54,933	64 \$63,437	70 \$67,686	37 \$69,667	82 \$70,151	0 \$0	372 \$63,592						
30-34	30 \$53,486	61 \$55,753	42 \$62,872	50 \$60,802	68 \$69,972	342 \$70,703	71 \$74,519	1 \$74,236	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	665 \$67,654
35-39	19 \$52,608	34 \$54,260	35 \$62,506	43 \$64,489	36 \$69,169	314 \$70,257	325 \$76,423	60 \$83,660	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	866 \$71,839
40-44	15 \$55,850	14 \$55,078	12 \$71,326	15 \$63,666	16 \$67,117	180 \$71,685	396 \$76,401	391 \$86,807	92 \$93,367	0 \$0	0 \$0	0 \$0	0 \$0	1,131 \$79,737
45-49	5 \$48,823	4 \$55,600	6 \$80,516	6 \$65,965	5 \$65,495	75 \$71,884	177 \$76,660	253 \$87,008	385 \$95,366	124 \$107,216	2 \$74,223	0 \$0	0 \$0	1,042 \$89,064
50-54	2 \$116,122	3 \$54,463	3 \$72,620	8 \$63,830	3 \$98,655	29 \$80,826	40 \$78,880	77 \$84,894	257 \$94,517	235 \$104,315	146 \$75,487	0 \$0	0 \$0	803 \$91,260
55-59	1 \$175,032	1 \$185,736	0 \$0	0 \$0	0 \$0	11 \$102,592	16 \$109,975	47 \$88,273	87 \$95,894	112 \$105,759	324 \$78,268	47 \$70,723	47 \$70,723	646 \$87,103
60-64	0 \$0	1 \$57,852	0 \$0	1 \$53,916	2 \$166,334	7 \$68,131	9 \$82,298	17 \$102,366	24 \$105,052	38 \$120,548	165 \$76,943	169 \$77,076	169 \$77,076	433 \$83,662
65 & Over	1 \$57,852	2 \$62,238	1 \$55,440	0 \$0	0 \$0	10 \$80,780	9 \$104,982	10 \$104,393	6 \$113,407	8 \$118,772	62 \$72,416	163 \$80,105	163 \$80,105	272 \$81,661
Total	141 \$55,965	215 \$55,921	168 \$64,413	195 \$64,572	167 \$70,993	1,050 \$71,472	1,043 \$77,231	856 \$87,054	851 \$95,348	517 \$106,740	699 \$76,844	379 \$77,591	379 \$77,591	6,281 \$80,360

**Distribution of Active Members by Age and by Years of Service
Contributory Members, General Employees
As of 06/30/2014**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	3 \$54,568	0 \$0	1 \$57,852	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	4 \$55,389
30-34	0 \$0	2 \$52,926	0 \$0	2 \$53,838	2 \$57,852	4 \$56,563	2 \$54,229	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	12 \$55,328
35-39	0 \$0	3 \$51,284	0 \$0	1 \$57,852	0 \$0	3 \$61,105	9 \$50,566	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	16 \$53,132
40-44	0 \$0	2 \$45,804	1 \$161,401	0 \$0	0 \$0	9 \$92,576	17 \$71,603	8 \$73,208	0 \$0	0 \$0	0 \$0	0 \$0	37 \$78,084
45-49	1 \$27,756	0 \$0	2 \$118,938	1 \$57,852	0 \$0	4 \$89,639	17 \$66,149	11 \$105,555	19 \$78,203	2 \$68,850	2 \$74,223	0 \$0	59 \$80,333
50-54	1 \$175,032	1 \$57,852	0 \$0	3 \$70,067	1 \$161,401	6 \$96,924	4 \$68,168	12 \$72,866	12 \$83,134	18 \$93,953	94 \$58,109	0 \$0	152 \$68,974
55-59	1 \$175,032	1 \$185,736	0 \$0	0 \$0	0 \$0	5 \$132,887	7 \$144,127	7 \$114,752	7 \$111,719	13 \$113,218	189 \$66,195	36 \$62,058	266 \$74,572
60-64	0 \$0	1 \$57,852	0 \$0	0 \$0	2 \$166,334	6 \$67,335	5 \$80,223	10 \$112,419	8 \$121,871	15 \$146,938	122 \$73,637	106 \$68,283	275 \$78,984
65 & Over	1 \$57,852	2 \$62,238	1 \$55,440	0 \$0	0 \$0	10 \$80,780	8 \$101,721	10 \$104,393	5 \$114,619	2 \$92,826	42 \$64,964	98 \$72,344	179 \$75,309
Total	4 \$108,918	15 \$62,729	4 \$113,679	8 \$61,429	5 \$121,954	47 \$86,364	69 \$78,287	58 \$96,423	51 \$94,383	50 \$113,808	449 \$66,445	240 \$69,008	1,000 \$74,885

**Distribution of Active Members by Age and by Years of Service
Contributory Members, Teachers
As of 06/30/2014**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.		
Under 25	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
25-29	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
30-34	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0
35-39	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$48,678	0 \$0	1 \$48,678						
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$70,065	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$70,065
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$73,648	1 \$55,800	0 \$0	0 \$0	0 \$0	0 \$0	2 \$64,724
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$80,658	0 \$0	13 \$78,086	0 \$0	15 \$78,429	
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$151,770	2 \$128,628	0 \$0	70 \$77,190	6 \$83,735	80 \$80,832	
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$92,328	1 \$102,216	36 \$81,646	56 \$88,101	94 \$85,824	
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$196,158	19 \$87,141	60 \$89,251	81 \$91,395	
Total	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$48,678	0 \$0	5 \$103,463	6 \$94,450	3 \$164,844	138 \$79,807	122 \$88,452	275 \$85,206	

**Distribution of Active Members by Age and by Years of Service
Contributory Members, Police and Firefighters
As of 06/30/2014**

Attained Age	Years of Credited Service												Total Count & Avg. Comp.	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.		
Under 25	17 \$55,737	27 \$56,176	5 \$64,150	2 \$62,467	0 #DIV/0!	0 \$0	51 \$57,058							
25-29	51 \$54,754	65 \$54,950	64 \$63,437	69 \$67,829	37 \$69,667	82 \$70,151	0 \$0	368 \$63,681						
30-34	30 \$53,486	59 \$55,849	42 \$62,872	48 \$61,092	66 \$70,339	338 \$70,870	69 \$75,107	1 \$74,236	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	653 \$67,880
35-39	19 \$52,608	31 \$54,548	35 \$62,506	42 \$64,647	36 \$69,169	310 \$70,415	316 \$77,159	60 \$83,660	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	849 \$72,219
40-44	15 \$55,850	12 \$56,624	11 \$63,137	15 \$63,666	16 \$67,117	171 \$70,585	379 \$76,616	381 \$87,180	92 \$93,367	0 \$0	0 \$0	0 \$0	0 \$0	1,092 \$79,811
45-49	4 \$54,090	4 \$55,600	4 \$61,305	5 \$67,588	5 \$65,495	71 \$70,884	160 \$77,777	241 \$86,217	365 \$96,368	122 \$107,845	0 \$0	0 \$0	0 \$0	981 \$89,639
50-54	1 \$57,212	2 \$52,768	3 \$72,620	5 \$60,088	2 \$67,282	23 \$76,626	36 \$80,070	65 \$87,115	243 \$95,193	217 \$105,174	39 \$116,505	0 \$0	0 \$0	636 \$96,889
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	6 \$77,345	9 \$83,412	38 \$80,053	78 \$93,635	99 \$104,780	65 \$114,535	5 \$117,501	5 \$122,029	300 \$99,886
60-64	0 \$0	0 \$0	0 \$0	1 \$53,916	0 \$0	1 \$72,906	4 \$84,892	7 \$88,004	15 \$96,930	22 \$103,387	7 \$110,379	7 \$117,501	7 \$122,029	64 \$100,589
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$131,066	0 \$0	1 \$107,346	4 \$93,052	1 \$105,611	1 \$122,453	5 \$122,453	12 \$110,708
Total	137 \$54,419	200 \$55,410	164 \$63,211	187 \$64,706	162 \$69,420	1,002 \$70,796	974 \$77,156	793 \$86,265	794 \$95,417	464 \$105,603	112 \$114,881	17 \$120,822	17 \$120,822	5,006 \$81,188

**Distribution of Active Members by Age and by Years of Service
Hybrid Plan Members, All
As of 06/30/2014**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	330 \$35,406	208 \$37,752	44 \$36,168	24 \$39,172	3 \$41,901	4 \$38,294	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	613 \$36,455
25-29	819 \$39,982	773 \$42,580	612 \$46,674	353 \$46,957	232 \$47,651	435 \$44,519	1 \$39,293	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3,225 \$43,801
30-34	683 \$43,612	712 \$45,102	586 \$48,196	460 \$50,229	361 \$52,018	2,042 \$49,804	163 \$50,897	1 \$65,731	0 \$0	0 \$0	0 \$0	0 \$0	5,008 \$48,340
35-39	571 \$43,808	559 \$47,714	460 \$52,063	354 \$52,062	270 \$52,245	1,867 \$51,013	1,008 \$56,702	87 \$55,689	2 \$49,776	0 \$0	0 \$0	0 \$0	5,178 \$51,277
40-44	383 \$44,336	432 \$45,203	342 \$54,260	288 \$48,253	207 \$54,193	1,613 \$52,715	1,014 \$58,075	858 \$61,520	218 \$58,637	2 \$42,525	0 \$0	0 \$0	5,357 \$54,088
45-49	349 \$44,232	322 \$44,797	292 \$52,384	239 \$52,506	175 \$50,843	1,406 \$51,669	776 \$56,482	647 \$62,139	1,140 \$65,127	194 \$60,772	0 \$0	0 \$0	5,540 \$55,834
50-54	286 \$44,890	313 \$46,871	248 \$54,982	195 \$56,123	171 \$54,853	1,468 \$49,638	729 \$54,214	522 \$59,962	1,046 \$63,743	1,109 \$68,222	133 \$61,824	1 \$60,744	6,221 \$57,190
55-59	206 \$43,006	279 \$46,170	217 \$52,198	195 \$57,598	141 \$49,915	1,187 \$50,407	739 \$53,983	511 \$58,455	840 \$63,175	935 \$67,708	526 \$72,948	96 \$66,924	5,872 \$58,260
60-64	144 \$50,010	160 \$49,022	154 \$58,990	127 \$58,740	127 \$53,327	910 \$53,811	608 \$54,681	445 \$59,622	662 \$63,399	611 \$70,370	335 \$78,256	374 \$77,487	4,657 \$61,685
65 & Over	48 \$60,032	84 \$57,226	57 \$67,939	62 \$51,806	63 \$54,157	518 \$53,073	339 \$56,727	221 \$62,942	254 \$67,281	211 \$71,612	97 \$88,460	239 \$96,768	2,193 \$65,082
Total	3,819 \$42,793	3,842 \$45,212	3,012 \$51,169	2,297 \$51,521	1,750 \$51,876	11,450 \$50,943	5,377 \$55,812	3,292 \$60,605	4,162 \$63,895	3,062 \$68,239	1,091 \$74,601	710 \$82,525	43,864 \$54,672

**Distribution of Active Members by Age and by Years of Service
Hybrid Plan Members, General Employees
As of 06/30/2014**

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 25	168 \$31,188	117 \$31,830	43 \$36,080	24 \$39,172	3 \$41,901	4 \$38,294	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	359 \$32,686
25-29	502 \$37,932	494 \$40,595	338 \$45,800	182 \$45,554	125 \$46,980	299 \$42,088	1 \$39,293	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,941 \$41,918
30-34	483 \$41,351	510 \$43,120	407 \$46,773	293 \$50,283	201 \$52,568	1,207 \$47,827	102 \$46,591	1 \$65,731	0 \$0	0 \$0	0 \$0	0 \$0	3,204 \$46,456
35-39	380 \$40,566	402 \$46,232	322 \$50,407	244 \$51,573	176 \$51,779	1,281 \$49,309	522 \$54,153	53 \$51,828	2 \$49,776	0 \$0	0 \$0	0 \$0	3,382 \$49,145
40-44	292 \$43,414	327 \$42,244	247 \$51,730	212 \$46,892	131 \$52,875	1,190 \$50,230	670 \$55,855	395 \$57,856	159 \$55,456	2 \$42,525	0 \$0	0 \$0	3,625 \$51,059
45-49	253 \$39,996	253 \$42,082	226 \$50,189	184 \$51,110	132 \$48,701	1,119 \$49,347	574 \$52,675	410 \$59,144	675 \$62,361	159 \$58,812	0 \$0	0 \$0	3,985 \$52,469
50-54	214 \$42,830	252 \$44,201	200 \$53,800	155 \$54,533	124 \$53,099	1,203 \$47,147	576 \$50,985	392 \$56,994	789 \$61,363	698 \$64,517	118 \$60,495	1 \$60,744	4,722 \$54,040
55-59	160 \$40,187	233 \$44,974	181 \$51,953	166 \$56,794	99 \$47,130	984 \$47,281	584 \$50,049	373 \$54,201	660 \$59,808	682 \$64,404	389 \$70,148	77 \$62,601	4,588 \$54,900
60-64	121 \$49,105	129 \$48,330	128 \$59,026	107 \$59,887	89 \$51,580	778 \$51,752	484 \$51,687	330 \$54,700	460 \$57,617	424 \$64,849	231 \$74,456	287 \$73,430	3,568 \$57,829
65 & Over	37 \$62,493	60 \$55,113	49 \$71,419	49 \$51,527	46 \$55,151	434 \$50,149	274 \$52,444	155 \$56,894	171 \$61,359	128 \$62,895	67 \$84,275	131 \$85,145	1,601 \$59,011
Total	2,610 \$40,734	2,777 \$43,203	2,141 \$50,274	1,616 \$51,180	1,126 \$50,986	8,499 \$48,699	3,787 \$52,469	2,109 \$56,587	2,916 \$60,321	2,093 \$63,994	805 \$71,145	496 \$74,817	30,975 \$51,984

**Distribution of Active Members by Age and by Years of Service
Hybrid Plan Members, Teachers
As of 06/30/2014**

Attained Age	Years of Credited Service												Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.		
Under 25	162 \$39,779	91 \$45,366	1 \$39,958	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	254 \$41,782
25-29	317 \$43,227	279 \$46,094	274 \$47,752	171 \$48,450	107 \$48,434	136 \$49,863	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,284 \$46,648
30-34	200 \$49,073	202 \$50,109	179 \$51,432	167 \$50,135	160 \$51,328	835 \$52,663	61 \$58,096	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,804 \$51,688
35-39	191 \$50,259	157 \$51,508	138 \$55,927	110 \$53,146	94 \$53,118	586 \$54,737	486 \$59,440	34 \$61,707	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,796 \$55,292
40-44	91 \$47,294	105 \$54,417	95 \$60,837	76 \$52,047	76 \$56,465	423 \$59,709	344 \$62,397	463 \$64,647	59 \$67,209	0 \$0	0 \$0	0 \$0	0 \$0	1,732 \$60,429
45-49	96 \$55,395	69 \$54,750	66 \$59,900	55 \$57,177	43 \$57,421	287 \$60,721	202 \$67,299	237 \$67,320	465 \$69,143	35 \$69,677	0 \$0	0 \$0	0 \$0	1,555 \$64,456
50-54	72 \$51,011	61 \$57,901	48 \$59,904	40 \$62,284	47 \$59,481	265 \$60,948	153 \$66,371	130 \$68,910	257 \$71,053	411 \$74,516	15 \$72,278	0 \$0	0 \$0	1,499 \$67,113
55-59	46 \$52,809	46 \$52,230	36 \$53,432	29 \$62,198	42 \$56,478	203 \$65,557	155 \$68,808	138 \$69,955	180 \$75,521	253 \$76,616	137 \$80,901	19 \$84,443	19 \$0	1,284 \$70,268
60-64	23 \$54,766	31 \$51,901	26 \$58,815	20 \$52,602	38 \$57,417	132 \$65,948	124 \$66,367	115 \$73,745	202 \$76,567	187 \$82,889	104 \$86,696	87 \$90,872	87 \$0	1,089 \$74,321
65 & Over	11 \$51,755	24 \$62,507	8 \$46,624	13 \$52,855	17 \$51,467	84 \$68,181	65 \$74,779	66 \$77,145	83 \$79,481	83 \$85,055	30 \$97,805	108 \$110,865	108 \$0	592 \$81,500
Total	1,209 \$47,240	1,065 \$50,453	871 \$53,367	681 \$52,332	624 \$53,482	2,951 \$57,406	1,590 \$63,774	1,183 \$67,767	1,246 \$72,259	969 \$77,408	286 \$84,329	214 \$100,391	214 \$0	12,889 \$61,134

Summary of Pensions in Force by Type of Retirement

Employee Group	Contributory		Noncontributory		Hybrid	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
All Employees	21,716	\$ 2,508	13,012	\$ 1,585	4,952	\$ 2,088
	<u>Service</u>		<u>Service</u>		<u>Service</u>	
Total	21,209	\$ 2,538	12,165	\$ 1,637	4,730	\$ 2,128
General Employees - male	4,938	2,282	4,029	1,576	1,380	2,221
General Employees - female	6,960	1,669	4,609	1,217	1,988	1,803
Teachers - male	1,582	3,121	1,178	2,388	416	2,834
Teachers - female	4,491	2,882	2,349	2,189	946	2,365
Police and Firefighters	3,238	4,032	-	-	-	-
	<u>Ordinary Disability</u>		<u>Ordinary Disability</u>		<u>Ordinary Disability</u>	
Total	213	\$ 900	691	\$ 866	195	\$ 1,232
General Employees - male	75	912	330	863	97	1,212
General Employees - female	72	686	280	759	66	1,124
Teachers - male	8	1,407	29	1,368	9	1,250
Teachers - female	27	1,153	52	1,185	23	1,617
Police and Firefighters	31	1,012	-	-	-	-
	<u>Accidental Disability</u>		<u>Accidental Disability</u>		<u>Accidental Disability</u>	
Total	294	\$ 1,557	156	\$ 706	27	\$ 1,224
General Employees - male	108	1,478	91	714	16	1,224
General Employees - female	66	1,310	58	662	9	1,152
Teachers - male	1	1,124	2	813	-	-
Teachers - female	4	2,614	5	1,020	2	1,554
Police and Firefighters	115	1,739	-	-	-	-

Summary of Pensions in Force by Age and Type

General Employees

Age	Type of Pension			
	Total	Service	Ordinary Disability	Accidental Disability
Total	25,172	23,904	920	348
	Contributory			
Total	12,219	11,898	147	174
30-39	-	-	-	-
40-44	4	3	-	1
45-49	5	4	-	1
50-54	36	24	4	8
55-59	360	335	9	16
60-64	863	831	22	10
65-69	1,442	1,394	22	26
70-74	1,673	1,633	17	23
75-79	1,999	1,952	23	24
80-84	2,401	2,355	23	23
85-89	2,109	2,062	16	31
90-94	1,038	1,021	9	8
95-99	260	255	2	3
100 & over	29	29	-	-
	Noncontributory			
Total	9,397	8,638	610	149
30-39	-	-	-	-
40-44	5	-	5	-
45-49	12	1	8	3
50-54	57	4	43	10
55-59	334	213	93	28
60-64	1,257	1,045	188	24
65-69	2,821	2,642	152	27
70-74	2,601	2,478	87	36
75-79	1,409	1,371	27	11
80-84	646	636	5	5
85-89	222	216	2	4
90-94	33	32	-	1
95-99	-	-	-	-
100 & over	-	-	-	-
	Hybrid			
Total	3,556	3,368	163	25
30-39	1	-	-	1
40-44	1	-	-	1
45-49	9	-	9	-
50-54	23	1	19	3
55-59	324	289	29	6
60-64	1,204	1,131	68	5
65-69	1,481	1,444	30	7
70-74	400	392	6	2
75-79	92	90	2	-
80-84	15	15	-	-
85-89	4	4	-	-
90-94	2	2	-	-
95-99	-	-	-	-
100 & over	-	-	-	-

Summary of Pensions in Force by Age and Type

Teachers

Age	Type of Pension			
	Total	Service	Ordinary Disability	Accidental Disability
Total	11,124	10,962	148	14
	Contributory			
Total	6,113	6,073	35	5
30-39	-	-	-	-
40-44	-	-	-	-
45-49	-	-	-	-
50-54	-	-	-	-
55-59	72	70	2	-
60-64	309	307	2	-
65-69	1,053	1,047	6	-
70-74	1,168	1,160	7	1
75-79	1,254	1,249	5	-
80-84	1,223	1,217	3	3
85-89	662	656	5	1
90-94	260	257	3	-
95-99	94	92	2	-
100 & over	18	18	-	-
	Noncontributory			
Total	3,615	3,527	81	7
30-39	-	-	-	-
40-44	-	-	-	-
45-49	3	-	3	-
50-54	7	-	6	1
55-59	38	26	10	2
60-64	341	318	22	1
65-69	1,318	1,291	25	2
70-74	1,160	1,147	13	-
75-79	488	486	2	-
80-84	189	188	-	1
85-89	59	59	-	-
90-94	12	12	-	-
95-99	-	-	-	-
100 & over	-	-	-	-
	Hybrid			
Total	1,396	1,362	32	2
30-39	-	-	-	-
40-44	1	-	1	-
45-49	1	-	1	-
50-54	2	-	2	-
55-59	71	64	6	1
60-64	492	475	17	-
65-69	607	601	5	1
70-74	170	170	-	-
75-79	40	40	-	-
80-84	8	8	-	-
85-89	3	3	-	-
90-94	1	1	-	-
95-99	-	-	-	-
100 & over	-	-	-	-

Summary of Pensions in Force by Age and Type**Police and Firefighters**

Age	Type of Pension			
	Total	Service	Ordinary Disability	Accidental Disability
Total	3,384	3,238	31	115
30-39	-	-	-	-
40-44	4	-	1	3
45-49	52	45	4	3
50-54	225	214	5	6
55-59	475	462	2	11
60-64	718	688	7	23
65-69	803	773	3	27
70-74	546	515	4	27
75-79	315	307	2	6
80-84	138	131	1	6
85-89	65	65	-	-
90-94	37	33	2	2
95-99	6	5	-	1
100 & over	-	-	-	-

Noncontributory Service Pensions in Force
by Years of Service

Years of Service	Total		General Employees		Teachers	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	12,165	\$ 1,633	8,638	\$ 1,380	3,527	\$ 2,252
Less than 5	24	372	19	337	5	508
5-9	122	345	101	310	21	517
10-14	2,495	553	2,088	524	407	701
15-19	1,711	894	1,374	844	337	1,101
20-24	1,765	1,154	1,351	1,072	414	1,420
25-29	1,316	1,736	934	1,559	382	2,172
30-34	2,826	2,418	1,599	2,202	1,227	2,699
35 and over	1,906	3,043	1,172	2,767	734	3,482

Noncontributory Service Pensions in Force
by Years Since Retirement

Years Since Retirement	Total		General Employees		Teachers	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	12,165	\$ 1,637	8,638	\$ 1,385	3,527	\$ 2,255
Less than 5	3,469	1,499	2,647	1,322	822	2,068
5-9	3,723	1,630	2,676	1,407	1,047	2,200
10-14	3,050	1,744	2,030	1,412	1,020	2,405
15-19	1,563	1,742	1,070	1,438	493	2,401
20-24	328	1,734	196	1,400	132	2,229
25 and over	32	1,147	19	819	13	1,627

**Contributory Service Pensions in Force
by Years of Service**

Years of Service	Total		General Employees		Teachers		Police and Firefighters	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	21,209	\$ 2,538	11,898	\$ 1,923	6,073	\$ 2,944	3,238	\$ 4,032
Less than 5	57	644	40	475	12	1,128	5	834
5-9	748	376	600	397	142	276	6	563
10-14	1,435	699	1,191	690	198	669	46	1,076
15-19	1,841	1,139	1,491	1,086	294	1,280	56	1,825
20-24	2,547	1,633	1,882	1,465	529	1,943	136	2,747
25-29	6,357	2,750	2,828	2,110	1,620	2,683	1,909	3,754
30-34	5,875	3,378	2,441	2,785	2,458	3,361	976	4,907
35 and over	2,349	3,795	1,425	3,274	820	4,491	104	5,439

Hybrid Service Pensions in Force**by Years of Service**

Years of Service	Total		General Employees		Teachers	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	4,730	\$ 2,128	3,368	\$ 1,974	1,362	\$ 2,508
Less than 5	44	333	36	337	8	315
5-9	483	578	398	568	85	628
10-14	500	847	375	826	125	911
15-19	528	1,229	361	1,148	167	1,403
20-24	780	1,576	533	1,448	247	1,852
25-29	543	2,173	382	2,027	161	2,519
30-34	974	3,035	700	2,943	274	3,270
35 and over	878	3,797	583	3,570	295	4,247

**Contributory Service Pensions in Force
by Years Since Retirement**

Years Since Retirement	Total		General Employees		Teachers		Police and Firefighters	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	21,209	\$ 2,538	11,898	\$ 1,923	6,073	\$ 2,944	3,238	\$ 4,032
Less than 5	1,939	3,926	932	2,925	314	4,250	693	5,126
5-9	2,608	3,330	1,339	2,528	689	3,762	580	4,669
10-14	3,388	2,954	1,664	2,286	1,072	3,457	652	3,830
15-19	4,063	2,698	2,198	2,153	1,237	3,150	628	3,715
20-24	3,737	2,182	2,175	1,691	1,209	2,754	353	3,251
25-29	3,208	1,704	1,986	1,389	1,020	2,125	202	2,672
30-34	1,653	1,369	1,213	1,195	379	1,750	61	2,476
35 and over	613	1,089	391	901	153	1,238	69	1,829

Hybrid Service Pensions in Force

by Years Since Retirement

Years Since Retirement	Total		General Employees		Teachers	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	4,730	\$ 2,128	3,368	\$ 1,974	1,362	\$ 2,508
Less than 5	3,629	2,164	2,613	2,021	1,016	2,534
5-9	1,101	2,007	755	1,813	346	2,431

Pensions in Force by Payment Option

General Employees

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	25,172	\$ 1,696	23,904	\$ 1,736	920	\$ 877	348	\$ 1,090	-	\$ -
Contributory										
Total	12,219	\$ 1,903	11,898	\$ 1,923	147	\$ 802	174	\$ 1,414	-	\$ -
Maximum	1,548	1,938	1,513	1,957	19	1,185	16	1,008	-	-
Option 1	776	1,340	735	1,360	23	832	18	1,145	-	-
Option 2	686	2,280	658	2,314	10	1,293	18	1,584	-	-
Option 3	356	2,873	347	2,906	5	987	4	2,367	-	-
Option 4	5,129	2,153	5,004	2,176	49	768	76	1,513	-	-
Option 5	3,724	1,499	3,641	1,512	41	505	42	1,342	-	-
Noncontributory										
Total	9,397	\$ 1,337	8,638	\$ 1,385	610	\$ 815	149	\$ 694	-	\$ -
Maximum	5,095	1,339	4,786	1,374	232	815	77	707	-	-
Option A	1,822	1,439	1,703	1,475	95	964	24	727	-	-
Option B	1,945	1,221	1,659	1,304	244	751	42	677	-	-
Option C	535	1,389	490	1,442	39	850	6	515	-	-
Hybrid										
Total	3,556	\$ 1,932	3,368	\$ 1,974	163	\$ 1,177	25	\$ 1,198	-	\$ -
Maximum	1,368	1,832	1,323	1,853	36	1,201	9	1,256	-	-
Option 1	262	1,828	248	1,853	12	1,406	2	1,209	-	-
Option 2	787	1,869	708	1,951	68	1,119	11	1,182	-	-
Option 3	538	2,371	521	2,411	14	1,155	3	1,078	-	-
Option 4	389	2,100	368	2,148	21	1,265	-	-	-	-
Option 5	212	1,524	200	1,551	12	1,071	-	-	-	-

Pensions in Force by Payment Option

Teachers

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	11,124	\$ 2,649	10,962	\$ 2,668	148	\$ 1,298	14	\$ 1,529	-	\$ -
Contributory										
Total	6,113	\$ 2,934	6,073	\$ 2,944	35	\$ 1,211	5	\$ 2,316	-	\$ -
Maximum	879	3,260	871	3,277	8	1,483	-	-	-	-
Option 1	295	2,334	291	2,354	3	975	1	403	-	-
Option 2	218	3,054	218	3,054	-	-	-	-	-	-
Option 3	155	3,811	152	3,847	2	2,386	1	1,124	-	-
Option 4	2,367	3,283	2,354	3,293	11	1,298	2	2,757	-	-
Option 5	2,199	2,433	2,187	2,441	11	779	1	4,540	-	-
Noncontributory										
Total	3,615	\$ 2,230	3,527	\$ 2,255	81	\$ 1,250	7	\$ 961	-	\$ -
Maximum	2,347	2,290	2,292	2,315	50	1,282	5	1,049	-	-
Option A	597	2,309	590	2,321	6	1,321	1	1,096	-	-
Option B	479	1,887	456	1,925	22	1,174	1	382	-	-
Option C	192	2,110	189	2,126	3	1,130	-	-	-	-
Hybrid										
Total	1,396	\$ 2,484	1,362	\$ 2,508	32	\$ 1,513	2	\$ 1,554	-	\$ -
Maximum	597	2,390	587	2,404	10	1,544	-	-	-	-
Option 1	80	2,377	76	2,407	4	1,809	-	-	-	-
Option 2	287	2,304	279	2,328	6	1,460	2	1,554	-	-
Option 3	218	2,928	213	2,964	5	1,418	-	-	-	-
Option 4	112	2,768	107	2,838	5	1,279	-	-	-	-
Option 5	102	2,360	100	2,372	2	1,754	-	-	-	-

Pensions in Force by Payment Option

Police and Firefighters

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	3,384	\$ 3,926	3,238	\$ 4,032	31	\$ 1,012	115	\$ 1,739	-	\$ -
Maximum	104	3,678	86	4,063	-	-	18	1,841	-	-
Option 1	34	3,936	27	4,226	1	2,335	6	2,895	-	-
Option 2	126	4,000	112	4,268	7	1,491	7	2,217	-	-
Option 3	44	4,302	40	4,554	2	1,228	2	2,334	-	-
Option 4	1,995	4,340	1,952	4,400	12	979	31	1,822	-	-
Option 5	1,081	3,163	1,021	3,274	9	489	51	1,427	-	-

Pensions in Force by Payment Option

General Employees - New Retirees

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	1,363	\$ 1,494	1,291	\$ 1,512	64	\$ 1,104	8	\$ 1,603	-	\$ -
Contributory										
Total	132	\$ 2,595	129	\$ 2,610	1	\$ 1,245	2	\$ 2,282	-	\$ -
Maximum	25	2,549	25	2,549	-	-	-	-	-	-
Option 1	2	1,964	2	1,964	-	-	-	-	-	-
Option 2	15	2,934	14	2,973	-	-	1	2,386	-	-
Option 3	16	2,327	15	2,337	-	-	1	2,179	-	-
Option 4	64	2,730	63	2,753	1	1,245	-	-	-	-
Option 5	10	1,890	10	1,890	-	-	-	-	-	-
Noncontributory										
Total	601	\$ 1,153	562	\$ 1,160	34	\$ 1,017	5	\$ 1,357	-	\$ -
Maximum	301	1,071	292	1,082	8	676	1	989	-	-
Option A	129	1,335	121	1,353	6	916	2	1,525	-	-
Option B	139	1,223	121	1,231	16	1,143	2	1,371	-	-
Option C	32	892	28	828	4	1,345	-	-	-	-
Hybrid										
Total	630	\$ 1,587	600	\$ 1,606	29	\$ 1,202	1	\$ 1,473	-	\$ -
Maximum	245	1,542	240	1,551	4	1,036	1	1,473	-	-
Option 1	48	1,580	43	1,611	5	1,313	-	-	-	-
Option 2	121	1,566	113	1,604	8	1,027	-	-	-	-
Option 3	92	1,822	91	1,835	1	628	-	-	-	-
Option 4	70	1,624	62	1,652	8	1,402	-	-	-	-
Option 5	54	1,400	51	1,402	3	1,367	-	-	-	-

Pensions in Force by Payment Option

Teachers - New Retirees

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	468	\$ 2,224	463	\$ 2,236	4	\$ 964	1	\$ -	-	\$ -
Contributory										
Total	53	\$ 3,853	53	\$ 3,853	-	\$ -	-	\$ -	-	\$ -
Maximum	7	4,857	7	4,857	-	-	-	-	-	-
Option 1	-	-	-	-	-	-	-	-	-	-
Option 2	6	4,166	6	4,166	-	-	-	-	-	-
Option 3	4	2,048	4	2,048	-	-	-	-	-	-
Option 4	29	3,974	29	3,974	-	-	-	-	-	-
Option 5	7	3,111	7	3,111	-	-	-	-	-	-
Noncontributory										
Total	171	\$ 1,726	167	\$ 1,740	3	\$ 920	1	\$ 1,862	-	\$ -
Maximum	113	1,632	110	1,639	2	1,099	1	1,862	-	-
Option A	35	2,021	35	2,021	-	-	-	-	-	-
Option B	20	1,833	19	1,900	1	561	-	-	-	-
Option C	3	1,137	3	1,137	-	-	-	-	-	-
Hybrid										
Total	244	\$ 2,219	243	\$ 2,224	1	\$ 1,096	-	\$ -	-	\$ -
Maximum	106	2,097	106	2,097	-	-	-	-	-	-
Option 1	10	2,612	10	2,612	-	-	-	-	-	-
Option 2	48	1,947	48	1,947	-	-	-	-	-	-
Option 3	34	3,106	34	3,106	-	-	-	-	-	-
Option 4	22	2,294	21	2,351	1	1,096	-	-	-	-
Option 5	24	1,812	24	1,812	-	-	-	-	-	-

Pensions in Force by Payment Option

Police and Firefighters - New Retirees

Type of Option	Total		Service		Ordinary Disability		Accidental Disability		Other	
	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension	Number	Average Monthly Pension
Total	141	\$ 4,642	140	\$ 4,645	-	\$ -	1	\$ 4,170	-	\$ -
Maximum	12	4,027	12	4,027	-	-	-	-	-	-
Option 1	1	4,891	1	4,891	-	-	-	-	-	-
Option 2	12	4,994	12	4,994	-	-	-	-	-	-
Option 3	9	4,474	9	4,474	-	-	-	-	-	-
Option 4	90	4,910	89	4,919	-	-	1	4,170	-	-
Option 5	17	3,480	17	3,480	-	-	-	-	-	-

SECTION N

DEFINITION OF ACTUARIAL TERMS

Definition of Actuarial Terms

1. *Actuarial Accrued Liability* – for benefits payable in the future to present members, it will equal the present value of benefits payable in the future to them less the present value of future normal costs.
2. *Actuarial Assumptions* – assumptions as to future experience under the ERS. Current actuarial assumptions are detailed in Table 21 of the current annual valuation report. Assumptions include future fund earnings rate, rates of future salary increases, and rates of death (both before and after retirement), disability, retirement, and withdrawal.
3. *Actuarial Gain or Actuarial Loss* - a measure of the difference between actual experience and assumed experience of the ERS. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, actuarial liabilities emerge which may be the same as forecasted, or they may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the ERS's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
4. *Actuarial Liabilities* - the actuarially determined present value of future benefits to be provided by the ERS. There are separate actuarially determined present values for retired members and non-retired members (either active or inactive). When applied to active members, it takes into account benefits which will be earned through future service and future salary increases.
5. *Actuarial Value of Present Assets* - the value of present ERS assets for valuation purposes. This value is calculated under a four-year phase-in of the excess (shortfall) between expected and actual income return.
6. *Actuarially Determined* - values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
7. *Decrement* - those types of activities by members of the ERS which cause them no longer to be members, i.e., death, retirement, disability, and withdrawal. It is a general term referring to any or all of these membership-terminating events.

8. *Defined Benefits* - in a retirement plan, benefits which are defined by a specific formula applied to specific member compensation and/or specific years of service. The amount of the benefit is not a function of contributions or actual earnings on those contributions.
9. *Defined Contributions* - in a retirement plan, periodic contributions to the plan which are defined as a specific percent of compensation.
10. *Experience Study* - a periodic review and analysis of the actual experience of the ERS which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
11. *Funding Period* - the number of years in the future that will be required to fund (i.e., pay off or eliminate) the unfunded actuarial accrued liability, based on the actuarial assumptions and assuming no future actuarial gains or losses.
12. *Future Benefits* - benefits specified in the law which will become payable at some time in the future when the member satisfies the requirement to receive such benefits.
13. *Future Contributions* - contributions to be made by the member or the employers in the future.
14. *Normal Cost* - the actuarial cost to fund the benefits provided by the ERS were the funding to begin at date of hire.
15. *Present Value* - the actuarially determined lump sum value as of the valuation date of a series of payments to be made in the future, where the lump sum value is equal to the sum of the discounted value of each future payment. The discounted value of each payment is the product of (a) the amount of the payment, (b) the probability that the payment will be made (based on the current actuarial assumptions as to future experience), and (c) the time value of money (based on the current assumed interest rate).
16. *Unfunded Actuarial Accrued Liability* - that portion of the actuarial accrued liability (including the present value of benefits presently being paid to retired members) that exceeds the value of current assets.
17. *Covered Payroll* - the total annualized payroll of active members as of the valuation date. Used to project individual members pay and benefits.
18. *Projected Payroll for Contributions Purposes* - The aggregate projected payroll for the fiscal year following the valuation date is calculated by increasing the actual payroll paid during the previous fiscal year by the payroll growth rate and multiplying by the ratio of current active members to the average number of active members during the previous fiscal year.