

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

REPORT TO BOARD OF TRUSTEES ON THE 85TH ANNUAL
ACTUARIAL VALUATION

FOR THE YEAR BEGINNING JUNE 30, 2010

December 20, 2010

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, 2010

We certify that the information contained in the 2010 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, 2010.

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. In addition, the report provides information required by ERS in connection with Governmental Accounting Standards Board Statement No. 25 (GASB No. 25), and it 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 actuarial accrued liability, the unfunded actuarial accrued liability (UAAL), and the calculation of the resulting funding period illustrate the progress toward the realization of financing objectives. Like most pension funds across the country, the System was significantly impacted by the severe downturn in the investment markets during fiscal year 2009. Based on this actuarial valuation as of June 30, 2010, ERS's underfunded status has increased significantly because of continued recognition of these market investment losses. However, the System had a partially offsetting liability experience gain which was caused primarily by lower than expected salary increases. The UAAL is now \$7.138 billion.

The Legislature last increased the employer contribution rates to 19.70% for Police and Fire employees and 15.00% for All Other Employees, effective July 1, 2008. Based on these contribution rates and the current Employee contribution levels, the remaining amortization period is 41.3 years. Because this period is greater than 30 years, the financing objectives of ERS are currently not 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. Therefore, the Board will need to consider requesting an increase in the employer contribution rates to bring the funding period down to 30 years.

In addition, only half of the investment losses from fiscal year 2009 have been recognized in this valuation. As the remainder of the losses are recognized in future valuations it is likely that the current funding period will extend further and contribution increases may be required. The Board may want to consider the impact of these future losses when requesting a contribution rate increase. Otherwise it is likely that the Board will need to go back to the Legislature in the near future for another increase as the losses are fully recognized.

BENEFIT PROVISIONS AND LEGISLATIVE CHANGES

There was no legislation enacted that impacted the benefit provisions of the System. See Table 16 of this report for more details on the benefit provisions of the System.

ASSUMPTIONS AND METHODS

The actuarial assumptions used were adopted by the Board on August 14, 2006 based on the recommendations provided by an Experience Study performed by us. While the current investment return assumption is the assumption recommended in the Study, the assumption is actually set by legislative action. 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. These assumptions are also in full compliance with all parameters established by GASB No. 25.

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, 2010, 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.

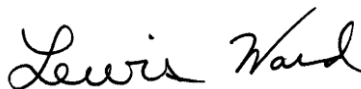
Tables and schedules in the Actuarial Section of the CAFR were generally prepared directly by the Actuary. Certain of these tables, however, were prepared by ERS utilizing information from this report. When those tables were prepared by ERS from our report, they are so noted.

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 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.

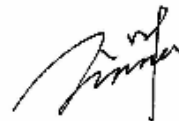
Sincerely,



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



Lewis Ward
Consultant



Linna Ye, ASA
Actuary

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

The following table summarizes the key results of the June 30, 2010 actuarial valuation of the Employees' Retirement System of the State of Hawaii (ERS).

Item	2010	2009
Membership		
• Number of		
- Active members	65,890	67,912
- Retirees and beneficiaries	38,441	36,999
- Inactive, vested	6,895	6,016
- Total	111,226	110,927
• Covered payroll for active members	\$3,713.6 million	\$3,838.0 million
• Actual benefit payments and refunds	\$914.1 million	\$842.6 million
Assets		
• Actuarial value	\$11,345.6 million	\$11,400.1 million
• Market value	\$9,821.6 million	\$8,818.0 million
• Return on actuarial value	(0.4%)	0.9%
• Return on market value	11.5%	(18.0%)
• Employer contributions during fiscal year	\$547,612,717	\$578,635,281
• External cash flow %	(0.2%)	(1.0%)
Actuarial Information		
• Total normal cost % (employee + employer)	12.60%	12.55%
• Unfunded actuarial accrued liability (UAAL)	\$7,138.1 million	\$6,236.3 million
• Funded ratio (based on actuarial assets)	61.4%	64.6%
• Funded ratio (based on market assets)	53.1%	50.0%
• Funding period (years)	41.3	28.2
• Employer contribution rate % of projected payroll*		
For FY 2011 & Beyond	15.49%	15.47%
• GASB ARC for FY 2011 % of projected payroll		
Police & Fire Employees	22.33%	19.91%
All Other Employees	16.23%	14.62%
Composite - All Employees	16.90%	15.17%

* Weighted average of 19.70% Contribution Rate for Police and Firefighters and 15.00% Contribution Rate for All Other Employees beginning July 1, 2008.

SECTION B

INTRODUCTION

Introduction

The results of the June 30, 2010 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. In addition, this report presents information required by ERS in connection with Governmental Accounting Standards Board Statement No. 25 (GASB No. 25).

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.

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 funding policy of ERS uses a method of determining the amortization period that would amortize the UAAL using a fixed contribution rate.

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 \$21.5 billion. Table 2 shows the development of this total for the current year and the prior year.
- The 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 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 18.80% of pay for Police and Fire employees and 11.84% for All Other employees. It includes all of the employees' contribution (if any) and the employers' normal cost rate. This may be thought of as the total (member plus employer) contribution rate needed to pay for the average new member over their career.
- A part of the normal cost is paid by the employee contributions of 12.20% of pay for Police and Firefighters, leaving 6.60% of pay to be funded by the employers. Thus the current year's employer normal cost for Police and Firefighters is deemed to be 6.60% of the valuation payroll. As for the All Other Employees group, the average weighted effective employee contribution rate is 6.05% of pay, leaving 5.79% of pay to be funded by the employers. This is shown in Line 3 of Table 1.

- The UAAL is \$7.138 billion for 2010, an increase from \$6.236 billion in 2009. As indicated in Table 1, the UAAL equals the difference between the total actuarial accrued liability (Item 7) and current actuarial assets (Item 8). A portion of the contribution rate will be used to amortize the UAAL. This amortization percentage is equal to the difference between the total employer contribution rate and the employer normal cost rate. For Police and Fire employees, this percentage is equal to 13.10% (19.70% - 6.60%). For the All Other employees, this percentage is equal to 9.21% (15.00% - 5.79%).
- 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. GASB Statement No. 25 requires that the payroll growth assumption not consider growth in the active employee census. The GASB 25 compliant payroll growth assumption is 3.50%.
- As shown in Item 10 of Table 1 and using the assumed rate of increase in covered payroll of 3.50%, the period to fund the UAAL is 47.2 years for Police and Fire and 40.0 years for the All Other Employees group. The aggregate funding period for ERS is 41.3 years.
- Since the aggregate funding period based on the contribution rates is more than 30 years, the rates are not adequate to meet the requirements of GASB No. 25. Furthermore, 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. Therefore, the Board will need to consider requesting an increase in the employer contribution rates to bring the funding period down to 30 years. The 30 year rate is 22.33% for Police and Fire and 16.23% for All Other Employees.
- We think it is important to note that over \$1.5 billion in investment losses are still being deferred to future valuations. Without significant investment gains in the near future, the funded position of ERS will decline and the 30 year contribution rates increase. Because of this we urge strong caution when discussing contribution rate reductions or benefit enhancements.

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

SECTION D

ANALYSIS OF CHANGES

Analysis of Changes

Section C has noted that the unfunded actuarial accrued liability (UAAL) is \$7.138 billion as of June 30, 2010 compared to the \$6.236 billion UAAL for 2009.

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 8%.

As shown in Item 5 of Table 9b, the expected value of actuarial assets as of June 30, 2010 is \$12.305 billion. As developed in Table 6, the actual value of actuarial assets as of the valuation date is \$11.346 billion (as repeated in Item 6 of Table 9b). Thus the asset loss for the year is the difference between the actual value and the expected value, or \$959.8 million (as shown in Item 7). This asset loss for the year is a direct reflection of the estimated yield for the year based on the value of actuarial assets, namely -0.42% (as shown in Item B4 of Table 7).

The actuarial asset valuation method is intended to smooth out year-to-year fluctuations in the market return. The excess or shortfall in the actual return during the year, compared to the 8% investment return assumption, is spread over this valuation and the next three valuations.

While there was some recovery in the financial markets with an 11.46% return in FY2010, the market return of -18.0% from FY2009 was very unfavorable. The rate of return for the actuarial value was -0.42%, which is much less than the market return because of the four-year smoothing technique. The actuarial value of assets exceeds the market value of assets by \$1,524 million, so there are \$1,524 million in deferred investment losses to be recognized over the next two years. Please note that as of the last valuation there was over \$2,500 million in deferred losses, so about \$1 billion in investment losses were recognized in this valuation.

Table 9a indicates that the total actuarial experience loss for the 2009/2010 plan year was \$721.3 million (Item 7). As noted above, the actuarial investment loss was equal to \$959.8 million. This means that there was a liability experience gain during the year equal to \$238.5 million. As shown in Item 9, this liability experience gain is primarily due to actual salary increases being less the current salary scale assumption.

Table 9c traces the forces changing the UAAL, the funding period, and the GASB ARC (30-year funding) from the last valuation to this valuation. As may be seen from this table, the experience of the System increased the funding period by more than 14 years from the expected funding period of 27.0 years, while the 30-year ARC increased by 1.7% of pay over the 30-year ARC from last year's valuation.

SECTION E
ERS ASSETS

ERS Assets

Table 4 presents a summary of the market value of assets held by the ERS. About 68% of the assets are held in equities (including alternative investments) and real estate compared with 63% 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 phases in differences between actual and expected earnings at 25% per year. (Expected earnings are now determined using market value and the 8.00% investment return assumption. Actual earnings are net of all investment and administrative expenses.)

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 11.46%, the return on the actuarial value was -0.42%. 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 8%.

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 no benefit changes passed since the last valuation that had an actuarial impact on the valuation.

Legislation was enacted in fiscal year 2007 to increase the employer contribution rates to the System. Effective July 1, 2008, the employer contribution rate for Police and Fire employees increased from 15.75% to 19.70% and the rate for All Other employees increased from 13.75% to 15.00%.

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 37,000 members. The Hybrid Plan provisions have been reflected in the results of this report.

SECTION G

GASB NO. 25 DISCLOSURE

GASB No. 25 Disclosure

Governmental Accounting Standards Board (GASB) Statement No. 25 governs reporting for government-sponsored retirement plans.

This report includes Tables 11a, 11b, and 11c--showing information required to be reported 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.

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, and the new salary scale assumption effective June 30, 2007.

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 (other than the investment return assumption), taking into account the actuary's recommendations. The investment return assumption is set by statute.

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. This method produces a relatively level pattern of funding over time, and thereby provides equity among various generations of taxpayers. We continue to believe this method is appropriate for ERS.

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 2010, 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 decreased by 2,022 members from 67,912 to 65,890. These 65,890 active members are distributed as follows:

Category	Number	% of Total
(1)	(2)	(3)
Police & Fire	4,940	7.5%
Contributory	2,095	3.2%
Noncontributory	21,268	32.3%
Hybrid Plan	<u>37,587</u>	<u>57.0%</u>
Total	65,890	100.00%

Total payroll decreased 3.3% since last year. The salary figures reported this year were less than the prior year for many employees. This was a result of the furlough days that occurred in fiscal year 2010 (and are occurring again in fiscal year 2011). These reductions in pay should be temporary and compensation levels will return to normal when the furloughs end. Because we use the reported pay in projecting both the future benefits of active employees and the future contributions to the System, it is very important that we use a compensation amount that projects out into the future at a level that is expected. Using the artificially lowered pays as a result of the furloughs would result in an understatement of the projected future benefits (as well as future

contributions). For that reason, for this valuation we used the greater of the reported pay from the prior valuation and the reported pay for this valuation. This figure is then increased by one year's pay increase to determine the member's rate of pay at July 1, 2010.

Average age and average service of the active members both increased this year. Average age increased from 46.8 years to 47.1 years, while average service increased from 12.9 years to 13.2 years. These increases were due to the limited number of new hires replacing those members who retired or terminated during the year.

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, 2010, 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. However, the margin for error is currently not large and if all assumptions are not met, the contribution requirements will need to increase. The funding period is greater than the 25-year period preferred by the Board and the 30-year maximum period specified by Hawaii Revised Statute 88-122(e)(1) and GASB No. 25, but is a determinable number at 41.3 years.

There are \$1,524 million in unrecognized investment losses as of the valuation date that are being deferred into the next following two actuarial valuations under the actuarial asset valuation method. In the absence of offsetting gains during the next two plan years, the funded position of the plan should decline. It should be noted that there were unrecognized investment losses in the amount of \$2,532 million as of June 30, 2009. Hence, during the last year the System has seen a decrease in the amount of deferred investment losses of approximately \$1 billion.

In our opinion, the results of the actuarial valuation of the Employees' Retirement System of the State of Hawaii as of June 30, 2010, are mixed. On the positive side, the System still has a finite funding period and the current combination of contribution levels and benefits are expected to be sustainable. In addition, the funded ratio based on the market value of assets increased since the prior valuation.

However, there are also several discouraging results and outlooks. The key ones are as follow:

- The actuarial asset method is now deferring \$1,524 million in deferred investment losses.
- The funded ratio based on the market value of assets is 53.2%.
- The current economic condition in the State, especially for furloughs and levels of employment, are uncommonly uncertain. The overall levels of membership and payroll have direct impact on amount of contributions into the System. If payroll does not grow, then the contribution levels will not grow as anticipated.

We will be closely monitoring these outlooks over the next few valuations and will be proactive in making recommendations as necessary.

SECTION K

ACTUARIAL CERTIFICATION STATEMENT

Actuarial Certification Statement

	Police and Firefighters June 30, 2010 (1)	All Other Employees June 30, 2010 (2)	All Employees June 30, 2010 (3)
1. Gross normal cost as a percentage of pay	18.80%	11.84%	12.60%
2. Present value of future benefits			
a. Active employees	\$ 2,288,177,307	\$ 9,611,014,281	\$ 11,899,191,588
b. Inactive members	26,915,476	335,010,487	361,925,963
c. Pensioners and beneficiaries	1,477,586,248	7,781,839,650	9,259,425,898
d. Total	<u>\$ 3,792,679,031</u>	<u>\$ 17,727,864,418</u>	<u>\$ 21,520,543,449</u>
3. Present value of future employee and employer contributions			
a. Present value of future normal costs	\$ 658,321,179	\$ 2,378,553,679	\$ 3,036,874,858
b. Present value of future employee contributions	427,872,784	1,007,607,111	1,435,479,895
c. Present value of future employer normal costs (Item 3a - Item 3b)	\$ 230,448,395	\$ 1,370,946,568	\$ 1,601,394,963
4. Actuarial accrued liability (Item 2d - Item 3a)	\$ 3,134,357,852	\$ 15,349,310,739	\$ 18,483,668,591
5. Actuarial value of assets			
a. Annuity Savings Fund	\$ 723,977,600	\$ 829,405,400	\$ 1,553,383,000
b. Pension Accumulation Fund	1,335,873,070	8,456,361,937	9,792,235,006
c. Total	<u>\$ 2,059,850,670</u>	<u>\$ 9,285,767,337</u>	<u>\$ 11,345,618,006</u>
6. Unfunded actuarial accrued liability	\$ 1,074,507,182	\$ 6,063,543,403	\$ 7,138,050,585
7. Adequacy of contribution rates			
a. Statutory Contribution Rate for Fiscal Year Fiscal Year 2011	19.70%	15.00%	15.49%
b. Funding Period in years as of June 30, 2010	47.2	40.0	41.3
8. GASB Annual Required Contribution	22.33%	16.23%	16.90%

Actuarial Certification Statement

The actuarial valuation as of June 30, 2010 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 August 14, 2006 based on statutory requirements and on the actuary's actuarial experience investigation report covering the five-year period July 1, 2000 – June 30, 2005. 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
Senior Consultant & Actuary

SECTION L

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Development of Employer Cost

	Police and Firefighters June 30, 2010 (1)	All Other Employees June 30, 2010 (2)	All Employees June 30, 2010 (3)
1. Payroll (adjusted for one year's pay increase)	\$ 409,981,764	\$ 3,485,680,056	\$ 3,895,661,820
2. Gross normal cost (Table 3)	18.80%	11.84%	12.60%
3. Employer normal cost rate (Table 3)	6.60%	5.79%	5.90%
4. Present value future benefits (Table 2)	\$ 3,792,679,031	\$ 17,727,864,418	\$ 21,520,543,449
5. Present value future employer normal cost	\$ 230,448,395	\$ 1,370,946,568	\$ 1,601,394,963
6. Present value future employee contributions	\$ 427,872,784	\$ 1,007,607,111	\$ 1,435,479,895
7. Actuarial accrued liability (Item 4 - Item 5 - Item 6)	\$ 3,134,357,852	\$ 15,349,310,739	\$ 18,483,668,591
8. Actuarial value of assets	\$ 2,059,850,670	\$ 9,285,767,336	\$ 11,345,618,006
9. Unfunded actuarial accrued liability (UAAL) (Item 7 - Item 8)	\$ 1,074,507,182	\$ 6,063,543,403	\$ 7,138,050,585
10. Funding Period			
a. Statutory Contribution Rate Beginning July 1, 2010	19.70%	15.00%	15.49%
b. Less Employer normal cost	<u>-6.60%</u>	<u>-5.79%</u>	<u>-5.90%</u>
c. Employer Amortization payment (level %) (Item 10a + Item 10b)	13.10%	9.21%	9.59%
d. Funding Period in years	47.2	40.0	41.3

	Police and Firefighters June 30, 2009 (1)	All Other Employees June 30, 2009 (2)	All Employees June 30, 2009 (3)
1. Payroll (adjusted for one year's pay increase)	\$ 405,782,581	\$ 3,624,338,479	\$ 4,030,121,060
2. Gross normal cost (Table 3)	18.79%	11.83%	12.55%
3. Employer normal cost rate (Table 3)	6.59%	5.78%	5.88%
4. Present value future benefits (Table 2)	\$ 3,647,344,711	\$ 17,101,974,103	\$ 20,749,318,814
5. Present value future employer normal cost	\$ 230,119,497	\$ 1,428,476,219	\$ 1,658,595,716
6. Present value future employee contributions	\$ 427,691,434	\$ 1,026,599,348	\$ 1,454,290,782
7. Actuarial accrued liability (Item 4 - Item 5 - Item 6)	\$ 2,989,533,780	\$ 14,646,898,536	\$ 17,636,432,316
8. Actuarial value of assets	\$ 2,089,092,480	\$ 9,311,024,394	\$ 11,400,116,874
9. Unfunded actuarial accrued liability (UAAL) (Item 7 - Item 8)	\$ 900,441,300	\$ 5,335,874,142	\$ 6,236,315,442
10. Funding Period			
a. Statutory Contribution Rate Beginning July 1, 2009	19.70%	15.00%	15.47%
b. Less Employer normal cost	<u>-6.59%</u>	<u>-5.78%</u>	<u>-5.88%</u>
c. Employer Amortization payment (level %) (Item 10a + Item 10b)	13.11%	9.22%	9.59%
d. Funding Period in years	31.0	27.6	28.2

Actuarial Present Value of Future Benefits

	Police and Firefighters June 30, 2010 (1)	All Other Employees June 30, 2010 (2)	All Employees June 30, 2010 (3)
1. Active members			
a. Service retirement benefits	\$ 2,172,339,539	\$ 8,704,119,614	\$ 10,876,459,153
b. Termination Benefits	74,687,019	702,394,185	777,081,204
c. Survivor benefits	31,229,521	123,661,071	154,890,592
d. Disability retirement benefits	9,921,228	80,839,411	90,760,639
e. Total	<u>\$ 2,288,177,307</u>	<u>\$ 9,611,014,281</u>	<u>\$ 11,899,191,588</u>
2. Retired members			
a. Service retirement	\$ 1,389,258,142	\$ 7,321,907,514	\$ 8,711,165,656
b. Disability retirement	26,828,669	135,756,765	162,585,434
c. Beneficiaries	61,499,437	324,175,371	385,674,808
d. Total	<u>\$ 1,477,586,248</u>	<u>\$ 7,781,839,650</u>	<u>\$ 9,259,425,898</u>
3. Inactive members			
a. Vested terminations	\$ 24,076,211	\$ 318,021,167	\$ 342,097,378
b. Nonvested terminations	2,839,265	16,989,320	19,828,585
c. Total	<u>\$ 26,915,476</u>	<u>\$ 335,010,487</u>	<u>\$ 361,925,963</u>
4. Total actuarial present value of future benefits	<u>\$ 3,792,679,031</u>	<u>\$ 17,727,864,418</u>	<u>\$ 21,520,543,449</u>

	Police and Firefighters June 30, 2009 (1)	All Other Employees June 30, 2009 (2)	All Employees June 30, 2009 (3)
1. Active members			
a. Service retirement benefits	\$ 2,134,640,502	\$ 8,760,536,315	\$ 10,895,176,817
b. Termination Benefits	74,612,087	688,066,918	762,679,005
d. Survivor benefits	30,776,107	117,925,709	148,701,816
e. Disability retirement benefits	9,754,101	80,551,103	90,305,204
f. Total	<u>\$ 2,249,782,797</u>	<u>\$ 9,647,080,045</u>	<u>\$ 11,896,862,842</u>
2. Retired members			
a. Service retirement	\$ 1,288,240,681	\$ 6,781,867,166	\$ 8,070,107,847
b. Disability retirement	26,367,284	127,237,567	153,604,851
c. Beneficiaries	57,485,571	302,831,681	360,317,252
d. Total	<u>\$ 1,372,093,536</u>	<u>\$ 7,211,936,414</u>	<u>\$ 8,584,029,950</u>
3. Inactive members			
a. Vested terminations	\$ 22,898,429	\$ 242,312,509	\$ 265,210,938
b. Nonvested terminations	2,569,949	645,135	3,215,084
c. Total	<u>\$ 25,468,378</u>	<u>\$ 242,957,644</u>	<u>\$ 268,426,022</u>
4. Total actuarial present value of future benefits	<u>\$ 3,647,344,711</u>	<u>\$ 17,101,974,103</u>	<u>\$ 20,749,318,814</u>

Analysis of Normal Cost

	Police and Firefighters June 30, 2010 <u> </u> (1)	All Other Employees June 30, 2010 <u> </u> (2)	All Employees June 30, 2010 <u> </u> (3)
1. Normal cost as a percent of pay			
a. Service retirement benefits	16.06%	8.41%	9.25%
b. Deferred termination benefits	0.70%	1.19%	1.14%
c. Refunds	1.45%	1.84%	1.79%
d. Disability retirement benefits	0.16%	0.18%	0.18%
e. Survivor benefits	0.43%	0.22%	0.24%
f. Total	<u>18.80%</u>	<u>11.84%</u>	<u>12.60%</u>
2. Employee contribution rate	12.20%	6.05%	6.70%
3. Effective employer normal cost rate (Item 1f - Item 2)	6.60%	5.79%	5.90%

	Police and Firefighters June 30, 2009 <u> </u> (1)	All Other Employees June 30, 2009 <u> </u> (2)	All Employees June 30, 2009 <u> </u> (3)
1. Normal cost as a percent of pay			
a. Service retirement benefits	16.04%	8.40%	9.19%
b. Deferred termination benefits	0.70%	1.22%	1.17%
c. Refunds	1.46%	1.82%	1.78%
d. Disability retirement benefits	0.16%	0.18%	0.18%
e. Survivor benefits	0.43%	0.21%	0.23%
f. Total	<u>18.79%</u>	<u>11.83%</u>	<u>12.55%</u>
2. Employee contribution rate	12.20%	6.05%	6.67%
3. Effective employer normal cost rate (Item 1f - Item 2)	6.59%	5.78%	5.88%

Plan Net Assets
(Assets at Market or Fair Value)

Item	Valuation as of	
	June 30, 2010	June 30, 2009
(1)	(2)	(3)
1. Cash and cash equivalents	\$ 529,665,198	\$ 392,555,319
2. Receivables:		
a. Accounts receivable and others	\$ 9,419,885	\$ 340,253
b. Investment sale proceeds	419,310,775	352,928,523
c. Accrued income	37,595,244	38,677,712
d. Employer contributions	50,106,075	46,378,558
e. Member contributions	3,806,490	3,951,657
f. Subtotal	<u>\$ 520,238,469</u>	<u>\$ 442,276,703</u>
3. Investments		
a. Equity securities	\$ 5,350,603,332	\$ 4,541,676,625
b. Fixed income securities	2,699,629,677	3,000,889,114
c. Real estate investments	966,230,009	696,435,920
d. Real estate mortgages	-	-
e. Alternative investments	492,083,165	429,651,424
f. Subtotal	<u>\$ 9,508,546,183</u>	<u>\$ 8,668,653,083</u>
4. Other		
a. Invested securities lending collateral	\$ 724,030,229	\$ 761,555,699
b. Equipment at cost, net of depreciation	9,943,647	11,358,647
c. Other assets	-	-
d. Subtotal	<u>\$ 733,973,876</u>	<u>\$ 772,914,346</u>
5. Total assets	\$ 11,292,423,726	\$ 10,276,399,451
6. Liabilities		
a. Bank overdraft	\$ 7,975,840	\$ 771,595
b. Accounts payable	44,058,035	25,538,746
c. Investment commitments payable	436,860,788	670,580,396
d. Due to employers	-	-
e. Securities lending collateral	724,030,229	761,555,699
f. Notes payable	257,866,002	-
g. Total liabilities	<u>\$ 1,470,790,894</u>	<u>\$ 1,458,446,436</u>
7. Total market value of assets available for benefits (Item 5 - Item 6g)	\$ 9,821,632,832	\$ 8,817,953,015

Reconciliation of Plan Net Assets

	Year Ending	
	June 30, 2010 (1)	June 30, 2009 (2)
1. a. Value of assets at beginning of year	\$ 8,817,953,015	\$10,846,788,965
b. Adjustment due to post valuation changes in CAFR assets	-	-
c. Adjusted value of assets at beginning of year	\$ 8,817,953,015	\$10,846,788,965
2. Revenue for the year		
a. Contributions		
i. Member contributions	\$ 360,047,068	\$ 184,520,539
ii. Employer contributions	547,612,717	578,635,281
iii. Total	\$ 907,659,785	\$ 763,155,820
b. Income		
i. Interest, dividends, and other income	\$ 283,726,584	\$ 299,316,135
ii. Investment expenses	(35,029,540)	(12,486,897)
iii. Net	\$ 248,697,044	\$ 286,829,238
c. Net realized and unrealized gains (loss)	\$ 773,682,562	\$ (2,223,863,835)
d. Net income (loss)	\$ 1,022,379,606	\$ (1,937,034,597)
e. Total revenue	\$ 1,930,039,391	\$ (1,173,878,777)
3. Expenditures for the year		
a. Refunds	\$ 7,762,738	\$ 3,485,038
b. Benefit payments	906,386,191	839,128,651
c. Administrative and miscellaneous expenses	12,210,645	12,343,484
d. Total expenditures	\$ 926,359,574	\$ 854,957,173
4. Increase (decrease) in net assets (Item 2e - Item 3d)	\$ 1,003,679,817	\$ (2,028,835,950)
5. Value of assets at end of year (Item 1c + Item 4)	\$ 9,821,632,832	\$ 8,817,953,015

Development of Actuarial Value of Assets

	Year Ending June 30, 2010		
1. Market value of assets at beginning of year	\$ 8,817,953,015		
2. Net new investments			
a. Contributions	\$ 907,659,785		
b. Benefits paid	(906,386,191)		
c. Refunds	(7,762,738)		
d. Subtotal	(6,489,144)		
3. Market value of assets at end of year	\$ 9,821,632,832		
4. Net earnings (3-1-2d)	\$ 1,010,168,961		
5. Assumed investment return rate	8.00%		
6. Expected return	\$ 705,176,675		
7. Excess/(shortfall) return (4-6)	\$ 304,992,286		
8. Deferred earnings as of June 30, 2010:			
<u>Period End</u>	<u>Excess Return</u>	<u>Percent Deferred</u>	<u>Deferred Amount</u>
(1)	(2)	(3)	(4)
June 30, 2010 (Item 7 above)	\$ 304,992,286	75%	\$ 228,744,215
June 30, 2009 (From 2009 report)	(2,813,942,883)	50%	(1,406,971,442)
June 30, 2008 (From 2008 report)	(1,383,031,789)	25%	(345,757,947)
June 30, 2007 (From 2007 report)	879,236,790	0%	0
			\$ (1,523,985,174)
9. Actuarial value of assets as of June 30, 2010 (Item 3 - Item 8)	\$ 11,345,618,006		
10. Ratio of actuarial value to market value			115.5%

Estimation of Yields

	<u>June 30, 2010</u> (1)	<u>June 30, 2009</u> (2)
A. Market value yield		
1. Beginning of year market assets	\$ 8,817,953,015	\$ 10,846,788,965
2. Investment income		
a. Change in assets (Item 3 - Item 1)	\$ 1,003,679,817	\$ (2,028,835,950)
b. Cash Flow (excluding expenses)	<u>(6,489,144)</u>	<u>(79,457,869)</u>
c. Total investment income based on market value (Item 2a less Item 2b)	\$ 1,010,168,961	\$ (1,949,378,081)
3. End of year market assets	\$ 9,821,632,832	\$ 8,817,953,015
4. Estimated dollar weighted market value yield (net of investment and administrative expenses)	11.46%	(18.04%)
B. Actuarial value yield		
1. Beginning of year actuarial assets	\$ 11,400,116,874	\$ 11,380,961,003
2. Investment income (based on asset valuation method)		
a. Change in assets (Item 3 - Item 1)	\$ (54,498,868)	\$ 19,155,872
b. Cash Flow	<u>(6,489,144)</u>	<u>(79,457,869)</u>
c. Total investment income based on market value (Item 2a less Item 2b)	\$ (48,009,724)	\$ 98,613,741
3. End of year actuarial assets	\$ 11,345,618,006	\$ 11,400,116,874
4. Estimated actuarial value yield (net of investment and administrative expenses)	(0.42%)	0.87%

Allocation of Cash and Investments

	<u>June 30, 2010</u>	<u>June 30, 2009</u>
	(1)	(2)
1. Cash and short-term equivalents	5.3%	4.3%
2. Fixed income securities	26.9%	33.1%
3. Equity securities	53.3%	50.2%
4. Real estate	9.6%	7.7%
5. Other	<u>4.9%</u>	<u>4.7%</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, 2009	\$ 900,441,300	\$ 5,335,874,142	\$ 6,236,315,442
2. Normal cost for the year (employer and employee)	\$ 76,246,547	\$ 525,232,464	\$ 601,479,011
3. Less: contributions and assessments for the year	\$ (114,500,873)	\$ (793,158,912)	\$ (907,659,785)
4. Interest at 8 %			
a. On UAAL	\$ 72,035,304	\$ 426,869,931	\$ 498,905,235
b. On normal cost	3,049,862	21,009,299	24,059,161
c. On contributions	(4,580,035)	(31,726,356)	(36,306,391)
d. Total	\$ 70,505,131	\$ 416,152,874	\$ 486,658,005
5. Expected UAAL as of June 30, 2010 (Sum of Items 1 - 4)	\$ 932,692,105	\$ 5,484,100,568	\$ 6,416,792,673
6. Actual UAAL as of June 30, 2010	\$ 1,074,507,182	\$ 6,063,543,403	\$ 7,138,050,585
7. Total gain (loss) for the year (Item 5 - Item 6)	\$ (141,815,077)	\$ (579,442,835)	\$ (721,257,912)
B. Source of gains and losses			
8. Asset gain (loss) for the year (Table 9b)	\$ (176,037,358)	\$ (783,722,150)	\$ (959,759,508)
9. Salary gain (loss) for the year	20,748,181	133,430,499	154,178,680
10. Other liability gain (loss) for the year	13,474,100	70,848,816	84,322,916
11. Change in benefit provisions	-	-	-
12. Total gain (loss) for the year	\$ (141,815,077)	\$ (579,442,835)	\$ (721,257,912)

Investment Experience Gain or Loss

Item (1)	June 30, 2010 (2)	June 30, 2009 (3)
1. Actuarial assets, beginning of year	\$ 11,400,116,874	\$ 11,380,961,003
2. Total contributions during year	\$ 907,659,785	\$ 763,155,820
3. Benefits and refunds paid	\$ (914,148,929)	\$ (842,613,689)
4. Assumed net investment income at 8%		
a. Beginning of year assets	\$ 912,009,350	\$ 910,476,880
b. Contributions	36,306,391	30,526,233
c. Benefits and refunds paid	(36,565,957)	(33,704,548)
d. Total	\$ 911,749,784	\$ 907,298,565
5. Expected actuarial assets, end of year (Sum of items 1 through 4)	\$ 12,305,377,514	\$ 12,208,801,699
6. Actual actuarial assets, end of year	\$ 11,345,618,006	\$ 11,400,116,874
7. Asset gain (loss) for year (Item 6 - Item 5)	\$ (959,759,508)	\$ (808,684,825)
8. Asset gain (loss) as a percent of actuarial value of assets, end of year (Item 7 / Item 6)	(8.46%)	(7.09%)

Analysis of Changes in Valuation Results

	UAAL (\$ Millions)		Funding Period		GASB ARC	
	Amount	Change	Years	Change	30-year Rate	Change
	(1)	(2)	(3)	(4)	(5)	(6)
1. 2009 Valuation	\$ 6,236	\$ -	28.2 years		15.17%	
2. 2010 Expected valuation results using expected contributions, closed amortization period	6,317	80	27.0 years	-1.2 years	15.13%	-0.04%
3. 2010 expected valuation results using actual contributions	6,417	100	27.9 years	0.9 years	15.27%	0.14%
4. 2010 valuation results using expected assets, expected payroll, expected liabilities and actual salaries	6,263	(154)	26.6 years	-1.3 years	15.05%	-0.22%
5. 2010 valuation results using expected assets, expected payroll, and actual liabilities	6,178	(84)	26.0 years	-0.6 years	14.94%	-0.11%
6. 2010 valuation results using actual liabilities, actual assets, and expected payroll	7,138	960	34.8 years	8.8 years	16.35%	1.41%
7. 2010 valuation results using actual liabilities, actual assets, and actual payroll	7,138	-	41.3 years	6.5 years	17.09%	0.74%
8. 2010 valuation results, resetting to 30 year amortization	7,138	-	41.3 years	0.0 years	16.90%	-0.19%

Employer Covered Payroll

	Police and Firefighters		All Other Employees		All Employees	
	March 31, 2010	March 31, 2009	March 31, 2010	March 31, 2009	March 31, 2010	March 31, 2009
	(1)	(2)	(3)	(4)	(5)	(6)
State of Hawaii	\$ 14,671,499	\$ 14,833,837	\$ 2,759,250,560	\$ 2,872,194,850	\$ 2,773,922,059	\$ 2,887,028,687
City & County of Honolulu	243,678,319	243,679,619	307,045,075	323,784,088	550,723,394	567,463,707
Board of Water Supply	-	-	35,220,711	35,039,714	35,220,711	35,039,714
County of Hawaii	58,409,147	56,536,632	85,705,123	87,310,271	144,114,270	143,846,903
County of Maui	51,109,439	48,609,820	91,221,494	87,458,819	142,330,933	136,068,639
County of Kauai	20,665,135	20,330,467	46,616,203	48,222,285	67,281,338	68,552,752
Total All Employers	\$ 388,533,539	\$ 383,990,375	\$ 3,325,059,166	\$ 3,454,010,027	\$ 3,713,592,705	\$ 3,838,000,402

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, 1997	\$ 7,268.5	\$ 8,001.9	\$ 733.4	90.8%	\$ 2,019.3	36.3%
June 30, 1998	7,906.2	8,492.0	585.8	93.1%	2,135.9	27.4%
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%

Note : Dollar amounts in millions.

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

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

Fiscal Year	Annual Required Contribution	Actual Contribution	Percentage Contributed
(1)	(2)	(3)	(4)
1997	\$ 323,188	\$ 322,121	99.7%
1998	307,680	310,627	101.0%
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%

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, 2010
Actuarial cost method	Entry Age Normal
Amortization method	Level percent, open
Remaining amortization period as of June 30, 2010*	30 years
Asset valuation method	4-year smoothed market
Actuarial assumptions:	
Investment rate of return (set by statute)**	8.00%
Projected salary increases **	17.75% to 4.00%
**Includes inflation at	3.00%
Cost-of-living adjustments (COLAs)***	2.50%

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

The current statutory contribution rates have a remaining amortization period of 41 years.

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

Membership Data

	Police and Firefighters		All Other Employees		All Employees	
	June 30, 2010	June 30, 2009	June 30, 2010	June 30, 2009	June 30, 2010	June 30, 2009
	(1)	(2)	(3)	(4)	(5)	(6)
1. Active members						
a. Number	4,940	4,955	60,950	62,957	65,890	67,912
b. Total payroll	\$ 388,533,540	\$ 383,990,376	\$ 3,325,059,166	\$ 3,454,010,026	\$ 3,713,592,706	\$ 3,838,000,402
c. Average salary	\$ 78,651	77,496	\$ 54,554	\$ 54,863	\$ 56,360	\$ 56,514
d. Average age	41.3	41.0	47.6	47.2	47.1	46.8
e. Average service	13.7	13.6	13.2	12.8	13.2	12.9
2. Inactive members						
a. Number	241	242	6,654	5,774	6,895	6,016
b. Total annual deferred benefits	\$ 3,786,481	\$ 3,783,554	\$ 50,376,724	41,172,623	\$ 54,163,205	\$ 44,956,177
c. Average annual deferred benefit	\$ 15,712	\$ 15,635	\$ 7,571	7,131	\$ 7,855	\$ 7,473
3. Service retirees						
a. Number	2,880	2,794	31,386	30,149	34,266	32,943
b. Total annual benefits	\$ 118,115,680	\$ 109,398,947	\$ 694,141,608	644,026,292	\$ 812,257,288	\$ 753,425,239
c. Average annual benefit	\$ 41,012	\$ 39,155	\$ 22,116	21,361	\$ 23,704	\$ 22,871
4. Disabled retirees						
a. Number	163	168	1,334	1,318	1,497	1,486
b. Total annual benefits	\$ 2,734,501	\$ 2,693,142	\$ 13,735,530	12,925,859	\$ 16,470,031	\$ 15,619,001
c. Average annual benefit	\$ 16,776	\$ 16,031	\$ 10,296	9,807	\$ 11,002	\$ 10,511
5. Beneficiaries						
a. Number	198	190	2,480	2,380	2,678	2,570
b. Total annual benefits	\$ 5,424,211	\$ 5,018,325	\$ 31,569,183	\$ 29,182,882	\$ 36,993,394	\$ 34,201,207
c. Average annual benefit	\$ 27,395	\$ 26,412	\$ 12,730	12,262	\$ 13,814	\$ 13,308

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)
1992	55,410	3.4%	\$ 1,828.7	9.1%	\$ 33,003	5.5%		
1993	57,467	3.7%	1,976.1	8.1%	34,387	4.2%		
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

History of Cash Flow

Year Ending June 30, (1)	Contributions			Expenditures				External Cash Flow for the Year ² (9)	Market Value of Assets (10)	External Cash Flow as Percent of Market Value (11)
	Employee (2)	Employer (3)	Total (4)	Benefit Payments (5)	Refunds (6)	Administrative Expenses ¹ (7)	Total (8)			
2000	\$ 57.4	\$ 22.4	\$ 79.8	\$ (471.2)	\$ (47.5)	\$ (4.2)	\$ (522.9)	\$ (443.1)	\$ 9,931.8	(4.5%)
2001	54.5	8.1	62.6	(503.3)	(45.5)	(4.9)	(553.7)	(491.1)	8,772.0	(5.6%)
2002	55.4	167.5	222.9	(530.4)	(38.4)	(5.8)	(574.6)	(351.7)	7,907.0	(4.4%)
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%)

Amounts in \$ millions

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

Solvency Test

	<u>June 30, 2010</u>	<u>June 30, 2009</u>
	(1)	(2)
1. Actuarial accrued liability (AAL)		
a. Active member contributions	\$ 1,265,007,786	\$ 1,168,903,589
b. Retirees and beneficiaries	9,259,425,898	8,584,029,950
c. Active and inactive members	<u>7,959,234,907</u>	<u>7,883,498,777</u>
d. Total	\$ 18,483,668,591	\$ 17,636,432,316
2. Actuarial value of assets	\$ 11,345,618,006	\$ 11,400,116,874
3. Cumulative portion of AAL covered		
a. Active member contributions	100%	100%
b. Retirees and beneficiaries	100%	100%
c. Active and inactive members	10%	21%

Highlights of Last Five Annual Actuarial Valuations
2006 through 2010

Item	Valuation Date: June 30				
	2006	2007	2008	2009	2010
Number of active members	64,069	65,251	66,589	67,912	65,890
Number of inactive members	5,164	5,554	5,847	6,016	6,895
Number of pensioners	32,199	33,117	33,893	34,429	35,763
Number of beneficiaries	2,105	2,207	2,367	2,570	2,678
Average monthly contributory plan pension amount	\$ 1,792	\$ 1,869	\$ 1,941	\$ 2,019	\$ 2,118
Average monthly noncontributory plan pension amount	\$ 1,335	\$ 1,359	\$ 1,388	\$ 1,421	\$ 1,457
Average monthly hybrid plan pension amount	n/a	\$ 1,453	\$ 1,603	\$ 1,602	\$ 1,857
Average monthly beneficiary amount	\$ 989	\$ 1,025	\$ 1,062	\$ 1,109	\$ 1,151
Total actuarial value of assets (\$millions)	\$ 9,529	\$ 10,590	\$ 11,381	\$ 11,400	\$ 11,346
Unfunded actuarial accrued liability (\$millions)	\$ 5,132.0	\$ 5,106.8	\$ 5,168.1	\$ 6,236.3	\$ 7,138.1
Funding Period (in years) ⁽¹⁾	35.2	25.5	22.6	28.2	41.3
Item (Dollar amounts in millions)	Fiscal Year				
	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Employer appropriations ⁽²⁾	\$ 423.4	\$ 454.5	\$ 488.8	\$ 578.6	\$ 547.6

⁽¹⁾ Beginning with the 2004 valuation, the purpose of the valuation is to determine the remaining amortization period based on the statutory contribution rates. Prior valuations determined the dollar amount needed to amortize the UAAL over a fixed period of time.

⁽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.

Summary of Benefit Provisions

	<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 30% 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>

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.

Post Retirement Benefit

Each retiree's original retirement allowance is increased by 2 ½% on each July 1 beginning the calendar year after retirement. This cumulative benefit is not compounded and increased each year by another 2 ½% of the original retirement allowance without a ceiling (i.e., 2 1.2% of the original retirement allowance the first year, 5% the second year, 7 ½% the third year, etc.).

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 reduce 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 reduce 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 reduce lifetime pension. Should death occur within two 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%.

**Summary of Actuarial Methods and Assumptions
(Adopted on August 14, 2006 and on June 30, 2007)**

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 funding period required to amortize the unfunded actuarial accrued liability (UAAL) is determined using the Entry Age Actuarial Cost Method. This method assigns the plan's total unfunded liabilities (the actuarial present value of future benefits less the actuarial value of assets) to various periods. The unfunded 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 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.

Since the State statutes governing the System establish the current employee and Employer contribution rates, the actuarial valuation determines the number of years required to amortize (or fund) the UAAL on a level percentage of payroll basis, taking into account the payroll growth assumption and the normal cost expressed as a percent of pay.

Because of this amortization procedure, 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.

III. Funding of Unfunded Actuarial Accrued Liability

All of the following concepts will be discussed on an aggregate basis with regards to the contributory, the Hybrid, and the noncontributory plans. The total normal cost for benefits provided by ERS is 12.49% of payroll, which is 9.61% of payroll less than the total contributions required by Law (15.46% from employers plus 6.64% in the aggregate from employees). Since only 5.85% of the employer's 15.46% contribution is required to meet the normal cost (6.64% comes from the employee contribution), it is intended that the remaining 9.91% of payroll will be used to amortize any unfunded actuarial accrued liabilities over a period of years in the future, assuming that total payroll increases by 3.50% per year.

IV. Actuarial Value of Assets

The actuarial value of assets is equal to the market value, adjusted for a four-year phase in of actual investment return in excess of expected investment return. The actual return 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 market value of assets, adjusted for contributions, benefits paid, and refunds.

V. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 8% per year, compounded annually, composed of an assumed 3.00% inflation rate and a 5.00% net real rate of return. (Set by legislative action.)
2. Payroll growth rate: 3.50% per annum.
3. Salary increase rate: As shown below

Years of Service	General Employees		Teachers	
	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)
0	4.00%	8.00%	4.00%	8.50%
1	2.50%	6.50%	3.00%	7.50%
2	1.50%	5.50%	2.50%	7.00%
3	1.00%	5.00%	2.00%	6.50%
4	0.75%	4.75%	1.50%	6.00%
5	0.50%	4.50%	1.00%	5.50%
6	0.50%	4.50%	1.00%	5.50%
7	0.25%	4.25%	0.75%	5.25%
8	0.25%	4.25%	0.75%	5.25%
9	0.25%	4.25%	0.75%	5.25%
10	0.25%	4.25%	0.50%	5.00%
11	0.25%	4.25%	0.50%	5.00%
12	0.25%	4.25%	0.50%	5.00%
13	0.00%	4.00%	0.50%	5.00%
14	0.00%	4.00%	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 1.75% General Increase Rate
(1)	(2)	(3)
0	13.00%	17.75%
1	11.00%	15.75%
2 or more	0.00%	4.75%

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**

- a. Healthy males – Client Specific Table for males, 90% multiplier.
- b. Healthy females - Client Specific Table for females, 90% multiplier.
- c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward ten years.
- d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward eleven years.

Teachers

- a. Healthy males – Client Specific Table for male teachers, 75% multiplier.
- b. Healthy females - Client Specific Table for female teachers, 65% multiplier.
- c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward four years.
- d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward six years.

Police and Fire

- a. Healthy males – 1994 US Group Annuity Mortality Static Table for males, 85% multiplier.
- b. Healthy females - 1994 US Group Annuity Mortality Static Table for females, 85% multiplier.
- c. Disabled males - 1994 US Group Annuity Mortality Static Table for males set forward five years.
- d. Disabled females - 1994 US Group Annuity Mortality Static Table for females set forward five years.

2. Pre-retirement Mortality Rates

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
	Male and Females	Male and Females	Male and Females
Ordinary	40%	35%	15%
Accidental	10%	5%	35%

3. Disability rates – 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	150%	95%	40%	40%	70%
Accidental	20%	5%	5%	5%	35%

4. Termination Rates - Separate male and female rates, based on both age and service, developed from 2006 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	6.5
Teachers	32.0	22.0	14.0	12.0	10.0	9.0
Police & Fire	11.0	7.5	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	22.0	15.0	14.0	11.0	8.0
Police & Fire	11.0	7.5	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)
25	6.08	7.38	4.35	6.50	2.00
30	5.04	4.82	4.12	5.80	2.82
35	4.03	3.75	3.80	4.41	2.50
40	3.36	3.02	3.38	3.32	1.66
45	2.81	2.49	2.57	2.65	0.94
50	2.58	2.62	2.56	2.60	0.66
55	3.67	3.92	4.53	4.97	0.00
60	4.00	4.24	5.59	4.66	0.00

5. Retirement rates - Separate male and female rates, based on age, developed from the 2006 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	1	0	0	0	18
46	1	0	0	0	18
47	1	0	0	0	18
48	1	0	0	0	18
49	1	0	0	0	18
50	2	1	1	0	18
51	2	1	1	0	18
52	2	1	1	1	18
53	2	1	4	1	18
54	6	5	7	4	25
55	20	20	20	22	25
56	15	10	15	18	22
57	15	10	15	18	22
58	15	10	15	18	22
59	15	12	15	18	22
60	15	12	14	18	30
61	18	15	14	18	30
62	35	35	14	25	30
63	20	25	14	18	30
64	20	20	14	18	30
65	35	45	25	25	100
66	25	25	25	25	100
67	30	30	25	30	100
68	25	40	25	40	100
69	25	40	25	40	100
70	25	25	25	25	100
71	25	25	25	25	100
72	25	25	25	25	100
73	25	25	25	25	100
74	25	25	25	25	100
75	100	100	100	100	100

Noncontributory Plan

Age	Expected Retirements per 100 Lives			
	General Employees		Teachers	
	Male	Female	Male	Female
45	0	0	0	0
46	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
54	0	0	0	0
55	10	10	10	13
56	9	10	9	12
57	9	10	9	12
58	9	10	9	15
59	9	10	9	18
60	10	15	10	18
61	18	15	10	18
62	30	25	15	30
63	30	25	10	16
64	25	25	10	16
65	40	30	24	30
66	35	30	18	20
67	30	25	15	20
68	30	25	15	20
69	30	25	15	20
70	20	25	15	25
71	20	25	15	25
72	20	25	15	25
73	20	25	15	25
74	20	25	15	25
75	100	100	100	100

C. Other Assumptions

1. Percent married: 77% of male employees and 57.6% of female employees are assumed to be married.
2. Age difference: 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.
3. 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.
4. 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.
5. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt when eligible for early retirement.
6. Administrative expenses: The assumed investment return rate represents the anticipated net return after payment of all investment and administrative expenses.
7. 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.
8. 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%

9. COLA delay: It is assumed that the first COLA will be received 9 months after retirement.
10. There will be no recoveries once disabled.
11. No surviving spouse will remarry and there will be no children's benefit.

-
12. 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.
 13. 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.
 14. 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.
 15. Decrement relativity: Decrement rates are used directly from the Experience Study, without adjustment for multiple decrement table effects.
 16. 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.
 17. 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.

VI. Participant Data

Participant data was supplied on CD-ROM 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 August 14, 2006 as recommended by Gabriel, Roeder, Smith & Company. The legislature sets the investment return assumption. The salary scale assumption prior to the June 30, 2007 valuation was also set by statute. The 2007 Legislature removed this constraint as of June 30, 2007, and this assumption is now set by the Board based on the Actuary's recommendations.

SECTION M

STATISTICAL TABLES

STATISTICAL TABLES

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**Distribution of Active Members by Age and by Years of Service - All Employees
As of 06/30/2010**

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	123 \$40,662	210 \$39,612	93 \$37,228	45 \$39,704	12 \$48,552	1 \$30,553	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	484 \$39,632
25-29	301 \$43,940	783 \$42,843	861 \$43,789	643 \$46,400	442 \$47,711	424 \$47,704	1 \$88,751	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3,455 \$45,069
30-34	131 \$46,485	601 \$47,249	740 \$45,800	703 \$47,677	658 \$49,601	2,550 \$51,857	285 \$54,826	3 \$47,306	0 \$0	0 \$0	0 \$0	0 \$0	5,671 \$49,821
35-39	1,502 \$42,341	740 \$48,524	663 \$46,539	624 \$50,043	475 \$49,225	2,481 \$53,287	2,018 \$58,761	373 \$59,551	7 \$47,302	0 \$0	0 \$0	0 \$0	8,883 \$51,593
40-44	71 \$46,788	412 \$46,707	508 \$46,654	495 \$49,129	421 \$47,926	1,999 \$51,950	1,789 \$58,862	2,279 \$63,245	529 \$65,414	1 \$61,982	0 \$0	0 \$0	8,504 \$56,293
45-49	57 \$47,719	387 \$44,613	477 \$45,923	484 \$47,452	367 \$47,312	1,742 \$49,412	1,260 \$54,512	1,974 \$61,328	2,316 \$66,477	422 \$68,893	8 \$80,443	0 \$0	9,494 \$57,059
50-54	46 \$50,402	314 \$44,890	375 \$45,055	411 \$46,317	333 \$49,798	1,545 \$49,125	1,206 \$52,022	1,709 \$58,538	2,070 \$64,411	1,619 \$70,709	384 \$65,890	15 \$75,275	10,027 \$58,028
55-59	49 \$53,267	263 \$51,459	327 \$49,703	285 \$49,767	281 \$47,222	1,362 \$50,142	1,101 \$52,819	1,541 \$56,912	1,722 \$63,797	1,431 \$71,320	1,325 \$73,579	331 \$69,633	10,018 \$60,537
60-64	32 \$42,470	116 \$53,781	191 \$51,385	177 \$50,939	172 \$52,392	936 \$51,953	746 \$54,214	1,024 \$57,281	1,109 \$63,229	661 \$69,468	527 \$77,959	852 \$78,825	6,543 \$62,273
65 & Over	5 \$49,586	38 \$60,225	50 \$56,539	80 \$48,980	69 \$58,762	461 \$48,951	361 \$51,430	423 \$57,894	360 \$61,994	252 \$69,977	180 \$82,613	532 \$90,034	2,811 \$64,631
Total	2,317 \$43,371	3,864 \$46,282	4,285 \$46,046	3,947 \$48,089	3,230 \$48,963	13,501 \$51,108	8,767 \$55,684	9,326 \$59,880	8,113 \$64,652	4,386 \$70,502	2,424 \$74,007	1,730 \$80,482	65,890 \$56,360

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, All
As of 06/30/2010**

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	7 \$38,403	1 \$30,553	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	8 \$37,422
25-29	0 \$0	1 \$37,416	0 \$0	2 \$30,000	196 \$45,362	208 \$42,043	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	407 \$43,571
30-34	0 \$0	0 \$0	0 \$0	2 \$39,134	294 \$46,554	1,056 \$48,777	107 \$48,300	2 \$36,548	0 \$0	0 \$0	0 \$0	0 \$0	1,461 \$48,264
35-39	1 \$46,246	2 \$32,500	2 \$27,163	3 \$45,851	213 \$45,364	1,066 \$49,515	722 \$52,960	143 \$52,059	2 \$65,944	0 \$0	0 \$0	0 \$0	2,154 \$50,401
40-44	1 \$25,015	1 \$10,000	1 \$42,984	6 \$44,003	196 \$45,445	924 \$48,343	696 \$53,585	822 \$56,604	187 \$55,441	1 \$61,982	0 \$0	0 \$0	2,835 \$52,265
45-49	0 \$0	0 \$0	1 \$68,000	2 \$39,738	157 \$41,734	876 \$46,974	611 \$50,907	786 \$56,084	813 \$58,992	92 \$58,564	2 \$62,048	0 \$0	3,340 \$52,846
50-54	0 \$0	0 \$0	0 \$0	0 \$0	147 \$45,288	707 \$45,234	605 \$48,256	790 \$53,365	811 \$58,528	374 \$64,527	108 \$57,885	4 \$72,292	3,546 \$53,054
55-59	0 \$0	0 \$0	1 \$57,205	2 \$35,254	106 \$43,477	570 \$44,620	503 \$49,231	772 \$54,532	730 \$58,406	403 \$66,172	340 \$68,178	115 \$68,385	3,542 \$55,726
60-64	0 \$0	1 \$78,100	0 \$0	0 \$0	58 \$42,532	392 \$46,652	375 \$49,520	530 \$54,458	519 \$60,427	234 \$66,972	168 \$74,106	326 \$77,086	2,603 \$58,732
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	22 \$52,477	205 \$41,707	201 \$46,874	292 \$53,313	238 \$58,707	118 \$66,219	68 \$80,773	228 \$88,918	1,372 \$59,946
Total	2 \$35,631	5 \$38,103	5 \$44,503	17 \$40,578	1,396 \$45,026	6,005 \$47,150	3,820 \$50,721	4,137 \$54,826	3,300 \$58,756	1,222 \$65,250	686 \$69,240	673 \$79,579	21,268 \$53,716

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, General Employees
As of 06/30/2010**

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	7 \$38,403	1 \$30,553	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	8 \$37,422
25-29	0 \$0	1 \$37,416	0 \$0	2 \$30,000	110 \$42,046	153 \$39,140	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	266 \$40,267
30-34	0 \$0	0 \$0	0 \$0	2 \$39,134	185 \$44,514	577 \$46,068	71 \$44,986	2 \$36,548	0 \$0	0 \$0	0 \$0	0 \$0	837 \$45,593
35-39	1 \$46,246	1 \$35,000	2 \$27,163	2 \$46,029	165 \$43,449	737 \$47,692	381 \$49,241	119 \$49,386	2 \$65,944	0 \$0	0 \$0	0 \$0	1,410 \$47,742
40-44	1 \$25,015	1 \$10,000	1 \$42,984	5 \$38,648	163 \$42,788	699 \$44,398	474 \$51,366	529 \$53,648	158 \$53,560	1 \$61,982	0 \$0	0 \$0	2,032 \$48,982
45-49	0 \$0	0 \$0	1 \$68,000	2 \$39,738	139 \$40,365	700 \$43,881	472 \$47,195	601 \$52,827	569 \$55,406	81 \$57,254	2 \$62,048	0 \$0	2,567 \$49,392
50-54	0 \$0	0 \$0	0 \$0	0 \$0	125 \$43,599	567 \$42,014	489 \$44,500	657 \$49,966	671 \$56,002	291 \$62,329	100 \$56,263	4 \$72,292	2,904 \$50,100
55-59	0 \$0	0 \$0	0 \$0	2 \$35,254	88 \$40,738	479 \$42,119	394 \$45,351	610 \$50,042	565 \$53,562	319 \$62,720	259 \$64,014	105 \$66,909	2,821 \$51,790
60-64	0 \$0	0 \$0	0 \$0	0 \$0	44 \$37,718	306 \$43,531	286 \$45,800	413 \$49,671	368 \$53,564	163 \$60,949	121 \$69,695	189 \$69,730	1,890 \$52,831
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	20 \$49,465	179 \$39,778	173 \$42,914	248 \$49,262	186 \$53,672	84 \$56,258	40 \$63,046	115 \$79,945	1,045 \$51,842
Total	2 \$35,631	3 \$27,472	4 \$41,327	15 \$38,237	1,046 \$42,607	4,398 \$44,097	2,740 \$46,982	3,179 \$51,011	2,519 \$54,647	939 \$61,241	522 \$63,764	413 \$71,882	15,780 \$49,964

**Distribution of Active Members by Age and by Years of Service
Noncontributory Members, Teachers
As of 06/30/2010**

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	0 \$0	86 \$49,602	55 \$50,118	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	141 \$49,803
30-34	0 \$0	0 \$0	0 \$0	0 \$0	109 \$50,015	479 \$52,040	36 \$54,835	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	624 \$51,847
35-39	0 \$0	1 \$30,000	0 \$0	1 \$45,497	48 \$51,944	329 \$53,599	341 \$57,116	24 \$65,316	0 \$0	0 \$0	0 \$0	0 \$0	744 \$55,440
40-44	0 \$0	0 \$0	0 \$0	1 \$70,779	33 \$58,572	225 \$60,600	222 \$58,324	293 \$61,941	29 \$65,690	0 \$0	0 \$0	0 \$0	803 \$60,573
45-49	0 \$0	0 \$0	0 \$0	0 \$0	18 \$52,311	176 \$59,272	139 \$63,510	185 \$66,663	244 \$67,352	11 \$68,209	0 \$0	0 \$0	773 \$64,318
50-54	0 \$0	0 \$0	0 \$0	0 \$0	22 \$54,883	140 \$58,274	116 \$64,087	133 \$70,153	140 \$70,637	83 \$72,236	8 \$78,157	0 \$0	642 \$66,418
55-59	0 \$0	0 \$0	1 \$57,205	0 \$0	18 \$56,870	91 \$57,784	109 \$63,257	162 \$71,439	165 \$74,990	84 \$79,281	81 \$81,492	10 \$83,883	721 \$71,123
60-64	0 \$0	1 \$78,100	0 \$0	0 \$0	14 \$57,661	86 \$57,756	89 \$61,474	117 \$71,357	151 \$77,152	71 \$80,799	47 \$85,464	137 \$87,235	713 \$74,372
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	2 \$82,601	26 \$54,992	28 \$71,344	44 \$76,145	52 \$76,715	34 \$90,831	28 \$106,097	113 \$98,050	327 \$85,843
Total	0 \$0	2 \$54,050	1 \$57,205	2 \$58,138	350 \$52,254	1,607 \$55,506	1,080 \$60,208	958 \$67,486	781 \$72,011	283 \$78,553	164 \$86,668	260 \$91,806	5,488 \$64,504

**Distribution of Active Members by Age and by Years of Service
Contributory Members, All
As of 06/30/2010**

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	14 \$48,846	21 \$59,126	12 \$62,018	8 \$61,399	2 \$64,503	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	57 \$57,717
25-29	95 \$49,731	68 \$58,035	77 \$61,947	79 \$62,010	56 \$64,219	66 \$66,771	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	441 \$59,734
30-34	26 \$50,020	56 \$58,030	56 \$63,137	86 \$62,954	74 \$65,886	321 \$65,956	72 \$71,544	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	691 \$64,686
35-39	12 \$48,390	36 \$59,949	26 \$59,616	52 \$63,393	36 \$66,497	327 \$67,990	420 \$73,691	77 \$84,809	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	986 \$70,682
40-44	6 \$50,314	9 \$57,507	12 \$65,614	13 \$61,101	19 \$63,272	186 \$66,973	324 \$74,492	371 \$85,432	137 \$92,983	0 \$0	0 \$0	0 \$0	0 \$0	1,077 \$78,579
45-49	1 \$53,959	3 \$56,773	9 \$65,796	6 \$66,891	7 \$73,596	47 \$68,915	98 \$71,698	275 \$84,868	331 \$95,233	173 \$83,157	3 \$57,448	0 \$0	0 \$0	953 \$85,433
50-54	0 \$0	0 \$0	3 \$72,532	2 \$48,816	5 \$69,216	20 \$92,045	55 \$76,155	125 \$85,953	205 \$95,241	538 \$78,944	127 \$74,549	5 \$82,811	5 \$0	1,085 \$82,316
55-59	0 \$0	3 \$50,219	1 \$70,505	5 \$61,802	0 \$0	17 \$79,653	27 \$85,846	40 \$92,109	68 \$107,187	386 \$78,371	351 \$76,861	81 \$70,415	81 \$0	979 \$79,784
60-64	0 \$0	0 \$0	0 \$0	3 \$49,796	2 \$127,080	11 \$114,057	11 \$88,872	10 \$86,930	21 \$99,342	138 \$69,634	132 \$76,873	170 \$77,828	170 \$0	498 \$77,467
65 & Over	0 \$0	1 \$48,708	0 \$0	2 \$80,050	0 \$0	11 \$101,943	5 \$82,093	5 \$93,980	3 \$85,991	51 \$62,657	58 \$70,870	132 \$83,933	132 \$0	268 \$77,812
Total	154 \$49,645	197 \$58,290	196 \$62,588	256 \$62,548	201 \$66,230	1,006 \$68,666	1,012 \$74,266	903 \$85,639	765 \$95,971	1,286 \$77,694	671 \$75,821	388 \$78,421	388 \$0	7,035 \$76,322

**Distribution of Active Members by Age and by Years of Service
Contributory Members, General Employees
As of 06/30/2010**

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	0 \$0	0 \$0	0 \$0	2 \$47,984	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$47,984
30-34	0 \$0	1 \$48,708	0 \$0	2 \$47,168	0 \$0	6 \$50,137	1 \$48,708	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	10 \$49,258
35-39	1 \$13,559	3 \$82,889	0 \$0	1 \$47,913	0 \$0	12 \$49,290	6 \$54,103	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	23 \$53,314
40-44	0 \$0	1 \$48,708	0 \$0	1 \$48,708	1 \$64,433	21 \$62,449	12 \$69,336	9 \$65,845	2 \$63,451	0 \$0	0 \$0	0 \$0	47 \$64,357
45-49	0 \$0	1 \$48,708	1 \$63,148	1 \$48,708	0 \$0	3 \$69,408	4 \$52,274	14 \$66,132	16 \$90,547	67 \$56,582	3 \$57,448	0 \$0	110 \$62,871
50-54	0 \$0	0 \$0	2 \$87,522	2 \$48,816	1 \$98,600	11 \$107,883	8 \$88,413	13 \$92,028	18 \$87,201	236 \$59,262	78 \$56,360	3 \$73,324	372 \$63,530
55-59	0 \$0	3 \$50,219	0 \$0	2 \$57,604	0 \$0	10 \$80,838	13 \$93,980	8 \$119,086	21 \$119,057	232 \$67,106	182 \$64,730	54 \$61,466	525 \$69,367
60-64	0 \$0	0 \$0	0 \$0	3 \$49,796	2 \$127,080	10 \$115,326	10 \$90,915	7 \$84,411	7 \$91,468	91 \$61,363	87 \$71,309	87 \$66,597	304 \$69,997
65 & Over	0 \$0	1 \$48,708	0 \$0	2 \$80,050	0 \$0	10 \$105,031	5 \$82,093	3 \$110,032	0 \$0	37 \$56,939	46 \$65,229	64 \$73,383	168 \$70,259
Total	1 \$13,559	10 \$59,415	3 \$79,397	14 \$54,428	6 \$85,527	83 \$79,646	59 \$79,036	54 \$84,972	64 \$98,215	663 \$61,895	396 \$64,530	208 \$67,450	1,561 \$67,193

**Distribution of Active Members by Age and by Years of Service
Contributory Members, Teachers
As of 06/30/2010**

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	1 \$55,622	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$55,622
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	2 \$59,447	1 \$54,794	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$57,896
40-44	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$76,921	2 \$54,283	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$61,829
45-49	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2 \$81,834	0 \$0	4 \$70,923	0 \$0	0 \$0	0 \$0	6 \$74,560
50-54	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$85,848	1 \$149,062	3 \$91,001	1 \$143,312	95 \$73,347	11 \$77,604	0 \$0	112 \$75,650	
55-59	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$83,664	1 \$99,241	50 \$79,946	116 \$79,708	17 \$80,464	185 \$79,969	
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$233,328	28 \$75,012	32 \$81,251	74 \$86,907	135 \$84,184	
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$77,378	1 \$82,563	13 \$77,676	9 \$87,287	65 \$93,129	89 \$89,985	
Total	0 \$0	0 \$0	0 \$0	0 \$0	1 \$55,622	3 \$68,247	3 \$93,592	9 \$78,476	4 \$139,611	190 \$75,574	168 \$80,270	156 \$88,797	534 \$81,466	

**Distribution of Active Members by Age and by Years of Service
Contributory Members, Police and Firefighters
As of 06/30/2010**

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	14 \$48,846	21 \$59,126	12 \$62,018	8 \$61,399	2 \$64,503	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	57 \$57,717
25-29	95 \$49,731	68 \$58,035	77 \$61,947	79 \$62,010	53 \$64,994	66 \$66,771	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	438 \$59,797
30-34	26 \$50,020	55 \$58,199	56 \$63,137	84 \$63,330	74 \$65,886	315 \$66,257	71 \$71,866	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	681 \$64,913
35-39	11 \$51,556	33 \$57,864	26 \$59,616	51 \$63,697	36 \$66,497	313 \$68,762	413 \$74,021	77 \$84,809	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	960 \$71,138
40-44	6 \$50,314	8 \$58,607	12 \$65,614	12 \$62,134	18 \$63,208	165 \$67,549	311 \$74,683	360 \$86,095	135 \$93,421	0 \$0	0 \$0	0 \$0	0 \$0	1,027 \$79,279
45-49	1 \$53,959	2 \$60,806	8 \$66,127	5 \$70,527	7 \$73,596	44 \$68,881	94 \$72,525	259 \$85,904	315 \$95,471	102 \$101,093	0 \$0	0 \$0	0 \$0	837 \$88,476
50-54	0 \$0	0 \$0	1 \$42,552	0 \$0	4 \$61,870	8 \$71,044	46 \$72,438	109 \$85,089	186 \$95,761	207 \$103,953	38 \$111,001	2 \$97,042	2 \$0	601 \$95,187
55-59	0 \$0	0 \$0	1 \$70,505	3 \$64,601	0 \$0	7 \$77,960	14 \$78,292	31 \$85,420	46 \$101,940	104 \$102,743	53 \$112,290	10 \$101,659	10 \$0	269 \$99,987
60-64	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$101,371	1 \$68,436	3 \$92,808	13 \$93,275	19 \$101,323	13 \$103,334	9 \$111,738	9 \$100,592	59 \$100,592
65 & Over	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1 \$71,059	0 \$0	1 \$62,424	2 \$87,705	1 \$79,002	3 \$108,106	3 \$109,765	3 \$94,683	11 \$94,683
Total	153 \$49,881	187 \$58,230	193 \$62,327	242 \$63,018	194 \$65,688	920 \$67,677	950 \$73,909	840 \$85,759	697 \$95,515	433 \$102,816	107 \$110,627	24 \$106,067	24 \$106,067	4,940 \$78,651

**Distribution of Active Members by Age and by Years of Service
Hybrid Plan Members, All
As of 06/30/2010**

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	109 \$39,611	189 \$37,444	81 \$33,556	37 \$35,013	3 \$61,600	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	419 \$37,214
25-29	206 \$41,269	714 \$41,404	784 \$42,006	562 \$44,264	190 \$45,270	150 \$47,164	1 \$88,751	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2,607 \$42,822
30-34	105 \$45,609	545 \$46,141	684 \$44,380	615 \$45,569	290 \$48,535	1,173 \$50,772	106 \$50,059	1 \$68,822	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3,519 \$47,548
35-39	1,489 \$42,289	702 \$47,984	635 \$46,065	569 \$48,845	226 \$50,112	1,088 \$52,564	876 \$56,383	153 \$53,842	5 \$39,845	0 \$0	0 \$0	0 \$0	0 \$0	5,743 \$48,762
40-44	64 \$46,798	402 \$46,557	495 \$46,201	476 \$48,866	206 \$48,872	889 \$52,555	769 \$57,053	1,086 \$60,691	205 \$56,086	0 \$0	0 \$0	0 \$0	0 \$0	4,592 \$53,552
45-49	56 \$47,607	384 \$44,518	467 \$45,493	476 \$47,239	203 \$50,720	819 \$50,902	551 \$55,453	913 \$58,752	1,172 \$63,549	157 \$59,227	3 \$115,701	0 \$0	0 \$0	5,201 \$54,566
50-54	46 \$50,402	314 \$44,890	372 \$44,834	409 \$46,305	181 \$52,925	818 \$51,439	546 \$53,764	794 \$59,368	1,054 \$62,941	707 \$67,711	149 \$64,311	6 \$70,984	6 \$0	5,396 \$56,412
55-59	49 \$53,267	260 \$51,473	325 \$49,616	278 \$49,655	175 \$49,490	775 \$53,556	571 \$54,417	729 \$57,501	924 \$64,863	642 \$70,311	634 \$74,658	135 \$70,227	135 \$0	5,497 \$60,209
60-64	32 \$42,470	115 \$53,570	191 \$51,385	174 \$50,959	112 \$56,164	533 \$54,569	360 \$58,045	484 \$59,758	569 \$64,453	289 \$71,411	227 \$81,441	356 \$80,893	356 \$0	3,442 \$62,752
65 & Over	5 \$49,586	37 \$60,536	50 \$56,539	78 \$48,184	47 \$61,704	245 \$52,633	155 \$56,349	126 \$67,079	119 \$67,965	83 \$79,817	54 \$97,542	172 \$96,197	172 \$0	1,171 \$67,105
Total	2,161 \$42,931	3,662 \$45,647	4,084 \$45,254	3,674 \$47,116	1,633 \$50,203	6,490 \$52,048	3,935 \$55,724	4,286 \$59,330	4,048 \$63,540	1,878 \$68,995	1,067 \$75,930	669 \$82,586	669 \$0	37,587 \$54,121

**Distribution of Active Members by Age and by Years of Service
Hybrid Plan Members, General Employees
As of 06/30/2010**

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	46 \$35,976	103 \$33,200	76 \$33,050	37 \$35,013	3 \$61,600	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	265 \$34,214
25-29	114 \$39,647	389 \$38,912	473 \$40,015	320 \$42,125	111 \$42,894	94 \$44,859	1 \$88,751	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,502 \$40,699
30-34	76 \$46,855	387 \$45,221	491 \$42,978	420 \$44,073	182 \$47,781	609 \$48,387	66 \$46,618	1 \$68,822	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2,232 \$45,691
35-39	910 \$39,517	535 \$46,727	484 \$43,338	418 \$46,368	176 \$49,549	731 \$50,574	408 \$53,585	109 \$49,056	5 \$39,845	0 \$0	0 \$0	0 \$0	0 \$0	3,776 \$46,191
40-44	48 \$46,038	305 \$44,031	387 \$43,893	369 \$46,771	167 \$46,838	663 \$49,437	482 \$54,152	614 \$57,951	166 \$53,246	0 \$0	0 \$0	0 \$0	0 \$0	3,201 \$50,298
45-49	41 \$45,090	307 \$42,927	404 \$43,694	385 \$44,762	158 \$48,795	644 \$48,284	417 \$52,368	685 \$56,339	747 \$59,910	133 \$56,726	2 \$126,739	0 \$0	0 \$0	3,923 \$51,414
50-54	33 \$50,892	249 \$42,518	316 \$42,440	350 \$44,824	149 \$49,852	657 \$48,020	404 \$49,599	624 \$56,077	763 \$60,129	512 \$64,496	127 \$61,791	6 \$70,984	6 \$53,114	4,190 \$55,114
55-59	35 \$56,627	216 \$52,160	278 \$47,051	225 \$47,235	149 \$47,529	607 \$51,293	426 \$50,036	537 \$52,637	640 \$60,131	463 \$67,132	453 \$71,266	115 \$68,703	115 \$56,589	4,144 \$56,589
60-64	22 \$41,645	98 \$55,337	157 \$50,014	140 \$49,229	87 \$53,930	426 \$52,462	248 \$55,710	330 \$54,197	368 \$59,113	190 \$65,687	155 \$75,775	219 \$73,892	219 \$58,191	2,440 \$58,191
65 & Over	3 \$51,104	27 \$56,481	38 \$54,904	67 \$48,294	38 \$60,947	202 \$50,345	116 \$51,313	82 \$62,577	83 \$59,046	47 \$70,957	25 \$79,227	81 \$83,331	81 \$58,759	809 \$58,759
Total	1,328 \$41,028	2,616 \$44,520	3,104 \$43,359	2,731 \$45,259	1,220 \$48,698	4,633 \$49,585	2,568 \$52,215	2,982 \$55,622	2,772 \$59,454	1,345 \$65,029	762 \$71,011	421 \$74,249	421 \$51,200	26,482 \$51,200

**Distribution of Active Members by Age and by Years of Service
Hybrid Plan Members, Teachers
As of 06/30/2010**

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	63 \$42,265	86 \$42,527	5 \$41,236	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	154 \$42,378
25-29	92 \$43,278	325 \$44,386	311 \$45,034	242 \$47,092	79 \$48,608	56 \$51,033	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,105 \$45,707
30-34	29 \$42,344	158 \$48,395	193 \$47,949	195 \$48,792	108 \$49,806	564 \$53,348	40 \$55,735	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,287 \$50,769
35-39	579 \$46,647	167 \$52,009	151 \$54,804	151 \$55,704	50 \$52,095	357 \$56,640	468 \$58,823	44 \$65,700	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,967 \$53,699
40-44	16 \$49,079	97 \$54,498	108 \$54,473	107 \$56,091	39 \$57,580	226 \$61,702	287 \$61,925	472 \$64,255	39 \$68,175	0 \$0	0 \$0	0 \$0	0 \$0	1,391 \$61,040
45-49	15 \$54,488	77 \$50,859	63 \$57,030	91 \$57,722	45 \$57,478	175 \$60,535	134 \$65,054	228 \$66,000	425 \$69,945	24 \$73,089	1 \$93,626	0 \$0	0 \$0	1,278 \$64,240
50-54	13 \$49,157	65 \$53,975	56 \$58,339	59 \$55,087	32 \$67,233	161 \$65,392	142 \$65,615	170 \$71,450	291 \$70,315	195 \$76,155	22 \$78,862	0 \$0	0 \$0	1,206 \$67,873
55-59	14 \$44,868	44 \$48,099	47 \$64,784	53 \$59,925	26 \$60,729	168 \$61,734	145 \$67,289	192 \$71,108	284 \$75,527	179 \$78,535	181 \$83,149	20 \$78,989	20 \$0	1,353 \$71,295
60-64	10 \$44,287	17 \$43,382	34 \$57,717	34 \$58,082	25 \$63,937	107 \$62,958	112 \$63,216	154 \$71,675	201 \$74,229	99 \$82,397	72 \$93,637	137 \$92,085	137 \$0	1,002 \$73,858
65 & Over	2 \$47,309	10 \$71,484	12 \$61,717	11 \$47,511	9 \$64,896	43 \$63,381	39 \$71,328	44 \$75,469	36 \$88,527	36 \$91,385	29 \$113,330	91 \$107,648	91 \$0	362 \$85,757
Total	833 \$45,964	1,046 \$48,465	980 \$51,257	943 \$52,492	413 \$54,646	1,857 \$58,194	1,367 \$62,315	1,304 \$67,811	1,276 \$72,417	533 \$79,004	305 \$88,220	248 \$96,739	248 \$0	11,105 \$61,087

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	23,242	\$ 2,118	10,773	\$ 1,457	1,748	\$ 1,857
	<u>Service</u>		<u>Service</u>		<u>Service</u>	
Total	22,624	\$ 2,146	9,988	\$ 1,515	1,654	\$ 1,899
General Employees - male	5,711	1,946	3,371	1,414	496	2,043
General Employees - female	7,550	1,434	3,670	1,124	712	1,598
Teachers - male	1,772	2,735	1,016	2,224	126	2,552
Teachers - female	4,711	2,547	1,931	2,060	320	2,085
Police and Firefighters	2,880	3,390	-	-	-	-
	<u>Ordinary Disability</u>		<u>Ordinary Disability</u>		<u>Ordinary Disability</u>	
Total	281	\$ 799	652	\$ 755	84	\$ 1,130
General Employees - male	101	808	312	737	43	1,197
General Employees - female	99	603	264	663	26	980
Teachers - male	9	1,268	31	1,237	7	1,073
Teachers - female	36	1,046	45	1,090	8	1,307
Police and Firefighters	36	947	-	-	-	-
	<u>Accidental Disability</u>		<u>Accidental Disability</u>		<u>Accidental Disability</u>	
Total	337	\$ 1,306	133	\$ 557	10	\$ 1,170
General Employees - male	128	1,242	78	586	6	1,120
General Employees - female	76	1,109	50	499	3	1,096
Teachers - male	2	2,311	1	495	-	-
Teachers - female	4	2,453	4	743	1	1,693
Police and Firefighters	127	1,437	-	-	-	-

Summary of Pensions in Force by Age and Type**General Employees**

Age	Type of Pension			
	Total	Service	Ordinary Disability	Accidental Disability
Total	22,696	21,510	845	341
	Contributory			
Total	13,665	13,261	200	204
30-39	1	1	-	-
40-44	1	1	-	-
45-49	23	14	3	6
50-54	53	35	10	8
55-59	554	520	21	13
60-64	1,207	1,156	28	23
65-69	1,711	1,663	21	27
70-74	1,975	1,916	26	33
75-79	2,658	2,601	29	28
80-84	2,665	2,603	26	36
85-89	1,909	1,872	19	18
90-94	735	710	13	12
95-99	160	156	4	-
100 & over	13	13	-	-
	Noncontributory			
Total	7,745	7,041	576	128
30-39	2	-	2	-
40-44	9	-	6	3
45-49	30	-	27	3
50-54	78	2	57	19
55-59	473	318	130	25
60-64	1,564	1,382	163	19
65-69	2,610	2,447	136	27
70-74	1,671	1,611	43	17
75-79	856	842	7	7
80-84	363	353	5	5
85-89	83	80	-	3
90-94	6	6	-	-
95-99	-	-	-	-
100 & over	-	-	-	-
	Hybrid			
Total	1,286	1,208	69	9
30-39	-	-	-	-
40-44	2	-	2	-
45-49	5	-	4	1
50-54	14	2	9	3
55-59	247	217	27	3
60-64	621	599	21	1
65-69	308	302	5	1
70-74	71	70	1	-
75-79	14	14	-	-
80-84	3	3	-	-
85-89	1	1	-	-
90-94	-	-	-	-
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	10,024	9,876	136	12
Contributory				
Total	6,534	6,483	45	6
30-39	-	-	-	-
40-44	-	-	-	-
45-49	-	-	-	-
50-54	5	4	1	-
55-59	151	149	2	-
60-64	844	835	9	-
65-69	1,189	1,178	10	1
70-74	1,250	1,243	7	-
75-79	1,357	1,351	3	3
80-84	955	949	4	2
85-89	484	480	4	-
90-94	206	203	3	-
95-99	65	63	2	-
100 & over	28	28	-	-
Noncontributory				
Total	3,028	2,947	76	5
30-39	-	-	-	-
40-44	2	-	2	-
45-49	4	-	4	-
50-54	3	-	2	1
55-59	102	82	19	1
60-64	780	755	24	1
65-69	1,163	1,141	21	1
70-74	628	624	4	-
75-79	235	235	-	-
80-84	77	76	-	1
85-89	30	30	-	-
90-94	3	3	-	-
95-99	1	1	-	-
100 & over	-	-	-	-
Hybrid				
Total	462	446	15	1
30-39	-	-	-	-
40-44	-	-	-	-
45-49	-	-	-	-
50-54	3	-	3	-
55-59	85	80	5	-
60-64	231	223	7	1
65-69	116	116	-	-
70-74	20	20	-	-
75-79	4	4	-	-
80-84	3	3	-	-
85-89	-	-	-	-
90-94	-	-	-	-
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	3,043	2,880	36	127
30-39	2	-	-	2
40-44	3	-	3	-
45-49	43	33	5	5
50-54	199	187	3	9
55-59	530	504	7	19
60-64	797	768	3	26
65-69	642	607	5	30
70-74	385	370	3	12
75-79	207	193	3	11
80-84	116	112	-	4
85-89	92	80	4	8
90-94	25	24	-	1
95-99	2	2	-	-
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	9,988	\$ 1,514	7,041	\$ 1,262	2,947	\$ 2,115
Less than 5	6	611	3	859	3	362
5-9	28	310	24	255	4	637
10-14	2,173	500	1,872	473	301	666
15-19	1,365	808	1,125	765	240	1,009
20-24	1,257	1,033	949	959	308	1,263
25-29	1,029	1,620	722	1,453	307	2,012
30-34	2,610	2,232	1,419	2,032	1,191	2,470
35 and over	1,520	2,721	927	2,474	593	3,108

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	9,988	\$ 1,515	7,041	\$ 1,263	2,947	\$ 2,117
Less than 5	3,672	1,428	2,764	1,247	908	1,977
5-9	3,626	1,577	2,425	1,283	1,201	2,169
10-14	1,558	1,380	1,145	1,099	413	2,160
15-19	1,046	1,828	654	1,571	392	2,259
20-24	84	1,239	51	861	33	1,822
25 and over	2	1,411	2	1,411	-	-

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	22,624	\$ 2,146	13,261	\$ 1,655	6,483	\$ 2,598	2,880	\$ 3,390
Less than 5	17	416	15	419	2	395	-	-
5-9	947	310	756	319	185	273	6	387
10-14	1,734	601	1,467	587	230	622	37	991
15-19	2,178	997	1,774	948	348	1,167	56	1,505
20-24	2,866	1,470	2,139	1,329	610	1,776	117	2,460
25-29	6,588	2,364	3,083	1,859	1,747	2,435	1,758	3,177
30-34	5,924	2,951	2,535	2,469	2,560	3,052	829	4,116
35 and over	2,370	3,278	1,492	2,896	801	3,863	77	4,606

**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	22,624	\$ 2,146	13,261	\$ 1,655	6,483	\$ 2,598	2,880	\$ 3,390
Less than 5	2,447	3,001	1,326	2,313	541	3,424	580	4,182
5-9	3,439	2,819	1,700	2,192	1,080	3,297	659	3,654
10-14	2,810	2,221	1,631	1,690	723	2,733	456	3,305
15-19	5,632	2,377	3,139	1,891	1,842	2,858	651	3,359
20-24	4,079	1,632	2,542	1,316	1,263	2,062	274	2,579
25-29	2,709	1,343	1,923	1,154	675	1,705	111	2,425
30-34	1,123	1,137	762	949	240	1,392	121	1,818
35 and over	385	809	238	714	119	856	28	1,414

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	22,696	\$ 1,495	21,510	\$ 1,534	845	\$ 737	341	\$ 950	-	\$ -
Contributory										
Total	13,665	\$ 1,634	13,261	\$ 1,655	200	\$ 707	204	\$ 1,193	-	\$ -
Maximum	1,666	1,618	1,623	1,636	24	918	19	959	-	-
Option 1	950	1,109	897	1,122	30	776	23	998	-	-
Option 2	671	1,898	638	1,930	14	1,102	19	1,384	-	-
Option 3	333	2,488	323	2,527	7	816	3	2,215	-	-
Option 4	5,605	1,879	5,454	1,903	64	739	87	1,253	-	-
Option 5	4,440	1,339	4,326	1,354	61	453	53	1,136	-	-
Noncontributory										
Total	7,745	\$ 1,209	7,041	\$ 1,263	576	\$ 703	128	\$ 552	-	\$ -
Maximum	4,259	1,241	3,976	1,279	221	737	62	571	-	-
Option A	1,444	1,283	1,338	1,324	83	843	23	524	-	-
Option B	1,577	1,036	1,305	1,125	235	625	37	526	-	-
Option C	465	1,282	422	1,345	37	676	6	631	-	-
Hybrid										
Total	1,286	\$ 1,740	1,208	\$ 1,781	69	\$ 1,115	9	\$ 1,112	-	\$ -
Maximum	492	1,667	476	1,683	13	1,208	3	1,153	-	-
Option 1	96	1,750	92	1,754	3	1,895	1	943	-	-
Option 2	293	1,645	255	1,734	34	1,049	4	1,065	-	-
Option 3	194	2,039	186	2,074	7	1,218	1	1,344	-	-
Option 4	143	1,938	134	2,000	9	1,015	-	-	-	-
Option 5	68	1,400	65	1,430	3	747	-	-	-	-

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	10,024	\$ 2,419	9,876	\$ 2,437	136	\$ 1,136	12	\$ 1,633	-	\$ -
Contributory										
Total	6,534	\$ 2,588	6,483	\$ 2,598	45	\$ 1,091	6	\$ 2,406	-	\$ -
Maximum	933	2,835	923	2,852	10	1,263	-	-	-	-
Option 1	344	1,946	337	1,972	6	781	1	384	-	-
Option 2	229	2,648	228	2,652	1	1,651	-	-	-	-
Option 3	139	3,441	136	3,476	2	2,216	1	1,061	-	-
Option 4	2,431	2,924	2,416	2,934	13	1,164	2	2,586	-	-
Option 5	2,458	2,197	2,443	2,203	13	811	2	3,909	-	-
Noncontributory										
Total	3,028	\$ 2,090	2,947	\$ 2,117	76	\$ 1,150	5	\$ 693	-	\$ -
Maximum	1,981	2,146	1,930	2,171	47	1,221	4	778	-	-
Option A	485	2,144	478	2,158	7	1,163	-	-	-	-
Option B	382	1,781	360	1,830	21	1,018	1	354	-	-
Option C	180	1,986	179	1,994	1	491	-	-	-	-
Hybrid										
Total	462	\$ 2,183	446	\$ 2,217	15	\$ 1,198	1	\$ 1,693	-	\$ -
Maximum	202	1,987	196	2,010	6	1,238	-	-	-	-
Option 1	31	1,704	31	1,704	-	-	-	-	-	-
Option 2	94	2,113	90	2,149	3	1,180	1	1,693	-	-
Option 3	65	2,583	63	2,633	2	1,017	-	-	-	-
Option 4	38	2,918	36	3,029	2	925	-	-	-	-
Option 5	32	2,406	30	2,462	2	1,559	-	-	-	-

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	3,043	\$ 3,279	2,880	\$ 3,390	36	\$ 947	127	\$ 1,437	-	\$ -
Maximum	82	2,818	61	3,329	1	1,008	20	1,352	-	-
Option 1	29	3,136	23	3,260	1	2,122	6	2,659	-	-
Option 2	89	3,394	78	3,658	7	1,368	4	1,783	-	-
Option 3	21	3,575	18	3,934	2	1,133	1	1,993	-	-
Option 4	1,687	3,611	1,638	3,677	13	1,021	36	1,522	-	-
Option 5	1,134	2,810	1,062	2,924	12	489	60	1,259	-	-

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	1,682	\$ 1,792	1,621	\$ 1,814	55	\$ 1,206	6	\$ 1,059	-	\$ -
Contributory										
Total	368	\$ 2,552	368	\$ 2,552	-	\$ -	-	\$ -	-	\$ -
Maximum	70	2,581	70	2,581	-	-	-	-	-	-
Option 1	11	1,947	11	1,947	-	-	-	-	-	-
Option 2	35	2,585	35	2,585	-	-	-	-	-	-
Option 3	29	3,750	29	3,750	-	-	-	-	-	-
Option 4	187	2,485	187	2,485	-	-	-	-	-	-
Option 5	36	2,033	36	2,033	-	-	-	-	-	-
Noncontributory										
Total	739	\$ 1,251	702	\$ 1,263	33	\$ 1,025	4	\$ 1,016	-	\$ -
Maximum	352	1,250	344	1,249	7	1,354	1	887	-	-
Option A	165	1,236	161	1,230	4	1,479	-	-	-	-
Option B	190	1,267	166	1,321	21	868	3	1,059	-	-
Option C	32	1,238	31	1,271	1	229	-	-	-	-
Hybrid										
Total	575	\$ 2,000	551	\$ 2,024	22	\$ 1,476	2	\$ 1,144	-	\$ -
Maximum	217	1,993	213	2,007	4	1,236	-	-	-	-
Option 1	37	2,208	35	2,180	1	4,450	1	943	-	-
Option 2	125	1,740	114	1,765	11	1,480	-	-	-	-
Option 3	85	2,504	83	2,537	1	899	1	1,344	-	-
Option 4	75	2,050	70	2,112	5	1,181	-	-	-	-
Option 5	36	1,437	36	1,437	-	-	-	-	-	-

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	\$ 2,501	463	\$ 2,516	5	\$ 1,098	-	\$ -	-	\$ -
	Contributory									
Total	100	\$ 3,566	100	\$ 3,566	-	-	-	\$ -	-	\$ -
Maximum	22	3,546	22	3,546	-	-	-	-	-	-
Option 1	-	-	-	-	-	-	-	-	-	-
Option 2	12	3,501	12	3,501	-	-	-	-	-	-
Option 3	9	3,280	9	3,280	-	-	-	-	-	-
Option 4	42	3,949	42	3,949	-	-	-	-	-	-
Option 5	15	2,747	15	2,747	-	-	-	-	-	-
	Noncontributory									
Total	193	\$ 2,030	191	\$ 2,040	2	\$ 1,019	-	\$ -	-	\$ -
Maximum	103	2,087	102	2,099	1	830	-	-	-	-
Option A	36	2,024	35	2,047	1	1,207	-	-	-	-
Option B	44	1,938	44	1,938	-	-	-	-	-	-
Option C	10	1,873	10	1,873	-	-	-	-	-	-
	Hybrid									
Total	175	\$ 2,412	172	\$ 2,434	3	\$ 1,151	-	\$ -	-	\$ -
Maximum	64	2,146	64	2,146	-	-	-	-	-	-
Option 1	7	1,886	7	1,886	-	-	-	-	-	-
Option 2	44	2,438	42	2,495	2	1,235	-	-	-	-
Option 3	29	2,729	28	2,791	1	985	-	-	-	-
Option 4	18	2,980	18	2,980	-	-	-	-	-	-
Option 5	13	2,428	13	2,428	-	-	-	-	-	-

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	144	\$ 4,386	142	\$ 4,447	2	\$ -	-	\$ -	-	\$ -
Maximum	6	4,090	6	4,090			-	-	-	-
Option 1	3	4,027	2	4,979	1	2,122	-	-	-	-
Option 2	5	4,576	5	4,576			-	-	-	-
Option 3	1	4,587	1	4,587			-	-	-	-
Option 4	105	4,601	104	4,635	1	1,036	-	-	-	-
Option 5	24	3,646	24	3,646	-	-	-	-	-	-

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. *Decrements* - 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.

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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.