

**EMPLOYEES RETIREMENT SYSTEM OF TEXAS**

**ACTUARIAL VALUATION  
AUGUST 31, 2011**

**FOR THE FISCAL YEAR  
ENDING AUGUST 31, 2011  
AND THE PLAN YEAR  
BEGINNING SEPTEMBER 1, 2011**

November 21, 2011

Board of Trustees  
Employees Retirement System of Texas  
1801 Brazos St.  
Austin, TX 78701

Members of the Board:

This report presents the results of the annual actuarial valuation of the Employees Retirement System of Texas as of August 31, 2011, prepared in accordance with the Texas Government Code. The valuation takes into account all of the promised benefits to which members are entitled as of August 31, 2011, including pension and survivor benefits.

The valuation was based on the actuarial assumptions and methods as adopted by the Board of Trustees, including a valuation interest rate of 8% per annum compounded annually. Projected future salaries were adjusted to reflect legislated across-the-board salary increases. All other actuarial cost methods and procedures are the same as the prior valuation.

The actuarial assumptions and methods comply with the parameters set forth in Governmental Accounting Standards Nos. 25 and 27.

### **Assets and Membership Data**

The Retirement System reported to the actuary the individual data for members of the System as of the valuation date. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Retirement System.

### **Funding Adequacy**

The actuary uses an actuarial cost method to determine the portion of the System's liabilities accrued by the members as of the valuation date and the portion that is attributable to future years of service. The portion of the liabilities accrued as of August 31, 2011 — the accrued liability for funding purposes — is equal to \$29,050,127,601; while the actuarial value of the System's assets equals \$23,997,444,804. Two measures of the security of promised benefits — the unfunded accrued liability and the funded ratio — can be obtained by comparing the liability and the assets. The unfunded accrued liability for funding purposes as of August 31, 2011 — the amount of liabilities in excess of the assets — is equal to \$5,052,682,797. The funded ratio — the ratio of the assets to the liability — is 82.6% for funding purposes. This funded ratio is lower than the August 31, 2010 funded ratio of 83.2%. The decrease in the funded ratio is primarily due to the recognition of deferred asset losses in the calculation of the actuarial value of assets, the effect of which was offset in part by the fact that there were no legislated across-the-board salary increases for the biennium.

Section 811.006 of the Texas Government Code provides that changes in contribution rates or benefit provisions may not be adopted if such changes would cause the time required to amortize the unfunded accrued liability to equal or exceed 31 years. That is, under the Texas Government Code, the System is considered actuarially sound if the current total contribution rate covers the plan's administrative expenses and the cost of benefits being earned during the year by current active members – the normal cost – as well as the cost of amortizing any unfunded accrued liability over a maximum of 31 years. The total normal cost rate, which is calculated under the cost method to be a level percentage of active member payroll, is 12.31% for funding purposes. The level contribution rate needed to fund the normal cost and amortize the \$5,052,682,797 unfunded accrued liability over 31 years, is 17.47%.

The current 12.50% total contribution rate, which is comprised of 6.50% member contributions and 6.00% employer contributions, falls short of the section 811.006 standard by 4.97% of payroll. The 12.50% rate is sufficient to cover the normal cost portion of the actuarially sound contribution rate. Although, based on the results of the current actuarial valuation, the unfunded accrued liability will never be amortized with a 12.50% total contribution rate. At this rate, the unfunded accrued liability is expected to grow indefinitely. Therefore, the current expected funding period is infinite, as was the funding period developed in the 2010 actuarial valuation.

### **Financial Results and Membership Data**

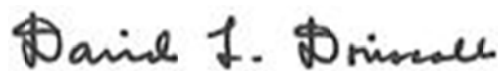
The valuation report shows detailed summaries of the financial results of the valuation and membership data used in preparing this valuation. The actuary prepared supporting schedules included in the Actuarial and Statistical Sections of the Employees Retirement System of Texas Comprehensive Annual Financial Report. The actuary prepared the trend data schedules included in the Financial Section of the Employees Retirement System of Texas Comprehensive Annual Financial Report.

The undersigned qualified actuaries completed the valuation in accordance with accepted actuarial procedures as prescribed by the Actuarial Standards Board. We are members of the American Academy of Actuaries and are experienced in performing actuarial valuations of public employee retirement systems. To the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally accepted actuarial principles and practice, and we are available to answer questions about it.

Respectfully submitted,



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Director, Consulting Actuary



David L. Driscoll, FSA, EA, MAAA  
Principal, Consulting Actuary

# EMPLOYEES RETIREMENT SYSTEM OF TEXAS

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## **Executive Summary**

This report presents the actuarial valuation as of August 31, 2011 for the Employees Retirement System of Texas. The principal valuation results include:

- The accrued liability for funding purposes, which is \$29,050,127,601.
- The actuarial value of assets, which is \$23,997,444,804.
- The unfunded accrued liability (the difference between the liability and the assets), which is \$5,052,682,797 for funding purposes.
- The normal cost for funding purposes, which is 12.31% of payroll or \$713,387,288 for FY 2012.
- The actuarially sound contribution rate needed to fund the normal cost and amortize the unfunded accrued liability over 31 years, as specified by section 811.006 of the Texas Government Code, which is 17.47% of payroll, or \$1,012,418,840 for FY 2012.
- The time required to fund the normal cost and amortize the unfunded accrued liability, based on the current total 12.50% contribution rate, which is infinite. (That is, the current 12.50% rate will never fund the normal cost and amortize the current unfunded accrued liability.)
- The funded status of the plan determined as of August 31, 2011 based on the accrued liability and the actuarial value of assets as of that date, which is 82.6% for funding purposes.
- The determination of the net (gain) or loss as of August 31, 2011, which is a loss of \$614,732,618. This net loss is primarily due to the recognition of deferred asset losses in the calculation of the actuarial value of assets.
- Annual disclosure as of August 31, 2011 as required by Statement Nos. 25 and 27 of the Governmental Accounting Standards Board.

The valuation was based on membership and financial data submitted by the Retirement System.

## **Changes Since Last Year**

### **Legislative and Administrative Changes**

The legislature has budgeted for no across-the-board salary increases for the upcoming biennium.

The benefit and contribution provisions are summarized in Table 13.

**Actuarial Assumptions and Methods**

There have been no changes in actuarial assumptions and methods since the last valuation.

The actuarial assumptions and methods used to develop the amounts in Tables 7, 8 and 9 meet the parameters set for the disclosures presented in the Financial Section by Government Accounting Standards Board (GASB) Statement No. 25, except that current contribution rates may not amortize the unfunded accrued liabilities. For the GASB purposes the accrued liability is based on the total liability less the value of future normal cost for each member based on the benefits in effect for each member.

In our opinion, these assumptions generate reasonable valuation results, and the assumptions individually and in the aggregate relate reasonably to the past and anticipated experience of ERS.

## Summary of Principal Results

Summarized below are the principal financial results for the Employees Retirement System of Texas based upon the actuarial valuation as of August 31, 2011. Comparable results from the August 31, 2010 valuation are also shown.

Item	August 31, 2011	August 31, 2010
<b>Demographics</b>		
<u>Active Members</u>		
• Number	137,293	142,490
• Average Annual Pay	\$ 41,620	\$ 41,022
<u>Inactive Members</u>		
• Vested		
• Number	16,252	15,572
• Accumulated Member Contributions	\$ 579,257,127	\$ 531,911,902
• Non-vested		
• Number	68,648	63,165
• Accumulated Member Contributions	\$ 153,239,211	\$ 132,056,048
<u>Retirees and Beneficiaries</u>		
• Members Receiving Benefits		
• Number	83,430	79,311
• Average Annual Benefit Payment	\$ 18,614	\$ 18,372
<b>Total Contribution Rates</b>		
• Actuarially Sound Rate (funds normal cost and amortizes unfunded accrued liability over 31 years, per Texas law)	17.47%	17.07%
• Actual Contribution Rate	12.50%	13.45%
<b>Total Normal Cost*</b>		
• Percent of Payroll	12.31%	12.30%
• Dollars	\$ 713,387,288	\$ 729,407,327
<b>Actuarial Funded Status*</b>		
• Accrued Liability	\$ 29,050,127,601	\$ 28,411,814,508
• Actuarial Value of Assets	<u>23,997,444,804</u>	<u>23,628,566,500</u>
• Unfunded Accrued Liability	\$ 5,052,682,797	\$ 4,783,248,008
• Funded Ratio	82.6%	83.2%

\* The actuarial accrued liability is based on a total liability which is based on the benefit provisions in effect for each active member and a normal cost rate which is based on the benefits in effect for members hired after August 31, 2009.

## **Plan Experience**

The rate of investment return on the market value of plan assets for the fiscal year ending August 31, 2011 was 12.6%. For the same period, the rate of investment return on the actuarial (smoothed) value of assets was approximately 5.0%, which is less than the assumed return of 8.0%. As a result, there was an actuarial loss from investment experience. As of August 31, 2011, the market value of assets was \$2.79 billion less than the actuarial value.

The actuarial loss on investments combined with other small gains on salary increase and demographic experience resulted in a net actuarial loss of \$614.7 million.

The unfunded accrued liability of \$4,783.2 million as of the prior valuation date increased by approximately \$269.5 million, to \$5,052.7 million, as of August 31, 2011. Detailed descriptions of the reasons for the change in the unfunded accrued liability are shown in Tables 5 and 6.

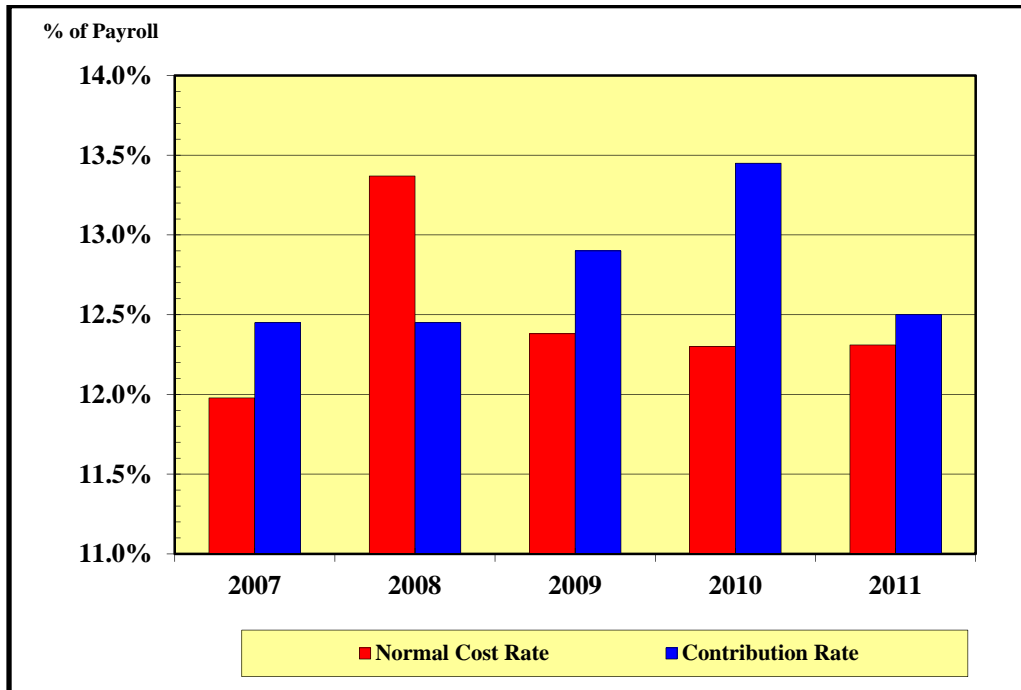
## Five-Year History of Principal Financial Results

### Five-Year History of Contribution Rates

Plan Year Beginning September 1	Total Contribution Rate	Normal Cost % of Payroll	Normal Cost Dollars	Expected Contribution Toward UAL
2007	12.45%	11.98%	\$629,396,032	\$24,692,499
2008	12.45%	13.37%	719,242,802	(49,491,651)
2009	12.90%	12.38%*	719,824,862*	30,234,970
2010	13.45%	12.30%*	729,407,327*	68,196,620
2011	12.50%	12.31%*	713,387,288*	11,010,852

The following chart shows a five-year history of normal cost rates and contribution rates:

### Five-Year History of Normal Cost Rate



\* The normal cost is based on the benefits in effect for members hired after August 31, 2009.

## Net (Gain) Loss

The results of the valuation as of August 31, 2011 determine the net (gain) or loss for the year ended August 31, 2011. The net loss is \$614.7 million.

The analysis of the net loss for the fiscal year ended August 31, 2011 is shown in Table 6. The following table shows a five-year history of the net (gains) or losses.

### Five-Year History of (Gains) or Losses

Fiscal Year Ended August 31	Net (Gain) or Loss
2007	\$ 23,000,000
2008	307,400,000
2009	1,150,100,000
2010	1,162,500,000
2011	614,700,000

## Funding Period

The funding period is the number of years required to liquidate the unfunded accrued liability. The following table shows a five-year history of the funding period along with the member and employer contribution rates:

Plan Year Beginning September 1	Funding Period	Contribution Rate	
		Member	Employer
2007	Infinite	6.00%	6.45%
2008	Infinite	6.00	6.45
2009	Infinite	6.45	6.45
2010	Infinite	6.50	6.95
2011	Infinite	6.50	6.00

## Funded Ratio

The System's total funded ratio is measured by comparing the actuarial value of assets with the accrued liability. The accrued liability is the present value of benefits accumulated to date under the System's funding method and reflects future pay increases for active employees.

On this basis, the System's funded ratio is 82.6% for funding purposes as of August 31, 2011. This funded ratio is based on an actuarial value of assets of \$23,997,444,804 and an accrued liability of \$29,050,127,601 for funding purposes.

### Reasons for Change in the Total Funded Ratio

The total funded ratio for funding purposes decreased from 83.2% as of August 31, 2010 to 82.6% as of August 31, 2011. The decrease is primarily due to the recognition of deferred asset losses in the calculation of the actuarial value of assets, the effect of which was offset in part by the fact that there were no legislated across-the-board salary increases for the biennium.

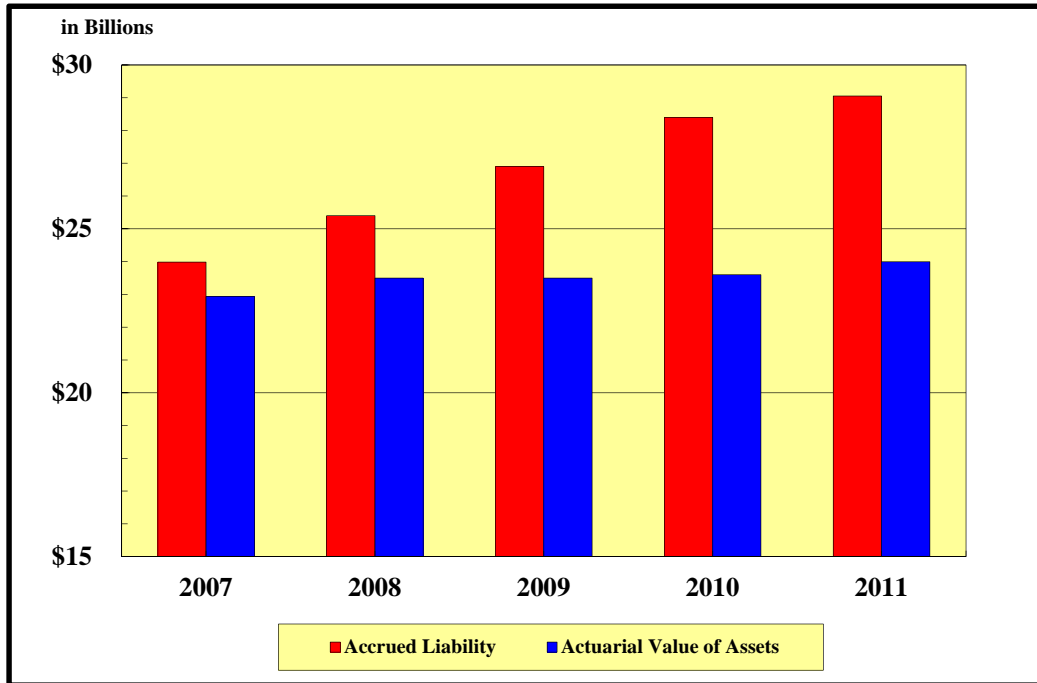
### Five-Year History of Funded Ratio (\$ Amounts in Thousands)

Valuation as of August 31	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio
2007	\$23,987,165	\$22,938,947	\$1,048,218	95.6%
2008	25,403,280	23,511,918	1,891,362	92.6
2009	26,907,779*	23,509,622	3,398,157	87.4
2010	28,411,815*	23,628,567	4,783,248	83.2
2011	29,050,128*	23,997,445	5,052,683	82.6

\* The actuarial accrued liability is based on a total liability which is based on the benefit provisions in effect for each active member and a normal cost rate which is based on the benefits in effect for members hired after August 31, 2009.

The following chart shows a five-year history of the accrued liability and the actuarial value of assets:

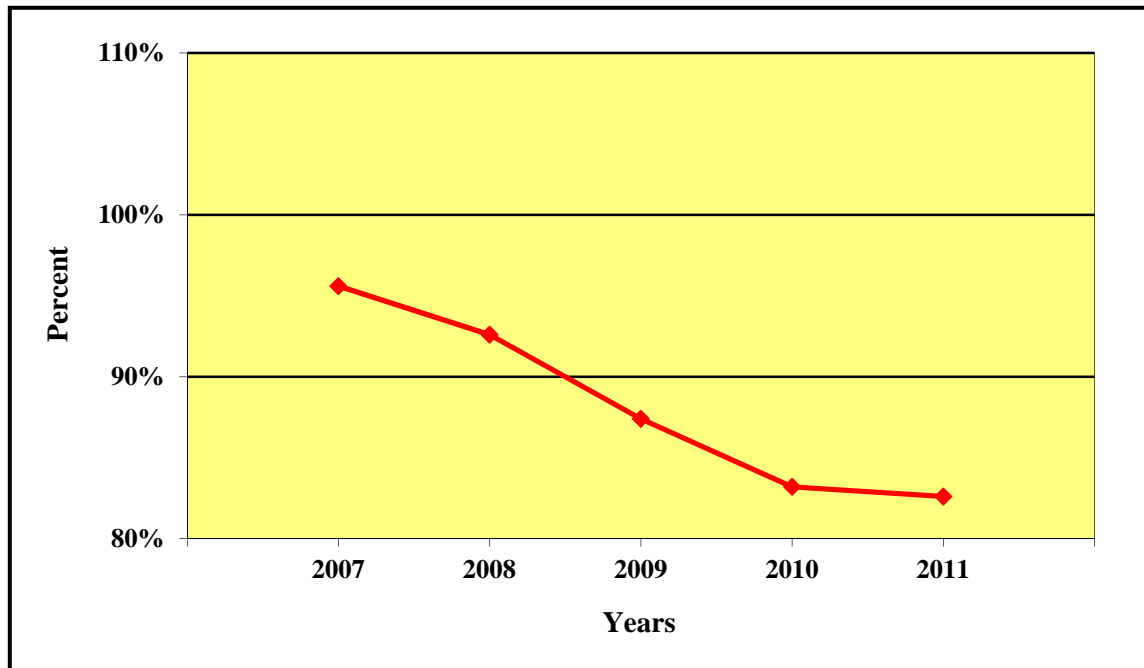
### Five-Year History of Accrued Liability and Actuarial Value of Assets



- \* The actuarial accrued liability is based on a total liability which is based on the benefit provisions in effect for each active member and a normal cost rate which is based on the benefits in effect for members hired after August 31, 2009.

The following chart shows a five-year history of the funded ratio:

**Five-Year History of Funded Ratio (2007 - 2011)**



\* The actuarial accrued liability is based on a total liability which is based on the benefit provisions in effect for each active member and a normal cost rate which is based on the benefits in effect for members hired after August 31, 2009.

## **GASB No. 25 Disclosure**

Statement No. 25 of the Governmental Accounting Standards Board (GASB) established reporting standards for the annual financial reports of defined benefit pension plans. Beginning with the fiscal year ending August 31, 1996, the System has prepared the plan's financial statements in accordance with GASB No. 25. The statement requires disclosure of the "schedule of funding progress" and the "schedule of employer contributions" in the System's financial statements.

The "schedule of funding progress" shows historical trend information about the System's actuarial value of assets, the accrued liability and the unfunded accrued liability. The actuarial funded ratio is measured by comparing the actuarial value of assets with the accrued liability. The accrued liability and the corresponding normal cost rate are based on the benefit provisions in effect for each active member and reflect future pay increases for active employees. On this basis, the System's funded ratio is 84.5% as of August 31, 2011. This funded ratio is based on an actuarial value of assets of \$23,997,444,804 and an accrued liability of \$28,398,213,145. Table 9 shows the schedule of funding progress information.

The "schedule of employer contributions" shows historical trend information about the employer's annual required contribution (ARC) for pensions and the percentage of the ARC contributed to the System. The ARC is equal to the employer's normal cost plus the amount to amortize the unfunded accrued liability over a period no longer than 30 years. For years ending on or before August 31, 2006 (based on the results of the August 31, 2005 and prior valuations) the maximum amortization period for calculating the GASB ARC was 40 years. The ARC and the actual employer percentage contributed for the six fiscal years ending August 31, 2011 are shown in Table 8. The State of Texas Government Code requires that the maximum amortization period allowed for funding the plan is 31 years. In addition, the normal cost rates are derived differently for accounting purposes and State funding purposes. As a result, there are different contribution requirements for accounting purposes and for State funding purposes.

## Rate of Return

The investment return of the trust fund (i.e. total return including both realized and unrealized gains and losses) for fiscal years 2007 through 2011 is shown in the table below. The return based on the actuarial value of assets used for determining annual contribution rates is also shown.

The rate of return on market value reflects the investment earnings on the market value of assets from the beginning of the fiscal year to the end of the fiscal year. The actuarial assets are the assets recognized for valuation purposes. Actuarial assets are based on a smoothed market value that spreads the difference between the actual and expected return over a period of time. The rate of return on the actuarial value of assets is a measure of the increase in the actuarial value of assets from the beginning of the fiscal year to the end of the fiscal year.

### Five Year History of Asset Returns

As of 8/31	Asset Values		Rates of Return		
	Market	Actuarial	Market*	Actuarial	Assumed
2007	\$ 23,479,671,451	\$ 22,938,947,005	13.9%	8.6%	8.0%
2008	21,464,265,123	23,511,918,382	(4.6%)	5.7%	8.0%
2009	19,097,775,054	23,509,621,791	(6.6%)	3.2%	8.0%
2010	19,580,610,447	23,628,566,500	6.7%	3.6%	8.0%
2011	21,204,091,002	23,997,444,804	12.6%	5.0%	8.0%

Compound Rate of Return (five years):                      4.0%                      5.2%

\* Market Value Rates of Return provided by J.P. Morgan Chase & Co., ERS Master Trust Custodian.

**TABLE 1**  
**SUMMARY OF RESULTS OF ACTUARIAL VALUATION**  
**AS OF AUGUST 31, 2011**

Item	Amount
<b>Participant Data</b>	
1. Number of Participants	
a) Active Participants	137,293
b) Inactive Members	84,900
c) Annuitants	83,430
d) Total	<u>305,623</u>
2. Reported Payroll (August Payroll of Active Members)	\$ 5,714,097,919
3. Valuation Payroll (Expected Covered Payroll for 2012 Plan Year)	\$ 5,795,185,115
4. Annual Benefits	\$ 1,552,999,200
<b>Valuation Results</b>	
5. Accrued Liability:*	
a) Active Participants	\$ 13,535,523,472
b) Inactive Members	1,189,426,332
c) Annuitants	14,325,177,797
d) Total	<u>\$ 29,050,127,601</u>
6. Actuarial Value of Assets	\$ 23,997,444,804
7. Unfunded Accrued Liability: (Item 5d - Item 6)	\$ 5,052,682,797
8. Funded Status: (Item 6 / Item 5d)	82.6 %
9. Funding Period	Infinite
10. Total Normal Cost	
a) Normal Cost*	\$ 698,899,325
b) Administrative Expenses (0.25% x Item 3)	14,487,963
c) Total	<u>\$ 713,387,288</u>
d) Percentage of Payroll	12.31 %
<b>Allocation of Contribution Rate</b>	
11. a) Employer Rate	6.00 %
b) Member Rate	6.50
c) Total Contribution Rate	<u>12.50 %</u>
d) Normal Cost*	12.31 %
e) Amortization Rate Toward Unfunded Accrued Liability	0.19
f) Total Contribution Rate	<u>12.50 %</u>
12. Contribution Rate Needed to Fund Normal Cost Plus Amortize the Unfunded Accrued Liability Over 31 Years	17.47 %

\* The actuarial accrued liability is based on a total liability which is based on the benefit provisions in effect for each active member and a normal cost rate which is based on the benefits in effect for members hired after August 31, 2009.

**TABLE 2**  
**SECURITY OF PROMISED BENEFITS**  
**UNFUNDED ACCRUED LIABILITY**  
**FUNDED STATUS**

Item	August 31, 2011	August 31, 2010
1. Accrued Liability*		
a. Active Participants	\$ 13,535,523,472	\$ 13,929,617,151
b. Participants with Deferred Benefits	1,189,426,332	1,074,374,168
c. Participants Receiving Benefits	<u>14,325,177,797</u>	<u>13,407,823,189</u>
d. Total All Participants	\$ 29,050,127,601	\$ 28,411,814,508
2. Actuarial Value of Assets	<u>23,997,444,804</u>	<u>23,628,566,500</u>
3. Unfunded Accrued Liability (1d - 2)	\$ 5,052,682,797	\$ 4,783,248,008
4. Funded Status: (2 / 1d)	82.6%	83.2%

The security of promised benefits can be measured by comparing the accrued liability to the actuarial value of assets. As shown above, as of August 31, 2011, the accrued liability exceeds assets by \$5,052,682,797.

Another measure of the security of promised benefits is the funded status. The funded status is the ratio of actuarial assets to the accrued liability. As of August 31, 2011, the funded status is 82.6%.

Both valuations were based on the same actuarial methods and assumptions and the same plan provisions.

\* The actuarial accrued liability is based on a total liability which is based on the benefit provisions in effect for each active member and a normal cost rate which is based on the benefits in effect for members hired after August 31, 2009.

**TABLE 3**

**SUMMARY RECONCILIATION OF MARKET VALUE OF ERS PLAN ASSETS  
AS OF AUGUST 31, 2011**

Item	Amount
1. Market Value of Assets as of August 31, 2010	\$ 19,580,610,447
2. Contributions for Plan Year	
a. State (including membership fees)	\$ 414,083,912
b. Member (including penalty interest)	425,811,039
c. Total	<u>839,894,951</u>
3. Disbursements for Plan Year	
a. Benefit payments and refunds	\$ (1,664,600,613)
b. Net Transfers from TRS	52,143,367
c. Administrative expenses	<u>(18,849,788)</u>
d. Total	<u>(1,631,307,034)</u>
4. Market Value of Assets as of August 31, 2011	\$ 21,204,091,002
5. Net Investment Income* (4 - 1 - 2c - 3d)	\$ 2,414,892,638
6. Estimated Rate of Return on Invested Assets**	12.6%

\* Net Investment Income is the change in the value of assets for reasons other than contributions and disbursements.

\*\* Market Value Rates of Return provided by J.P. Morgan Chase & Co., ERS Master Trust Custodian.

**TABLE 4**  
**DERIVATION OF ACTUARIAL VALUE OF ERS PLAN ASSETS**  
**AS OF AUGUST 31, 2011**

Item	Amount
1. Actuarial Value of Assets as of August 31, 2010	\$ 23,628,566,500
2. Contributions for Plan Year	
a. State (including membership fees)	\$ 414,083,912
b. Member (including penalty interest)	425,811,039
c. Total	<u>839,894,951</u>
3. Disbursements for Plan Year	
a. Benefit payments and refunds	\$ (1,664,600,613)
b. Net Transfers from TRS	52,143,367
c. Administrative expenses	<u>(18,849,788)</u>
d. Total	(1,631,307,034)
4. Expected Investment Income (8.00% per annum)	<u>1,858,628,837</u>
5. Expected Value of Actuarial Assets as of August 31, 2011 (Items 1 + 2c + 3d + 4)	\$ 24,695,783,254
6. Market Value of Assets as of August 31, 2011	\$ 21,204,091,002
7. Difference between Market Value and Expected Value (Item 6 - Item 5)	\$ (3,491,692,252)
8. Adjustment to Expected Value (20% * Item 7)	<u>(698,338,450)</u>
9. Actuarial Value of Assets as of August 31, 2011 (Item 5 + Item 8)	\$ 23,997,444,804
10. Estimated Rate of Return	5.0%

\* Net Investment Income is the change in the value of assets for reasons other than contributions and disbursements.

**TABLE 5****EXPLANATION OF CHANGE IN UNFUNDED ACCRUED LIABILITY  
DUE TO AMOUNT OF STATE CONTRIBUTIONS**

<b>Item</b>	<b>2011 Plan Year</b>
1. Unfunded Accrued Liability (UAL) at Beginning of Year This is the amount by which the actuarial value of assets falls short of / (exceeds) the accrued liability at the beginning of the year.	\$ 4,783,248,008
2. Expected Increase / (Decrease) in UAL if no contributions are made by the State during the year	
a. Employer-paid portion of benefits expected to be earned during the year by active members	\$ 342,067,875
b. Administrative Expenses paid from the trust during the year	18,849,788
c. Expected Lost / (Extra) Investment Income during the year on account of the beginning of year UAL and the Administrative Expenses paid during the year [ (8% x Item 1) + (4% x Item 2b) ]	<u>383,413,833</u>
d. Total expected Increase / (Decrease)	\$ 744,331,496
3. Amount of State Contribution during the year	\$ 414,083,912
4. Expected Investment Income during the year on the State Contribution (4% x Item 3)	\$ 16,563,356
5. Increase/(Decrease) in UAL at End of Year due to Amount of State Contributions During the Year (Item 2d - Item 3 - Item 4)	\$ 313,684,228

Actual covered payroll, State contributions, and administrative expenses were used above.

**TABLE 6**  
**ACTUARIAL (GAINS)/LOSSES**  
**FISCAL YEAR ENDING AUGUST 31, 2011**

Item	Amount
1. Unfunded Accrued Liability at August 31, 2010	\$ 4,783,248,008
2. Change due to State Contribution less than Normal Cost and Interest on the Unfunded Accrued Liability	313,684,228
3. Change due to Plan Amendments / Legislation	(658,982,057)
4. Change due to Assumptions	0
5. Expected Unfunded Accrued Liability at August 31, 2011	\$ 4,437,950,179
6. Actual Unfunded Accrued Liability at August 31, 2011	\$ 5,052,682,797
7. Total (Gains)/Losses (Item 6 minus item 5)	\$ 614,732,618
Components of (Gains)/Losses	
1. Actuarial Asset (Gains)/Losses	\$ 698,338,450
2. Liability (Gains)/Losses	
a. Pay Increases (Less)/Greater than Expected	\$ (56,484,176)
b. Non-Retired Demographic (Gains)/Losses	(62,791,439)
c. Post-Retirement Mortality (Gains)/Losses	(2,096,003)
d. Other	37,765,786
e. Total Liability (Gains)/Losses	(83,605,832)
3. Total of Components (Item 1 plus item 2)	\$ 614,732,618

The gain and loss analysis provides a measure of the impact of the demographic and economic factors on the results of the actuarial valuation, when compared to the actuarial assumptions used to anticipate these factors. The analysis is significant in providing a test of the adequacy of these assumptions over a period of time.

The demographic factors affecting the gain and loss analysis include the following:

- a. withdrawal from active membership
- b. mortality during active membership
- c. disability retirement
- d. service retirement; and
- e. mortality after retirement

The economic factors affecting the gain and loss analysis include the following:

- a. investment rate of return; and
- b. active member pay increases

During the fiscal year ended August 31, 2011, there was a net actuarial loss of \$614,732,618 incurred by the System due to demographic and economic experience when compared to the actuarial assumptions used to anticipate these factors.

**TABLE 7****GASB NOS. 25 AND 27 DISCLOSURE  
FOR 2011 AND 2012 PLAN YEARS****Schedule of Employer Contributions**

<b>Item</b>	<b>2012 Plan Year</b>	<b>2011 Plan Year</b>
1. Actuarial Valuation Date	August 31, 2011	August 31, 2010
2. Covered Payroll	\$ 5,795,185,115	\$ 5,926,331,865
3. Unfunded Accrued Liability at Beginning of Year	\$ 4,400,768,341	\$ 4,040,309,803
4. Employer's Normal Cost		
a. Benefit Normal Cost Rate	7.39%	7.52%
b. Administrative Expense Normal Cost Rate	0.25%	0.32%
c. Amount of Normal Cost: (2) * [(4a) + (4b)]	\$ 442,752,143	\$ 464,509,944
5. Contribution toward Unfunded Accrued Liability	264,272,952	242,626,859
6. Annual Required Contribution (ARC) (4c) + (5)	\$ 707,025,095	\$ 707,136,803
7. Employer Contributions (excluding membership fees)		\$ 413,602,718
8. Percentage Contributed: (7) / (6)		58.5%
9. Excess / (Deficient) Contributions: (7) - (6)		\$ (293,534,085)

**Annual Pension Cost and Net Pension Obligation**

<b>Item</b>	<b>2012 Plan Year</b>	<b>2011 Plan Year</b>
1. Annual Required Contribution (ARC)	\$ 707,025,095	\$ 707,136,803
2. Interest on Net Pension Obligation (NPO)	59,452,061	35,265,836
3. Adjustment to ARC	(44,627,354)	(26,472,100)
4. Annual Pension Cost (APC): (1) + (2) + (3)	\$ 721,849,802	\$ 715,930,539
5. Employer Contributions made		(413,602,718)
6. Increase (Decrease) in NPO: (4) + (5)		\$ 302,327,821
7. NPO at Beginning of Year	743,150,766	440,822,945
8. NPO at End of Year: (6) + (7)		\$ 743,150,766
9. Percent of APC Contributed: (5) / (4)		57.8%

## Notes:

- (1) ARC equals employer's normal cost plus the amount to amortize the UAAL (see "Notes to Trend Data"). For plan years ending after August 31, 2006, the maximum amortization period is 30 years (as required by GASB 25 and GASB 27).
- (2) The Covered Payroll for the 2012 plan year is an estimate based on valuation payroll as of August 31, 2011. For the 2011 plan year, the payroll is calculated from the actual member contributions for the fiscal year, and the required member contribution rate.
- (3) The ARC for the 2011 plan year is based on actual payroll and expenses for the plan year. The ARC for the 2012 plan year will be recalculated, based on actual payroll and expenses, at year-end.
- (4) The actuarial accrued liability and corresponding normal cost rate is based on the benefit provisions in effect for each active member.

**TABLE 8****SCHEDULE OF EMPLOYER CONTRIBUTIONS FOR PENSIONS  
GASB STATEMENT NO. 25 DISCLOSURE**

Fiscal Year Ended August 31	Annual Required Contribution	Percentage Contributed
2007	\$ 370,495,683	88.9 %
2008	378,236,402	90.3
2009	529,887,917	68.4
2010	630,326,400	63.4
2011	707,136,803	58.5
2012	707,025,095	N/A *

The benefit normal cost rates and beginning of year unfunded accrued liabilities used in determining the information in the above table were determined as part of the actuarial valuation as of one year before the dates indicated (i.e., the benefit normal cost rate and unfunded liability determined by the valuation completed as of August 31, 2010, was used in determining the ARC for the fiscal year ending August 31, 2011). The dollar amount of the ARC at the end of the fiscal year is then calculated based on the beginning of the year benefit normal cost rate and unfunded liability, the actual administrative expenses for the year and the actual covered payroll for the year.

Additional information as of the latest actuarial valuation follows:

Valuation Date:	August 31, 2011
Actuarial Cost Method:	Entry Age Normal
Amortization Method:	Level percent of payroll, open
Remaining Amortization Period:	30 Years
Asset Valuation Method:	20% of market plus 80% of expected actuarial value

Actuarial Assumptions:

- Investment Rate of Return	8.00%
- Payroll Growth	3.5%
- Projected Salary Increases	0% - 13.5%
Includes Inflation at	3.5%
- Cost-of-Living Adjustments	
Employee Class	None
Elected Class	3.5%

\* Calculation based on estimated fiscal year 2012 covered payroll. At the end of fiscal year 2012 the ARC will be recalculated based on actual 2012 covered payroll.

**TABLE 9**

**REQUIRED SUPPLEMENTARY INFORMATION  
SCHEDULE OF FUNDING PROGRESS FOR PENSIONS**  
(\$ Amounts in Thousands)

<b>Actuarial Valuation Date</b>	<b>(a) Actuarial Value of Assets</b>	<b>(b) Accrued Liability (AAL)</b>	<b>(c) (Overfunded) Unfunded AL (UAL) (b) - (a)</b>	<b>(d) Funded Ratio (a) / (b)</b>	<b>(e) Covered Payroll</b>	<b>(f) UAL as a Percentage of Covered Payroll (c) / (e)</b>
8/31/2006	\$ 21,780,437	\$ 22,884,917	\$ 1,104,480	95.2 %	\$ 5,051,330	21.9 %
8/31/2007	22,938,947	23,987,165	1,048,218	95.6	5,253,723	20.0
8/31/2008	23,511,918	25,403,280	1,891,362	92.6	5,379,527	35.2
8/31/2009	23,509,622	26,191,650	2,682,028	89.8	5,814,417	46.1
8/31/2010	23,628,567	27,668,876	4,040,309	85.4	5,930,141	68.1
8/31/2011	23,997,445	28,398,213	4,400,768	84.5	5,795,185	75.9

Item (f) shows the one-time contribution, as a percentage of payroll, that would bring the funded ratio to 100%. It is a measure of the significance of the unfunded accrued liability relative to the employer's capacity to pay for that liability.

The trend in items (d) and (f) provide information about whether the financial strength of the plan is improving or deteriorating over time. An improvement is indicated when item (d) (the funded ratio) is increasing and item (f) (the ratio of the unfunded accrued liability to payroll) is decreasing.

The actuarial accrued liability and corresponding normal cost rate is based on the benefit provisions in effect for each active member.

**TABLE 10**  
**SOLVENCY TEST**  
(\$ Amounts in Thousands)

Valuation Year	Aggregate Accrued Liabilities* for			Valuation Assets (4)	Portion of Accrued Liability Covered by Valuation Assets		
	Active Member Contributions (1)	Retirees and Beneficiaries (2)	Active Members (Employer Financed Portion) (3)		(1)	(2)	(3)
					%	%	%
2006	\$ 3,823,418	\$ 11,015,791	\$ 8,045,708	\$ 21,780,437	100.0 %	100.0 %	86.3 %
2007	4,059,742	11,519,930	8,407,493	22,938,947	100.0	100.0	87.5
2008	4,256,243	12,195,833	8,951,204	23,511,918	100.0	100.0	78.9
2009	4,460,644	12,648,155	9,798,980	23,509,622	100.0	100.0	65.3
2010	4,719,703	13,407,823	10,284,288	23,628,567	100.0	100.0	53.5
2011	4,943,684	14,325,178	9,781,266	23,997,445	100.0	100.0	48.3

### Funding Objective

The System's funding objective is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will pay all promised benefits when due – the ultimate test of financial soundness.

### Evaluation of Funding Objective

A short-term solvency test is one way of evaluating a system's progress under its funding program. In a short-term solvency test, the plan's present assets are compared with:

- (1) Active member contributions on deposit;
- (2) The liabilities for future benefits to present retirees; and
- (3) The employer-financed portion of liabilities for service already rendered by active members

In a system that has been following the level contribution rate of payroll financing principle, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retirees (liability 2) will be fully covered by present assets except in rare cases. In addition, the employer-financed portion of liabilities for service already rendered by active members (liability 3) will be partially or fully covered by the remainder of present assets.

The above table summarizes the results of the solvency test for the six most recent actuarial valuation dates. For example, at August 31, 2011, the actuarial value of assets equals \$23,997,444,804. These assets are sufficient to cover 100% of the \$4,943,684,000 in active member contributions, plus 100% of the \$14,325,178,000 liability for current retirees and beneficiaries, plus 48.3% of the \$9,781,226,000 employer-financed portion of liabilities for current active members.

\* The actuarial accrued liability for 2009 through 2011 is based on a total liability which is based on the benefit provisions in effect for each active member and a normal cost rate which is based on the benefits in effect for members hired after August 31, 2009.

**TABLE 11**  
**ACTUARIAL BALANCE SHEET FOR**  
**PLAN YEARS ENDING AUGUST 31, 2010 AND AUGUST 31, 2011**

Item	August 31, 2011	August 31, 2010
<b>Actuarial Assets</b>		
1. Actuarial Value of Assets at End of Year	\$ 23,997,444,804	\$ 23,628,566,500
2. Present Value of Future Normal Cost* for Benefits		
a. Member	\$ 2,315,543,150	\$ 2,451,318,951
b. Employer	1,980,679,987	2,093,049,258
c. Total	<u>\$ 4,296,223,137</u>	<u>\$ 4,544,368,209</u>
3. Total	\$ 28,293,667,941	\$ 28,172,934,709
<b>Liabilities</b>		
4. Present Value of Future Benefits		
a. Active Members		
Service Retirement	\$ 16,425,243,509	\$ 17,017,368,261
Disability Benefits	368,401,566	383,880,062
Death Before Retirement	221,286,410	230,994,643
Termination	816,815,124	841,742,394
Total Active	<u>\$ 17,831,746,609</u>	<u>\$ 18,473,985,360</u>
b. Inactive Members	1,189,426,332	1,074,374,168
c. Annuitants	14,325,177,797	13,407,823,189
d. Total	<u>\$ 33,346,350,738</u>	<u>\$ 32,956,182,717</u>
<b>Unfunded Accrued Liability*</b>	\$ 5,052,682,797	\$ 4,783,248,008

The actuarial balance sheet compares the actuarial value of assets on the valuation date, plus the value of benefits expected to be earned in the future by current active members, to the present value of benefits expected to be paid in the future on account of all current members and current annuitants.

The unfunded accrued liability is equal to the difference between these two amounts.

\* The actuarial accrued liability is based on a total liability which is based on the benefit provisions in effect for each active member and a normal cost rate which is based on the benefits in effect for members hired after August 31, 2009.

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**

**ASSUMPTIONS**

**Interest Rate:** 8.0% per annum

Components:

- 3.5% Inflation
- 4.5% Real Rate of Return

**Administrative Expenses:** 0.25% of valuation payroll per annum

**Salary Increases:** Increases are assumed to occur at the beginning of the valuation year, and vary by employee group. The components of the annual increases are:

<b>Employee Group</b>	<b>Inflation***</b>	<b>Real Wage Growth (Productivity)</b>	<b>Merit, Promotion and Longevity</b>
Legislators	0%	0%	0%
Elected Class other than Legislators	3.5%	0%	0%
Employee Class	3.5%	0%	See sample rates
State Salary of a District Judge*	3.5%	0%	0%
Inactive members who transfer to TRS**	3.5%	0%	1.5%

\* The state salary of a district judge is the compensation used for benefit amounts for Legislators. It is also used for benefits for other Elected Class members if it provides a greater benefit amount than actual average compensation.

\*\* Assumed in valuing benefits of former members who transfer to the Teacher Retirement System of Texas.

\*\*\* Total liabilities for this valuation reflect all known legislative pay increases for the biennium.

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

**Salary Increases:** (continued)Sample Rates:

<b>Annual Salary Increases for Merit, Promotion and Longevity</b>							
<b>Male and Female Regular Employee Class Members</b>							
<b>Age</b>	<b>Years of ERS Decrement Service</b>						
	<b>0</b>	<b>1</b>	<b>2-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20+</b>
20	6.80%	5.25%	4.75%	4.30%			
25	6.40	5.25	4.75	3.50	2.50%		
30	5.90	5.25	4.75	3.00	2.50	2.00%	
35	5.40	4.75	4.00	3.00	2.50	2.00	1.90%
40	4.90	4.75	4.00	3.00	2.50	1.90	1.80
45	4.40	4.25	3.75	3.00	2.40	1.90	1.70
50	3.90	3.70	3.20	2.70	2.20	1.70	1.60
55	3.40	3.20	2.80	2.40	1.90	1.60	1.50
60+	2.90	2.70	2.30	2.00	1.60	1.40	1.30

<b>Annual Salary Increases for Merit, Promotion and Longevity</b>					
<b>Male and Female CPO/CO Employee Class Members</b>					
<b>Age</b>	<b>Years of ERS Decrement Service</b>				
	<b>0</b>	<b>1</b>	<b>2-4</b>	<b>5-9</b>	<b>10+</b>
All	10.0%	6.0%	4.0%	3.2%	2.0%

**Payroll Growth:** 3.5% per year, compounded annually (for projecting valuation payroll).

**Cost of Living Increases for Elected Class Members:** 3.5% (each September 1) compounded annually, if benefits are based on the state salary of a district judge. Otherwise, 0% increases assumed. Increases occur during deferral periods (if any) and after retirement.

**TABLE 12****DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS****Adopted Effective August 31, 2008 (except as noted)**

(Continued)

**Age and Service Assumptions and Methods:**Rounding of ages:

Current and projected ages rounded to the nearest year are used for all purposes - determining eligibility for benefits, present value factors, early retirement reductions, option factors, salary increase rates, and decrements.

ERS Funding Entry Age:

The method of calculating the age at hire for the entry age normal cost method is shown in formulas below.

Benefit Service:

Current Benefit Service in years and months as of the valuation date was provided by ERS. This service plus Future Earned Service, Service Credit at Retirement, and Eligibility Service at Retirement were used to project benefit amounts.

Future Earned Service:

Active members were assumed to earn one additional year of service credit in each future year employed (but not beyond the amount of credit needed to provide a 100% of average monthly compensation standard service retirement annuity).

Service Credit at Retirement:

For members hired on or before August 31, 2009, service credit when eligible for service retirement is assumed to be increased by:

- 0 years for members retiring from the Elected Class;
- 1.0 year for members retiring from regular employee class service if age plus service, prior to adjustment, are greater than or equal to 78;
- 0.5 years for members retiring from regular employee class if age plus service, prior to adjustment, are less than 78;
- 1.0 year for members retiring from CPO/CO class if service, prior to adjustment, is at least 18 years; and
- 0.5 years for members retiring from CPO/CO class if service, prior to adjusting for any additional service, is less than 18 years.

(but not beyond the amount of credit needed to provide a 100% of average monthly compensation standard service retirement annuity).

For members hired after August 31, 2009, service credit when eligible for service retirement is assumed to be increased by:

- 0 years for members retiring from the Elected Class;
- 1.0 year for members retiring from regular employee class service if age plus service, prior to adjustment, are greater than or equal to 79;
- 0.5 years for members retiring from regular employee class if age plus service, prior to adjustment, are less than 79;
- 1.0 year for members retiring from CPO/CO class if service, prior to adjustment, is at least 19 years; and

**TABLE 12****DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS****Adopted Effective August 31, 2008 (except as noted)**

(Continued)

- 0.5 years for members retiring from CPO/CO class if service, prior to adjusting for any additional service, is less than 19 years.  
(but not beyond the amount of credit needed to provide a 100% of average monthly compensation standard service retirement annuity).

**Service for Decrements:**

The method of calculating ERS Decrement Service and CPO/CO Decrement Service on the valuation date is shown below. Decrement service is assumed to increase by one year for each future year employed.

- Valuation Age: Age rounded to nearest year on valuation date
- ERS Benefit Service: Years and months of all creditable ERS service on valuation date
- Pre-9/1/1993 TRS Service: Years and months of pre-9/1/1993 creditable TRC & TEA service
- CPO/CO Benefit Service: Years and months of creditable CPO/CO service on valuation date
- Date 1: (Valuation date) minus (ERS Benefit Service)
- Service 1: (Valuation age) minus (age rounded to nearest year on Date 1)
- ERS Funding Entry Age: (Valuation age) minus (Service 1)
- ERS Decrement Service: (Service 1) plus (Pre-9/1/1993 TRS service rounded to nearest year)
- Date 2: (Valuation date) minus (CPO/CO Benefit Service)
- CPO/CO Decrement Service: (Valuation age) minus (age rounded to nearest year on Date 2)

**Eligibility Service at Retirement:**

For members hired on or before August 31, 2009, eligibility service is assumed to be increased by the following to reach eligibility for service retirement:

- 0 years for members retiring from the Elected Class;
- 2.0 years for members retiring from regular employee class service if age plus service, prior to adjustment, are greater than or equal to 78;
- 1.0 year for members retiring from regular employee class if age plus service, prior to adjustment, are less than 78;
- 2.0 years for members retiring from CPO/CO class service if service, prior to adjustment, is at least 18 years; and
- 1.0 year for members retiring from CPO/CO class service if service, prior to adjustment, is less than 18 years.

For members hired after August 31, 2009, eligibility service is assumed to be increased by the following to reach eligibility for service retirement:

- 0 years for members retiring from the Elected Class;
- 1.0 year for members retiring from regular employee class; and
- 1.0 year for members retiring from CPO/CO class service.

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

**Decrements:** All decrements – mortality, service retirement, disability retirement, and termination of employment for reasons other than death or retirement – are assumed to occur at the beginning of the valuation year.

**Mortality Decrements:**Active Members, Service Retirees, Beneficiaries, and Inactive Members

1994 Group Annuity Mortality set forward one year for males and forward two years for females. Generational mortality improvements in accordance with Scale AA from the year 2000.

Disability Retirees

PBGC Disabled Mortality tables 2-M and 2-F, setback seven years.

**Service Retirement Decrements: Graded tables based on ERS experience.**Active Regular Employee Class Members - for members hired on or before August 31, 2009

ERS Decrement Service is used to determine when the rates apply:

- Age 60 with four years of service
- 78 points with five years of service

Sample rates for eligible members:

Annual Service Retirement Rates per 100 Participants												
Regular Employee Class Members												
Age	Males – Years of ERS Decrement Service						Females – Years of ERS Decrement Service					
	5	10	15	20	25	30	5	10	15	20	25	30
50						40						45
51						35						40
52						35						40
53					30	35					35	40
54					60	35					70	40
55					40	35					60	40
56					30	35					40	40
57					30	35					40	40
58				30	30	35				35	40	40
59				60	30	35				70	40	40
60	10	35	35	50	30	35	10	35	50	60	40	40
65	20	40	40	60	60	60	20	40	45	60	60	60
70	100	100	100	100	100	100	100	100	100	100	100	100

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

Active Regular Employee Class Members - for members hired after August 31, 2009

ERS Decrement Service is used to determine when the rates apply:

- Age 65 with nine years of service
- 79 points with five years of service

Sample rates for eligible members:

Annual Service Retirement Rates per 100 Participants Regular Employee Class Members												
Age	Males – Years of ERS Decrement Service						Females – Years of ERS Decrement Service					
	5	10	15	20	25	30	5	10	15	20	25	30
50						25						30
51						20						25
52						10						15
53						10						15
54					5	10					10	15
55					25	10					30	15
56					20	10					25	15
57					10	10					15	15
58					10	10					15	15
59				5	10	10				10	15	15
60				25	85	85				30	90	90
65		85	85	60	60	60		85	85	60	60	60
70		100	100	100	100	100		100	100	100	100	100
75	100	100	100	100	100	100	100	100	100	100	100	100

Active Elected Class Members

ERS Decrement Service is used to determine when the rates apply:

- Age 60 with 8 years service
- Age 50 with 12 years service

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

**Service Retirement Decrements (continued)**

Sample rates for eligible members:

<b>Annual Service Retirement Rates per 100 Participants</b>	
<b>Elected Class Members</b>	
<b>Age</b>	<b>Male and Female</b>
50-64	10
65-74	20
75+	100

Active CPO/CO Employee Class Members - for members hired on or before August 31, 2009

CPO/CO Decrement Service is used to determine when the rates apply:

- Any age with 18 years CPO/CO service
- Age 55 with nine years CPO/CO service

Sample rates for eligible members:

<b>Annual Service Retirement Rates per 100 Participants</b>						
<b>CPO/CO Employee Class Members – Male and Female</b>						
<b>Age</b>	<b>Years of Decrement Service</b>					
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>
50				45	45	45
51				30	30	30
52				30	30	30
53				30	30	30
54				30	30	30
55		20	20	35	35	35
56		12	15	35	35	35
57		12	15	35	35	35
58		12	15	35	35	35
59		12	15	35	35	35
60	4	12	15	35	35	35
65	15	50	50	65	65	65
70	100	100	100	100	100	100

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

Active CPO/CO Employee Class Members - for members hired after August 31, 2009

CPO/CO Decrement Service is used to determine when the rates apply:

- Any age with 19 years CPO/CO service
- Age 55 with nine years CPO/CO service

Sample rates for eligible members:

Annual Service Retirement Rates per 100 Participants CPO/CO Employee Class Members – Male and Female						
Age	Years of Decrement Service					
	5	10	15	20	25	30
50				5	5	5
51				5	5	5
52				5	5	5
53				5	5	5
54				5	5	5
55		20	20	65	65	65
56		12	15	30	30	30
57		12	15	30	30	30
58		12	15	30	30	30
59		12	15	30	30	30
60		12	15	50	50	50
65		50	50	65	65	65
70		100	100	100	100	100
75	100	100	100	100	100	100

**Disability Retirement Decrements: Graded Tables Based on ERS Experience.**

Active Regular Employee Class Members

ERS Decrement Service is used to determine when the rates apply:

- The rates do not apply before someone is eligible for the benefit.
- Service greater than zero is required for occupational disability retirement.
- 10 years of service is required for non-occupational disability retirement.
- Members are not eligible for non-occupational disability retirement if they are eligible for service retirement under the Rule of 80. Members who suffer a non-occupational disability after satisfying the Rule of 80 are therefore assumed to retire on service retirement.

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

Active Elected Class Members

ERS Decrement Service is used to determine when the rates apply:

- The rates do not apply before someone is eligible for the benefit.
- No occupational disabilities are assumed for the elected class.
- 8 years of service is required for non-occupational disability retirement.
- Members are not eligible for non-occupational disability retirement if they are eligible for service retirement (age 60 with 8 years service; or age 50 with 12 years service). Members who suffer a non-occupational disability after becoming eligible for service retirement are therefore assumed to retire on service retirement.

Sample rates for eligible regular employee class and elected class members:

<b>Annual Disability Retirement Rates per 100 Participants</b>		
	<b>Regular Employee Class and Elected Class</b>	
<b>Age</b>	<b>Males</b>	<b>Females</b>
25	0.100	0.100
30	0.061	0.030
35	0.145	0.093
40	0.154	0.199
45	0.228	0.323
50	0.330	0.460
55	0.550	0.775
60	0.500	0.500

99% of all disabilities are assumed to be non-occupational and 1% are assumed to be occupational. No occupational disabilities are assumed for the elected class.

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

**Disability Retirement Decrements** (continued)Active CPO/CO Employee Class Members

ERS Decrement Service and CPO/CO Decrement Service are used to determine when the rates apply:

- Service greater than zero is required for occupational disability retirement.
- 10 years of service is required for non-occupational disability retirement.
- Members are not eligible for non-occupational disability retirement if they are eligible for service retirement under the Rule of 80, or under the age 55 with at least 10 years of CPO/CO service provisions.
- For a member with 20 years CPO/CO service, the combined ERS/LECO service retirement annuity is much greater than the ERS non-occupational disability retirement annuity. Therefore, the rates of non-occupational disability retirement are zero for members with 20 years of CPO/CO service.

Sample rates for eligible members:

<b>Annual Disability Retirement Rates per 100 Participants CPO/CO Employee Class Members</b>	
<b>Age</b>	<b>Males and Females</b>
25	0.0100
30	0.0206
35	0.0697
40	0.1302
45	0.2179
50	0.3662
55	0.5467
60	0.2700

95% of all disabilities are assumed to be non-occupational, 4% are assumed to be non-total occupational and 1% are assumed to be total occupational.

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

**Termination Decrements for Reasons Other Than Death or Retirement: Graded Tables Based on ERS Experience.**

- Rates of termination are zero for members eligible for service retirement.

Sample rates for members not eligible for service retirement:

For members hired on or before August 31, 2009

<b>Annual Rates of Termination per 100 Participants – Regular</b>									
<b>Age</b>	<b>Male and Female – Years of ERS Decrement Service</b>								
	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>
20	50	30	25	20					
25	31	25	23	19	18	14			
30	25	22	18	15	14	10	7		
35	24	18	14	12	11	9	6	3	
40	22	15	12	10	9	8	5	2	2
45	20	14	10	9	8	8	4	2	2
50	18	12	10	8	7	7	3	2	1
55	17	11	9	7	7	7	3	2	1
60	16	11	9	7					

For members hired on or before August 31, 2009

<b>Annual Rates of Termination per 100 Participants – CPO/CO Employee Class Members</b>								
<b>Age</b>	<b>Male and Female – Years of ERS Decrement Service</b>							
	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>10</b>	<b>15</b>
20	29	24	22	20				
25	25	20	17	17	14	13		
30	21	16	15	14	12	11	9	
35	20	14	11	10	10	9	8	3
40	18	13	11	10	7	7	4	3
45	16	13	9	8	6	6	3	2
50	15	11	9	8	6	5	3	2
55	16	10	7	7	6	5		
60	16	10	7	7				

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

For members hired after August 31, 2009

<b>Annual Rates of Termination per 100 Participants – Regular Class Members – Male and Female</b>									
<b>Age</b>	<b>Years of ERS Decrement Service</b>								
	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>
20	52	32	27	23					
25	33	27	25	21	20	16			
30	27	24	20	17	15	11	8		
35	26	20	15	13	12	10	6	3	
40	24	16	13	11	10	9	5	2	2
45	22	15	11	10	9	9	4	2	2
50	20	13	11	9	8	8	3	2	1
55	19	12	9	8	8	8	3	2	1
60	18	12	9	8	8	7	2	1	
65	22	14	12	7	7	7			

For members hired after August 31, 2009

<b>Annual Rates of Termination per 100 Participants – CPO/CO Employee Class Members – Male and Female</b>								
<b>Age</b>	<b>Male and Female – Years of ERS Decrement Service</b>							
	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>10</b>	<b>15</b>
20	32	27	25	23				
25	28	23	20	20	17	16		
30	24	19	18	17	14	14	10	
35	23	17	14	13	13	11	9	4
40	21	16	14	13	9	9	5	4
45	19	16	11	10	8	8	4	3
50	18	14	11	10	8	6	4	3
55	19	13	9	9	8	6		
60	19	13	9	9	8	6		

**Elected Class Members:** 4 per 100 participants for members not eligible for service retirement.

**TABLE 12**

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

**Rates of Withdrawal of Employee Contributions**

Annual Rates of Withdrawal of Employee Contributions per 100 New Vested Terminations Male and Female												
Age	Regular Employee Class ERS Decrement Service				CPO/CO Employee Class ERS Decrement Service				Elected Class Members*			
	5-10	10-15	15-20	20+	5-10	10-15	15-20	20+	5-10	10-15	15-20	20+
20-24	100	100			100							
25-34	75	65	60		90	75	75					
35-44	75	60	50	35	90	75	70					
45-54	70	50	40	30	80	50	50					
55+	55	40	30	15	75							

\* Elected Class Members are assumed not to withdraw employee contributions

100% of non-vested terminations are assumed to withdraw their employee contributions.

**Percentage of Members Electing Various Benefit Options:**

Sex / Benefit	Standard Life Annuity	Option 1	Option 4
Male Member			
Disability	50%	40%	10%
Service Retirement	100%	0%	0%
Death Benefit Plan	0%	75%	25%
Female Member			
Disability	75%	20%	5%
Service Retirement	100%	0%	0%
Death Benefit Plan	0%	50%	50%

**Beneficiary Characteristics:** Male member is three years older than female beneficiary; and female member is same age as male beneficiary.

**TABLE 12****DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS****Adopted Effective August 31, 2008 (except as noted)**

(Continued)

**Transfers from ERS to TRS:**Contributing ERS Members:

10% of regular state employee and LECO members who cease contributing to ERS and do not withdraw employee contributions will transfer ERS service credit to TRS.

Noncontributing ERS Members:

Records of ERS and TRS are matched to determine former ERS members who are currently actively contributing under TRS.

TRS Retirement Age:

Former ERS members who are or become contributing TRS members are assumed to continue to earn service credit under TRS until first eligible for unreduced service retirement benefits, retire at the time and transfer ERS service credit to TRS.

**Missing Data:** There were data elements that were changed for some members as part of the valuation in order to make the data complete. However, the number of missing data items was immaterial.

**METHODS**

**Calculations:** The actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system, and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

**Actuarial Cost Method:** Entry Age Normal Cost Method. Under the Entry Age Normal Cost Method, an annual Normal Cost is determined for each covered active Member which is the contribution required to provide all the projected pension benefits assuming this contribution is payable over a period starting at entry date and ending on each projected date of separation from active service and expressed as a level percentage of compensation. For funding purposes, the normal cost rate for the plan is based on the benefits payable to a new member and the entry age characteristics of the current population. For accounting purposes, the normal cost rate for the plan is based on the average normal cost rate for each member reflecting the benefits in effect for each member. The Accrued Liability is determined as the excess of the total present value of all pension benefits, based on the benefit provisions in effect for each Member, over the total present value of future Normal Costs.

The excess of the accrued liability over the actuarial value of plan assets is the unfunded accrued liability.

**TABLE 12****DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**  
**Adopted Effective August 31, 2008 (except as noted)**  
(Continued)

The actuarial gain (loss) is a measure of the difference between actual experience and that expected based upon the actuarial assumptions between two actuarial valuation dates. Under this actuarial cost method, the actuarial gains (losses) are directly calculated and reduce (increase) the unfunded accrued liability.

Adjustments to the unfunded accrued liability can result from changes in actuarial assumptions and plan provisions. Such adjustments are determined by calculating, as of the actuarial valuation date, the increase or decrease in the unfunded accrued liability resulting from the change.

**Asset Valuation Method:** The actuarial value of plan assets is based on the market-related value of plan assets, with smoothing of unexpected returns. The market-related value is equal to the value of net assets held in trust for pension benefits (fair value of investments) as of the valuation date.

Specifically, the actuarial value of assets is determined as the expected value of plan assets as of the valuation date plus 20% of the difference between the market-related value and the expected value. The expected value equals the actuarial value of plan assets as of the prior valuation date, plus contributions, less benefit payments and administrative expenses, all accumulated at the assumed rate of interest to the current valuation date.

**Other Actuarial Valuation Procedures:** No provision was made in this actuarial valuation for the limitations of Internal Revenue Code Section 415.

Valuation payroll (earnings applied to the current valuation year) is the expected payroll for the fiscal year following the valuation date. It is based on reported payroll determined from August member contributions increased to reflect the across-the-board salary increases effective on or after September 1 and projected according to the actuarial assumptions for the upcoming fiscal year.

No liability was included for benefits which are funded by special State appropriations.

State appropriations for membership fees have been ignored.

**DATA**

**Census and Assets:** The valuation was based on members of the System as of August 31, 2011 and does not take into account future members. All census data was supplied by the System and was subject to reasonable consistency checks. Asset data was supplied by the System.

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS****Membership**

Members of the Employees Retirement System are employees of state agencies in a fulltime or part-time position (after a 90-day waiting period), or elected state officials.

**Classes of Membership**

**Elected Class:** Membership in the elected class is optional and is limited to elected state officials not covered by either of the Judicial Retirement Systems; members of the Legislature; and district and criminal district attorneys, to the extent they receive salaries from the state general revenue fund. In this summary, we will refer to the following two types of elected class service:

- Legislator: Elected class service while a member of the legislature.
- Non-Legislator: Elected class service while not a member of the legislature.

**Employee Class:** Membership in the employee class is mandatory for eligible employees and begins on the 91<sup>st</sup> day of employment. Membership includes all employees and appointed officers of every department, commission, board, agency, or institution of the state except that:

- (1) Independent contractors are not eligible; and
- (2) Persons covered by the Teacher Retirement System or by either of the Judicial Retirement Systems are not eligible; and
- (3) A retiree receiving employee class retirement benefits may not rejoin the System as a member of the employee class.

In this summary, we will refer to the following two types of employee class service:

- CPO/CO: Certified Peace Officer/Custodial Officer service is employee class service rendered while a law enforcement officer, a custodial officer, or a parole officer or caseworker.
- Regular: Regular employee class service is employee class service that is not considered CPO/CO service.

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

**Compensation**

Compensation includes base salary, longevity and hazardous duty pay. Overtime pay is excluded. Amounts in excess of Internal Revenue Code Section 401(a)(17) limits are excluded for persons who first became members after August 31, 1996. Compensation of Legislators, for the purpose of calculating the retirement benefit, is based on the state salary of a district judge, \$125,000 per annum. For the purpose of determining member contributions, compensation of Legislators is \$9,600 per annum.

**Average Monthly Compensation**

**Elected Class Service:** The state salary, as adjusted from time to time, of a district judge; provided that a member may elect to have average compensation based on actual compensation for elected class service, but if actual compensation is used the member forfeits increases based on changes in the salary of a district judge, unless the account is transferred back to ESO.

**Employee Class Service:**

- Average of the 36 highest months of compensation for service in the employee class of membership for members hired on or before August 31, 2009.
- Average of the 48 highest months of compensation for service in the employee class of membership for members hired after August 31, 2009.

**Contributions**

**Member:** 8% of compensation for Legislators; 6% of compensation for Non-Legislators; and the lesser of 6.50% of compensation and the State's contribution rate (but not less 6.00% of compensation) for all others. Senate Bill 1664 maintains the member contribution rate at 6.50% for the 2011 plan year regardless of the State's contribution level. Additional member contributions may be made for allowable service purchases.

**State of Texas:** The State contribution is set biennially by the legislature. The contribution recommended to the legislature is one that meets the funding standards of section 811.006 of the

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**  
(Continued)

Texas Government Code, under which contributions should be sufficient to fund normal cost and amortize any unfunded accrued liability over a period that does not exceed 31 years. The State contribution rate for the 2011 and 2012 plan years is 6.00% and 6.50%, respectively, of the eligible compensation of active contributing members. Additional State contributions are made for the \$5,000 general lump sum death benefit for retirees, for allowable service credits not previously established, and for annual membership fees.

**Limits on Contributions:** Both member and state contributions cease when the maximum amount of service credit is accrued or established by a member; except that for a member with at least 20 years of CPO/CO service, employee class contributions cease when an accrued standard service retirement annuity of 100% of high average salary is achieved, based on a 2.8% multiplier for CPO/CO employee class service, and a multiplier of 2.3% for regular employee class service. After contributions cease, the member retains membership until pre-retirement death, retirement, or withdrawal of the member's accumulated contributions.

**Accumulated Contributions**

Each member's individual account balance is credited with the member's contributions, plus 5% interest per annum until the member retires, takes a refund, or dies before retirement.

**Creditable Service**

Creditable service consists of established membership service, military service, and equivalent membership service.

**Limits on Creditable Service:** A member who has accrued a standard service retirement annuity of 100% of average monthly compensation for employee class service may not accrue or establish additional service in the employee class; but (if they become a member of the elected class) they may accrue or establish additional service in the elected class. However, a member who has accrued a standard service retirement annuity of 100% of average monthly compensation for elected class service may not accrue or establish additional service credit in any other class of membership. For purposes of determining when the limit on service accruals

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

has been met, the accrued standard service retirement annuity percentage for service in either class is based on 2.3% times the service credited in that class.

**Membership Service:** Service is credited in the applicable membership class for each month in which a member holds a position, and for which the required contributions are made. A full month of service credit is granted for each month a contribution is deducted from the member's salary, regardless of the number of days worked during the month or the amount of salary.

**Military Service:** An eligible member may purchase up to 60 months of service credit for active U.S. military service. In addition, a member who returns to active military service while employed by the State is allowed to purchase credit for such military service, even if it causes the 60-month maximum to be exceeded. In general, military service is credited to the class of membership the member held *after* the military service was rendered. Military service counts as CPO/CO service for a member who both entered military service within 90 days of leaving CPO/CO employment and returned to CPO/CO service within 90 days after completing the active military service.

- Military service is used in determining the amount of occupational disability retirement benefits and death benefits, and in determining eligibility to select a death benefit plan.
- Military service is used in determining eligibility for and the amount of service retirement or non-occupational disability retirement benefits if the member has, without military service:
  - o 6 years of elected class membership service, for military service purchased prior to 1978;
  - o 8 years of elected class membership service, for military service purchased after 1977; or
  - o At least five years of employee class membership service credit.

**Purchased Service (other than military service):** An eligible member may purchase, prior to retirement, previously refunded ERS service credit, unestablished service credit, waiting period service credit, and additional service credit.

- **Previously Refunded Service.** A member may buy back ERS service credit that was canceled by a refund of contributions. The refund must be repaid with 10 percent penalty interest.

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

- **Unestablished Service Credit, and Waiting Period Service Credit.** An eligible member may purchase service credit for state service before September 1947; for legislative service before 1963; for waived elective class service; and for state service during a waiting period that was required before a state employee could become an ERS member. The payment required is generally the member contributions due plus 10 percent penalty interest; except the cost of post-August 2003 waiting period service equals the actuarial present value of the benefit created by the additional service credit.
- **Additional Service Credit (ASC).** After purchasing all other service for which the member is eligible, an active, contributing, member may be eligible to purchase up to 3 years of ASC. The member must have at least 120 months of actual membership service of the type of ASC to be established – elected class, regular employee class, or CPO/CO employee class – and the ASC is credited as the type of membership held when the ASC is purchased. The payment required is the actuarial present value of the benefit created by the ASC.

**Unused Sick and Annual Leave:** Credit for unused leave may be used by only members hired on or before August 31, 2009 to qualify an eligible member for retirement, or to qualify a death benefit designee for a death benefit plan. It may also be used by all members to calculate the amount of these benefits. Credits for unused sick leave and unused annual leave are calculated separately as one month of service credit for every 160 hours, plus one month for any fraction of 160 hours that remain after division of the total hours by 160; except that the credit for unused annual leave cannot exceed five months. In order to be eligible for credit for unused leave, the member must be a contributing employee class member at the time of retirement or pre-retirement death. If the member retires directly from (or dies in) a CPO/CO position, the credit for unused sick and annual leave will be treated as CPO/CO service. Otherwise, it will be treated as regular employee class service. (Elected class service is not granted for unused sick and annual leave.)

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

**TRC, TEA Service, Higher Ed, TYC, Schools for Blind/Deaf, etc.**

Contributing members of agencies previously under TRS were transferred to ERS effective September 1, 1993 as a result of legislation passed by the 1993 legislature. That prior service is considered in determining the eligibility and amount of ERS benefits for these members. ERS pays benefits on all of the member's service, and TRS reimburses ERS for that portion of the benefit that is based on TRC and TEA service.

**Service Retirement Benefits****Eligibility**

- All Employee Class Members:
  - o Age 60 with 5 years employee class service for members hired on or before August 31, 2009;
  - o Age 65 with 10 years employee class service for members hired after August 31, 2009, or
  - o Rule of 80: 5 years employee class service and age plus employee class service at least 80 for all members.

TRS & TEA service is treated as regular employee class service when determining eligibility to retire, but is not considered in determining the amount of the benefit.

- CPO/CO Employee Class Members:
  - o Age 55 and 10 years of CPO/CO service; or
  - o Any age and 20 years of CPO/CO service
  - o Rule of 80
- Elected Class Members:
  - o Age 60 and 8 years of elected class service, or
  - o Age 50 and 12 years of elected class service.

**Standard Service Retirement Annuity:** Life annuity equal to 2.3% of Average Monthly Compensation (AMC) times years and months of service to a maximum of 100% of AMC. May not be less than \$150/month for employee class service, unless retiring under the Proportionate

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

Retirement Plan. For members hired after August 31, 2009, this annuity is reduced by five percent for each year a regular class member retires before age 60 and each year a CPO/CO retires before age 55, with a maximum reduction of 25 percent.

For members who retire with 20 years CPO/CO service, the standard employee class service retirement annuity payable from all sources is equal to the following percentage of AMC: 2.8% times CPO/CO service plus 2.3% times non-CPO/CO employee class service, to a maximum of 100%. The portion of the standard service retirement annuity that is payable from the ERS trust equals AMC times the sum of B plus D plus E, where B is the multiplier for CPO/CO non-leave service, D is the multiplier for regular employee class service, and E is the multiplier for CPO/CO leave service. B, D, and E are defined in the following six-step procedure:

- A = 2.8% times CPO/CO non-leave service, to a maximum of 100%
- B = 2.3% times CPO/CO non-leave service, to a maximum of 100%
- H = 2.8% times all CPO/CO service, to a maximum of 100%
- C = H minus A
- D = 2.3% times all regular employee class service, to a maximum of (100% minus H)
- E = 2.3% times CPO/CO leave service, to a maximum of (100% minus B minus D)

**Optional Forms of Payment:** Five optional forms and partial lump sum option assumed actuarially equivalent to standard annuity.

**Automatic Increase:** For elected class benefits based on the state salary of a district judge: adjusted automatically as the state salary of a district judge increases.

**Occupational Disability Retirement Benefits**

A disability that results from a sudden and unexpected injury or disease resulting solely from a specific act or occurrence at a definite time and place as a direct result of some risk or hazard inherent to the person's state employment is considered an occupational disability.

**Eligibility:** Medical Board certification of permanent mental or physical incapacity for further performance of duty; and executive director and ERS Board determination that the disability is occupational. The member must be contributing to the retirement system at the commencement of the occupational disability, and must have service credit in either membership class.

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

- Total occupational disability: CPO/CO members only. Incapable of substantial gainful activity solely because of the occupational disability, and considered a total disability under federal social security law.
- Non-total occupational disability: Any occupational disability that does not satisfy the definition of total occupational disability.

**Standard Occupational Disability Annuity**: Monthly annuity payable for life, or until the member is no longer incapacitated for the performance of duty, calculated as follows:

- Elected class: 2.3% of AMC times all elected class service to a maximum of 100% of AMC, but not less than 18.4% of AMC.
- Regular employee class: 2.3% of AMC times all employee class service to a maximum of 100% of AMC, but not less than 35% of AMC, and not less than \$150/month.
- Occupational disability that results from a risk to which CPO/CO members are exposed because of the nature of their CPO/CO duties:
  - o Non-total with less than 20 years CPO/CO service: Amount payable from all sources equals 2.3% of AMC times all employee class service to a maximum of 100% of AMC, but not less than 50% of AMC. 15% of AMC is payable from LECOSRF; the remainder of the benefit is payable from the ERS trust.
  - o Non-total with 20 years CPO/CO service: Amount payable from ERS trust is calculated in the same manner as the standard service retirement annuity payable from ERS trust.
  - o Total with any CPO/CO service: 2.3% of AMC times CPO/CO non-leave service to a maximum of 100% of AMC, but not less than 35% of AMC, is payable from ERS trust.

If an employee class member hired on or before August 31, 2009 has less than 36 months of compensation history, then only the contributory months available will be used to determine AMC. Similarly, if an employee class member hired after August 31, 2009 has less than 48 months of compensation history, then only the contributory months available will be used to determine AMC.

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

**Optional Forms of Payment:** Five optional forms actuarially equivalent to the standard annuity.

**Automatic Increase:** For elected class benefits based on the state salary of a district judge: adjusted automatically as the state salary of a district judge increases.

**Non-occupational Disability Retirement Benefits**

**Eligibility:** Medical Board certification of permanent mental or physical incapacity for the further performance of duty; and not considered an occupational disability by the executive director and ERS Board. The member must be contributing to the retirement system at the commencement of the disability. In addition, the member must have:

- 8 years of elected class membership service; or
- 6 years of membership service in the elected class plus 2 years of military service credit established before 1978; or
- 10 years of employee class membership

**Exclusions:** A member otherwise eligible may not apply for or receive a non-occupational disability annuity if the member is eligible for a service retirement annuity on account of his or her elected class service; if the member is eligible for an employee class service retirement annuity under the Rule of 80; or if the member is at least age 55 with at least 10 years of CPO/CO employee class service.

**Standard Non-occupational Disability Annuity:** All membership classes: Monthly annuity payable for life, or until the member is no longer incapacitated for the performance of duty, equal to 2.3% of AMC times years of service to a maximum of 100% of AMC. The benefit for employee class service is reduced actuarially for commencement before the age that the member would be eligible for a service retirement annuity. However, the benefit for elected class service is *not* reduced for early commencement.

**Optional Forms of Payment:** Five optional forms actuarially equivalent to standard annuity.

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

**Automatic Increase:** Elected class benefits based on the state salary of a district judge are adjusted automatically as the state salary of a district judge increases.

**Death Benefit Annuities****Death Benefit Plan (DBP) Annuity****Eligibility**

Death of an active member:

- 10 years of elected or employee class service; or
- Less than 10 years of elected or employee class service, but eligible for service retirement at the time of death, and survived by a spouse or minor child.

Death of a non-contributing inactive member:

- 10 years of elected or employee class service as of August 31, 2006, with a DBP filed prior to September 1, 2006; or
- Eligible for service retirement when the member became inactive

**Annuity:** Calculated as if the member had elected an optional form of payment, retired on service retirement at the time of death, and died immediately thereafter. Available options are Option 1 and Option 4. If the member dies before becoming eligible for a service retirement annuity, the benefit is reduced for early retirement as follows:

- With 20 years of CPO/CO service for members hired on or before August 31, 2009, the benefit is actuarially reduced from the member's age 50
- With 20 years of CPO/CO service for members hired after August 31, 2009, the benefit is reduced by 5 percent for each year the member retires before age 55, with a maximum reduction of 25 percent
- With 12 years of elected class service, the benefit is actuarially reduced from the member's age 50
- With 10 years of CPO/CO service, the benefit is actuarially reduced from the member's age 55

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

- With 5 years of employee class service for members hired on or before August 31, 2009 or 8 years of elected class service the benefit is actuarially reduced from the member's age 60
- With 10 years of employee class service for members hired after August 31, 2009 is actuarially reduced from the member's age 65

**Survivor of Elected Member Annuity**

**Eligibility:** Death of a contributing or non-contributing elected class member with at least 8 years of elected class service, less than 10 years of elected or employee class service, not eligible for service retirement at the time of death, and with a surviving spouse.

**Annuity:** One-half of the service retirement annuity the member had earned at death.

**Automatic Increases:** Death benefit annuities based on the state salary of a district judge are adjusted automatically as the state salary of a district judge increases.

**Rejection of a Death Benefit Annuity:** A person eligible for a death benefit annuity may reject the annuity and receive, instead, a refund of the member's account balance plus (if they are eligible) the general lump sum death benefit.

**Pre-retirement Death Lump Sums and Refunds****General Lump Sum Death Benefit**

**Eligibility:** Death of a member who at the time of death was actively employed by the state; receiving workers' compensation benefits for an injury sustained while employed by the state; or on authorized sick leave. Not payable if a death benefit annuity is payable; but may be paid in addition to the occupational lump sum death benefit and/or the return of contributions death benefit.

**Amount:** 5% of the member's account balance at death, times full years of service credit at death, to a maximum of 100% of the amount in the member's individual account.

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**  
(Continued)**Occupational Lump Sum Death Benefit**

**Eligibility:** Pre-retirement occupational death of a member survived by a spouse or dependent minor child. Payable in addition to any other death benefits.

**Amount:** One year's salary based on the member's rate of compensation at death.

**Return of Contributions**

**Eligibility:** Pre-retirement death of a member and a death benefit annuity is not payable.

**Amount:** The amount in the member's individual account at the time of death.

**Post-Retirement Death Lump Sums and Refunds****Return of Excess Contributions**

**Eligibility:** Death of last recipient of a service retirement or disability retirement annuity that was paid as a single life annuity or under Option 1, 2 or 5; or death of the recipient of an Option 1 DBP annuity; or death of the recipient of a survivor of elected member annuity.

**Amount:** The excess of the member's accumulated contributions at retirement over all benefits paid before the annuity terminates.

**General Lump Sum**

**Eligibility:** Death of a retired member.

**Amount:** \$5,000. This is funded separately by the state and not reflected in this valuation.

**Occupational Disability Lump Sum**

**Eligibility:** Death of a member in receipt of an occupational disability retirement annuity who is survived by a spouse or dependent minor child.

**Amount:** One year's salary based on the member's rate of compensation at the time of disability retirement.

**TABLE 13****SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

**Benefits After Termination of Employment for Reasons Other than Death or Retirement****Deferred Service Retirement Annuity**

**Eligibility:** The member's accumulated contributions are not refunded at termination, and:

- 5 or more years of employee class membership service for members hired on or before August 31, 2009;
- 10 or more years of employee class membership service for members hired after August 31, 2009; or
- 8 or more years of elected class membership service.

**Amount:** The standard service retirement annuity earned as of the date of termination; provided that the annuity may be increased under the provisions of the proportionate retirement program if the member becomes a contributing member of another system that participates in the program.

**Payments may commence at:**

- Age 60 for members hired on or before August 31, 2009;
- Age 65 for members hired after August 31, 2009;
- Age 55 with 10 years of CPO/CO service; or
- Age 50 with 12 years of elected class service.

**Optional forms of payment:** Five optional forms actuarially equivalent to standard annuity.

**Automatic Increases:** Annuities based on the state salary of a district judge are adjusted automatically as the state salary of a district judge increases. Increases occur while the annuity is deferred and after retirement.

**Rejection of Deferred Annuity:** A terminated member eligible for a deferred service retirement annuity may elect to receive a refund of his or her account balance in lieu of the annuity.

**TABLE 13**

**SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

(Continued)

**Refund of Contributions**

**Eligibility:** Termination of covered employment in a class of ERS membership, and application for a refund of the member contributions that were accumulated for service in that class.

**Amount:** The amount in the member's account for service in the terminated membership class.

**Consequence of a Refund:** Taking a refund of accumulated contributions for a particular class of membership service cancels membership in that class and forfeits all other benefits from that class. A person may terminate membership in one class and retain membership in the other.

**TABLE 14**  
**SUMMARY OF MEMBERSHIP DATA**  
**AS OF AUGUST 31, 2011**

**Active Members**

Item	Regular Members	Elected Class	LECO Members	Total
Number of Members	100,155	332	36,806	137,293
Average Annual Salaries	\$ 42,344	\$ 63,226	\$ 39,454	\$ 41,620
Average Age	44.7	53.0	42.2	44.1
Average Service	9.7	9.8	8.9	9.5

**Annuitants**

Item	Number	Annual Annuities	Average Annuities	Average Age
Service Retirees and Beneficiaries	80,764	1,527,465,192	18,913	68.6
Disability Retirees	2,666	25,534,008	9,578	63.7
Total	83,430	\$ 1,552,999,200	\$ 18,614	68.5

**Inactive Members Assumed Eligible for Deferred Annuities**

Item	Number	Annual Annuities	Average Annuities	Average Age
Vested Members who are not Active at TRS	13,676	135,686,712	9,922	48.7
Vested Members who are Active at TRS	2,576	45,208,728	17,550	50.8
Total	16,252	\$ 180,895,440	\$ 11,131	49.0
Non-vested Members who are Active at TRS	6,128	\$ 18,343,824	\$ 2,993	45.5

**Non-vested Inactive Members**

Item	Annual Number	Account Balances	Average Account Balances	Average Age
Non-vested Members who are not Active at TRS	62,520	131,777,436	2,108	39.8
Non-vested Members who are Active at TRS (this group also assumed eligible for deferrerd annuities)	6,128	21,461,775	3,502	45.5
Total	68,648	\$ 153,239,211	\$ 2,232	40.3

**EXHIBIT I****ACTIVE MEMBERSHIP– ALL EMPLOYEES****NUMBER AND AVERAGE ANNUAL SALARY  
AS OF AUGUST 31, 2011**

Age	Years of Service									Total	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
<b>Under 25</b>	6,247 \$27,443	93 \$29,912									6,340 \$27,479
<b>25-29</b>	11,089 \$32,999	2,117 \$36,488	122 \$36,777								13,328 \$33,588
<b>30-34</b>	8,746 \$35,100	4,051 \$42,342	1,758 \$41,842	62 \$41,417							14,617 \$37,945
<b>35-39</b>	6,966 \$35,507	3,584 \$42,780	3,806 \$46,392	1,530 \$46,635	53 \$44,429						15,939 \$40,839
<b>40-44</b>	6,399 \$35,943	3,488 \$41,937	4,002 \$45,830	3,809 \$50,519	1,531 \$51,445	109 \$51,216					19,338 \$43,255
<b>45-49</b>	5,521 \$35,674	3,155 \$41,118	3,507 \$43,860	3,837 \$48,354	3,459 \$54,374	1,853 \$55,694	159 \$50,601				21,491 \$44,919
<b>50-54</b>	4,855 \$36,212	2,993 \$41,071	3,362 \$43,822	3,514 \$47,440	2,826 \$53,542	1,780 \$61,234	554 \$59,718	13 \$66,724			19,897 \$45,586
<b>55-59</b>	3,849 \$37,433	2,537 \$40,951	2,963 \$43,629	2,922 \$47,510	1,862 \$52,472	828 \$57,608	406 \$61,112	103 \$54,707	3 \$51,508		15,473 \$44,728
<b>60-64</b>	1,988 \$39,155	1,684 \$40,913	1,745 \$44,026	1,550 \$47,309	743 \$53,843	312 \$57,758	140 \$59,463	103 \$62,438	20 \$58,810		8,285 \$44,761
<b>Over 64</b>	580 \$38,152	624 \$41,838	585 \$43,764	429 \$48,318	219 \$52,518	68 \$55,533	36 \$64,540	30 \$61,735	14 \$61,281		2,585 \$44,440
<b>Total</b>	56,240 \$34,468	24,326 \$41,219	21,850 \$44,433	17,653 \$48,233	10,693 \$53,279	4,950 \$58,036	1,295 \$59,142	249 \$59,379	37 \$59,153		137,293 \$41,620

**EXHIBIT II****ACTIVE MEMBERSHIP DATA – REGULAR EMPLOYEE CLASS****NUMBER AND AVERAGE ANNUAL SALARY  
AS OF AUGUST 31, 2011**

Age	Years of Service									Total	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
<b>Under 25</b>	3,539 \$24,712	50 \$25,880									3,589 \$24,728
<b>25-29</b>	8,108 \$32,307	1,221 \$35,707	82 \$34,860								9,411 \$32,771
<b>30-34</b>	6,650 \$35,125	2,727 \$42,093	1,106 \$41,676	38 \$41,147							10,521 \$37,641
<b>35-39</b>	5,271 \$35,721	2,436 \$43,188	2,686 \$46,663	779 \$46,933	35 \$41,957						11,207 \$40,765
<b>40-44</b>	4,791 \$36,235	2,425 \$42,617	2,871 \$46,513	2,419 \$52,384	1,033 \$51,744	86 \$49,979					13,625 \$43,666
<b>45-49</b>	4,085 \$35,977	2,271 \$42,072	2,588 \$44,879	2,583 \$50,373	2,563 \$55,200	1,267 \$56,376	134 \$49,113				15,491 \$45,721
<b>50-54</b>	3,732 \$36,842	2,214 \$42,011	2,519 \$45,050	2,482 \$49,394	2,496 \$53,723	1,560 \$60,528	502 \$57,864	11 \$65,809			15,516 \$46,718
<b>55-59</b>	2,982 \$38,393	1,921 \$41,988	2,318 \$44,850	2,165 \$49,532	1,692 \$53,267	765 \$57,055	384 \$60,734	101 \$54,306	3 \$51,508		12,331 \$46,151
<b>60-64</b>	1,459 \$40,905	1,255 \$42,376	1,410 \$45,232	1,142 \$49,103	664 \$54,527	290 \$58,178	133 \$59,128	103 \$62,438	19 \$61,526		6,475 \$46,526
<b>Over 64</b>	422 \$40,182	451 \$43,658	457 \$44,709	327 \$50,921	194 \$54,085	64 \$57,449	31 \$62,450	29 \$62,200	14 \$61,281		1,989 \$46,504
<b>Total</b>	41,039 \$34,612	16,971 \$41,855	16,037 \$45,247	11,935 \$50,064	8,677 \$53,857	4,032 \$58,121	1,184 \$58,067	244 \$59,195	36 \$60,596		100,155 \$42,344

**EXHIBIT III****ACTIVE MEMBERSHIP DATA – LECOS****NUMBER AND AVERAGE ANNUAL SALARY  
AS OF AUGUST 31, 2011**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<b>Under 25</b>	2,708 \$31,013	43 \$34,601								2,751 \$31,069
<b>25-29</b>	2,979 \$34,898	896 \$37,553	40 \$40,707							3,915 \$35,565
<b>30-34</b>	2,087 \$34,973	1,322 \$42,908	652 \$42,124	24 \$41,845						4,085 \$38,723
<b>35-39</b>	1,682 \$34,423	1,144 \$41,830	1,119 \$45,778	751 \$46,327	18 \$49,235					4,714 \$40,869
<b>40-44</b>	1,583 \$34,325	1,050 \$40,012	1,122 \$44,079	1,389 \$47,302	498 \$50,824	23 \$55,839				5,665 \$42,031
<b>45-49</b>	1,412 \$33,946	874 \$38,246	911 \$40,511	1,249 \$44,144	895 \$52,062	585 \$54,301	25 \$58,577			5,951 \$42,552
<b>50-54</b>	1,109 \$33,820	767 \$38,002	831 \$39,523	1,024 \$42,377	325 \$51,770	220 \$66,244	52 \$77,617	2 \$71,752		4,330 \$41,184
<b>55-59</b>	846 \$33,980	606 \$37,249	630 \$38,880	748 \$41,513	162 \$45,673	58 \$65,188	22 \$67,696	2 \$74,983		3,074 \$38,935
<b>60-64</b>	519 \$33,536	419 \$36,211	328 \$38,547	399 \$41,603	73 \$44,833	19 \$54,455	6 \$55,954			1,763 \$37,699
<b>Over 64</b>	155 \$33,225	165 \$36,203	117 \$38,474	96 \$39,569	20 \$48,643	2 \$42,543	2 \$65,141	1 \$48,248		558 \$37,025
<b>Total</b>	15,080 \$33,814	7,286 \$39,531	5,750 \$41,942	5,680 \$44,274	1,991 \$50,860	907 \$57,910	107 \$69,681	5 \$68,344		36,806 \$39,454

**EXHIBIT IV****ACTIVE MEMBERSHIP DATA – ELECTED CLASS****NUMBER AND AVERAGE ANNUAL SALARY  
AS OF AUGUST 31, 2011**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<b>Under 25</b>										
<b>25-29</b>	2 \$7,200									2 \$7,200
<b>30-34</b>	9 \$46,466	2 \$7,200								11 \$39,327
<b>35-39</b>	13 \$88,753	4 \$66,100	1 \$7,200							18 \$79,188
<b>40-44</b>	25 \$82,591	13 \$70,630	9 \$46,466	1 \$7,200						48 \$71,008
<b>45-49</b>	24 \$85,733	10 \$75,380	8 \$95,549	5 \$56,820	1 \$7,200	1 \$7,200				49 \$79,067
<b>50-54</b>	14 \$57,685	12 \$63,725	12 \$83,875	8 \$89,300	5 \$78,085					51 \$72,228
<b>55-59</b>	21 \$40,262	10 \$66,100	15 \$54,320	9 \$59,555	8 \$21,925	5 \$54,320				68 \$48,592
<b>60-64</b>	10 \$75,380	10 \$54,320	7 \$57,685	9 \$72,644	6 \$87,816	3 \$38,134	1 \$124,999		1 \$7,200	47 \$66,555
<b>Over 64</b>	3 \$7,200	8 \$55,487	11 \$60,745	6 \$46,466	5 \$7,200	2 \$7,200	3 \$85,733			38 \$45,265
<b>Total</b>	121 \$67,250	69 \$63,240	63 \$64,811	38 \$65,113	25 \$45,437	11 \$37,054	4 \$95,549		1 \$7,200	332 \$63,226

**EXHIBIT V****RETIREE AND BENEFICIARY MEMBERSHIP DATA  
AS OF AUGUST 31, 2011****NUMBER AND AVERAGE ANNUAL BENEFIT\***

<b>Age Last Birthday</b>	<b>Number</b>	<b>Annual Benefit</b>	<b>Average Annual Benefit</b>
<b>Service Retirees</b>			
Under 60	13,443	361,381,320	26,882
60 - 64	16,573	343,978,104	20,755
65 - 69	14,709	260,793,948	17,730
70 - 74	10,350	168,325,344	16,263
75 - 79	7,250	124,764,780	17,209
Over 79	7,713	140,449,176	18,209
Total	70,038	1,399,692,672	19,985
<b>Beneficiaries</b>			
Under 60	1,190	14,517,588	12,200
60 - 64	691	9,937,272	14,381
65 - 69	824	11,351,496	13,776
70 - 74	938	14,468,748	15,425
75 - 79	1,128	18,240,816	16,171
Over 79	2,407	41,949,816	17,428
Total	7,178	110,465,736	15,389
<b>Disability Retirees</b>			
Under 60	894	8,222,952	9,198
60 - 64	628	6,630,336	10,558
65 - 69	427	4,270,512	10,001
70 - 74	263	2,478,492	9,424
75 - 79	186	1,920,696	10,326
Over 79	169	1,687,560	9,986
Total	2,567	25,210,548	9,821
<b>Grand Total</b>	<b>79,783</b>	<b>1,535,368,956</b>	<b>19,244</b>

\* Excludes LECOSRF Annuitants not yet eligible to begin an annuity from ERS and excludes annuitants where ERS is reimbursing TRS.

**EXHIBIT V-A****RETIREE AND BENEFICIARY MEMBERSHIP DATA  
AS OF AUGUST 31, 2011****NUMBER AND AVERAGE ANNUAL BENEFIT****LECOSRF ANNUITANTS NOT YET ELIGIBLE TO BEGIN AN ANNUITY FROM ERS**

<b>Age Last Birthday</b>	<b>Number</b>	<b>Annual Benefit</b>	<b>Average Annual Benefit</b>
<b>All Participants</b>			
Under 40	32	602,832	18,839
40 - 44	265	4,871,172	18,382
Total	297	5,474,004	18,431
<b>Grand Total</b>	297	5,474,004	18,431

**EXHIBIT V-B****RETIREE AND BENEFICIARY MEMBERSHIP DATA  
AS OF AUGUST 31, 2011****NUMBER AND AVERAGE ANNUAL BENEFIT****ANNUITANTS WHERE ERS IS REIMBURSING TRS FOR  
THE BENEFIT PAYMENTS**

<b>Age Last Birthday</b>	<b>Number</b>	<b>Annual Benefit</b>	<b>Average Annual Benefit</b>
<b>Service Retirees and Beneficiaries</b>			
Under 60	522	2,360,988	4,523
60 - 64	990	4,004,388	4,045
65 - 69	874	3,131,592	3,583
70 - 74	559	1,622,364	2,902
75 - 79	240	559,488	2,331
Over 79	66	153,960	2,333
<b>Total</b>	<b>3,251</b>	<b>11,832,780</b>	<b>3,640</b>
<b>Disabled Retirees</b>			
Under 60	41	181,296	4,422
60 - 64	31	93,960	3,031
65 - 69	21	39,564	1,884
70 - 74	6	8,640	1,440
75 - 79	0	0	0
Over 79	0	0	0
<b>Total</b>	<b>99</b>	<b>323,460</b>	<b>3,267</b>
<b>Grand Total</b>	<b>3,350</b>	<b>12,156,240</b>	<b>3,629</b>

**EXHIBIT VI****5-YEAR HISTORY OF MEMBERSHIP DATA****Active Members**

<b>Valuation as of August 31</b>	<b>Number of Active Members</b>	<b>Percentage Change in Membership</b>	<b>Total Annualized August Payroll</b>	<b>Percentage Change in Payroll</b>
2007	132,497	0.06%	\$ 5,047,672,046	3.35%
2008	134,626	1.61%	5,313,476,547	5.27%
2009	141,223	4.90%	5,677,435,514	6.85%
2010	142,490	0.90%	5,845,294,543	2.96%
2011	137,293	(3.65%)	5,714,097,919	(2.24%)

**Service Retirees, Disability Retirees, and Beneficiaries**

<b>Valuation as of August 31</b>	<b>Number on roll</b>	<b>Additions</b>	<b>Deletions</b>	<b>Percentage Change in Number on Roll</b>	<b>Annual Annuities</b>	<b>Percentage Change in Annuities</b>
2007	70,455	4,208	1,976	3.30%	\$ 1,248,069,448	4.52%
2008	72,678	4,560	2,033	3.59%	1,314,069,192	5.29%
2009	75,722	4,433	1,849	3.56%	1,377,430,308	4.82%
2010	79,311	4,870	1,828	4.02%	1,457,065,548	5.78%
2011	83,430	5,808	2,237	4.50%	1,552,999,200	6.58%

**EXHIBIT VII****GLOSSARY**

<b>Accrued Liability</b>	The difference between (a) the present value of future plan benefits, and (b) the present value of future normal cost. It is the portion of the present value of future plan benefits attributable to service accrued as of the valuation date. Sometimes referred to as “actuarial accrued liability.”
<b>Accrued Service</b>	The service credited under the plan which was rendered before the date of the actuarial valuation.
<b>Actuarial Assumptions</b>	Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
<b>Actuarial Cost Method</b>	A mathematical budgeting procedure for allocating the dollar amount of the “present value of future plan benefits” between the present value of future normal cost and the accrued liability. Sometimes referred to as the “actuarial funding method.”
<b>Actuarial Equivalent</b>	A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.
<b>Actuarial Value of Assets</b>	The value of current plan assets recognized for valuation purposes. Based on a smoothed market value that recognizes investment gains and losses over a period of time.
<b>Amortization</b>	Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

**EXHIBIT VII****GLOSSARY**

(Continued)

<b>Annual Required Contribution</b>	The Annual Required Contribution, or ARC, is the amount determined in accordance with Governmental Accounting Standards Board Statements Nos. 25 and 27.
<b>Experience Gain (Loss)</b>	A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.
<b>Normal Cost</b>	The annual cost assumed, under the actuarial funding method, for current and subsequent plan years. Sometimes referred to as “current service cost.”
<b>Present Value</b>	The amount of funds presently required to provide a payment or series of payments in the future. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.
<b>Unfunded Accrued Liability</b>	The difference between the accrued liability and valuation assets.