



Law Enforcement and Custodial Officer Supplemental Retirement Fund of the Employees Retirement System of Texas

August 31, 2004
Actuarial Valuation Report
for Plan Year Beginning September 1, 2004
and
Fiscal Year Ending August 31, 2004

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ACTUARIAL VALUATION REPORT

PREPARED AS OF AUGUST 31, 2004

This report describes the results of an actuarial valuation of the Law Enforcement and Custodial Officer Supplemental Retirement Fund, one of the funds of the Employees Retirement System of Texas. The Employees Retirement System of Texas retained Towers Perrin to perform this actuarial valuation for the purposes of determining (1) the funding status for the plan year September 1, 2004 through August 31, 2005; and (2) financial statement disclosure and reporting information for the fiscal year ending August 31, 2004.

The consulting actuaries are members of the Society of Actuaries and other professional actuarial organizations and meet their "General Qualification Standard for Prescribed Statements of Actuarial Opinions" relating to pension plans.

The calculations were made as of August 31, 2004. In preparing the results presented in this report, we have relied upon information provided to us regarding plan provisions, plan participants, and plan assets as of August 31, 2004. While the scope of our engagement did not call for us to perform an audit or independent verification of this information, we have reviewed this information for reasonableness but have not audited it. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

The actuarial assumptions and the accounting policies and methods employed in this report have been selected by the plan sponsor, with the concurrence of Towers Perrin.

The funding determination portion of this actuarial valuation has been conducted in accordance with principles of practice prescribed by the Actuarial Standards Board and the requirements of the Texas Government Code.

The financial statement disclosure portion of this actuarial valuation has been conducted according to our understanding of Statements No. 25 and 27 of the Government Accounting Standards Board. The Government Accounting Standards Board requires the use of reasonable assumptions. The actuarial assumptions used are identical to the assumptions used for the funding determination portion of the valuation.

The results shown in this report are reasonable actuarial results. However, a different set of results could also be considered reasonable actuarial results, since the Actuarial Standards of Practice describe a "best-estimate range" for each assumption, rather than a single best-estimate value. Thus, reasonable results differing from those presented in this report could have been developed by selecting different points within the best-estimate ranges for various assumptions.

The information contained in this report was prepared for the internal use of the Employees Retirement System of Texas and its auditors in connection with our actuarial valuation of the pension plan. It is not intended nor necessarily suitable for other purposes.

Towers Perrin

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FUNDING DETERMINATION

A. ACTUARIAL VALUATION RESULTS

The key results from the current valuation, along with comparable figures from the prior valuation, are as follows:

	August 31, 2004 Valuation	August 31, 2003 Valuation
Total Contribution Rate		
current bienniumthereafter (assumed)	0.000% 1.621%	0.000% 1.607%
Total Normal Cost		
percent of payrolldollars	1.621% \$19,943,898	1.607% \$20,530,863
Actuarial Value of Assets (AV)	\$679,242,950	\$666,588,289
Actuarial Accrued Liability (AAL)	\$621,457,336	\$597,914,188
Funded Ratio (AV/AAL)	109.3%	111.5%
Net Asset/(Liability) Balance (AV – AAL)	\$57,785,614	\$68,674,101
Amortization Period in Years	0.0	0.0
Valuation Payroll	\$1,230,580,964	\$1,277,894,221
Reported Payroll	\$1,218,792,550	\$1,265,791,324
Active Members	38,305	40,335



B. DETERMINATION OF FUNDED STATUS AND AMORTIZATION PERIOD

The current valuation has been determined based on the actuarial assumptions summarized in Appendix D and the actuarial cost method described in Appendix E.

The actuarial assumptions are used to predict the likelihood of various benefits becoming payable from the plan, the size of those benefits, and the estimated value today of those future benefits. Actual experience may deviate from these assumptions, resulting in actuarial gains and losses.

The actuarial cost method is a budgeting technique, used to allocate total estimated plan liabilities over past, current and future years. Thus, the choice of the cost method does not affect the overall long-term plan costs, but only the incidence of when those costs are reflected. The cost method is designed to give plan costs as a relatively level percentage of payroll if characteristics of the member group do not change significantly.

An actuarial valuation is the process by which the actuarial assumptions and cost method are applied to actual plan provisions, assets, and member data, to develop a funding level sufficient to provide for future benefit payments, the actual ultimate value of which is not now known.

C. CHANGES SINCE LAST VALUATION

Since the prior valuation, there were no changes in actuarial assumptions, actuarial cost methods, actuarial procedures, or plan provisions.



D. PLAN EXPERIENCE

For fiscal year 2004, the rate of investment return on the market value of assets was approximately 11.7%. The actuarial value of assets is a smoothed value that recognizes only 20% of outstanding investment gains and losses. The rate of investment return on the actuarial (smoothed) value of assets was approximately 6.3% for fiscal year 2004, which was less than the 8.0% assumed rate. As of August 31, 2004, the market value of assets was \$45 million less than the actuarial value. Unless the market value earns significantly more than 8% over the next few years (on the average), unrecognized investment losses will gradually be reflected in the actuarial value of assets and the funded ratio may fall below 100%.

The net asset balance of \$68.7 million as of the August 31, 2003 actuarial valuation decreased by approximately \$10.9 million to \$57.8 million as of the August 31, 2004 valuation. The following table shows the components of this change for 2004 (all amounts in millions of dollars):

Expected change in net asset/(liability) balance: Interest on net asset/(liability) balance	\$5.5
State contribution greater/(less) than normal cost	<u>(21.4)</u>
Total	(\$15.9)
Actuarial gains/(losses) from: Service retirements, disability retirement, death-in-service	
benefits, and withdrawal payments	0.5
Across-the-board salary increases	15.5
Death after retirement	(0.3)
Investment income	(10.7)
Total actuarial gains/(losses)	\$5.0
Change in net asset/(liability) balance due to changes in actuarial assumptions and plan provisions	<u>0.0</u>
Change in net asset/(liability) balance:	(\$10.9)

The net actuarial gain of \$5.0 million indicates that actual experience since the last valuation was more favorable than expected. The most significant factor was net actuarial gains from across-the-board pay increases, which offset the investment return loss (on the actuarial value of assets).



E. <u>DISTRIBUTIONS OF NORMAL COST</u>

Type of Benefit	Percent of	of Payroll
	August 31, 2004	August 31, 200
Retirement	1.476%	1.463%
Death	0.019	0.018
Occupational Disability	0.026	0.026
Expenses	<u>0.100</u>	<u>0.100</u>
Total	1.621%	1.607%
ACTUARIAL BALANCE SHEET		
	August 31, 2004	August 31, 2003
Actuarial Assets:		
Actuarial Value of Tangible Assets	\$679,242,950	\$666,588,289
Actuarial Present Value of Future		
Normal Costs	<u>166,222,261</u>	<u>171,401,218</u>
Total	\$845,465,211	\$837,989,507
Actuarial Liability:		
Actuarial Present Value of Benefits		
Active members		
- service retirement	\$542,792,620	\$539,159,560
 death benefit plan 	6,613,007	6,533,875
 occupational disability 	4,056,847	4,154,665
- total	\$553,462,474	\$549,848,100
Inactive vested members	496,650	1,160,853
Annuitants	233,720,473	218,306,453
Total	\$787,679,597	\$769,315,406
Net Asset/(Liability) Balance:	\$57,785,614	\$68,674,101



APPENDIX A

SUMMARY OF PLAN PROVISIONS

A. <u>MEMBERSHIP</u>

- A "law enforcement officer" who has been commissioned by the Department of Public Safety, Texas Alcoholic Beverage Commission, State Purchasing and General Services Commission Capital Area Security Force, Parks and Wildlife Department and commissions recognized by the Commission on Law Enforcement Officers Standards and Education.
- A "custodial officer" employed by the Texas
 Department of Corrections and certified by
 the department as having normal duties of
 supervising and having direct contact with
 inmates.

B. <u>SERVICE RETIREMENT BENEFITS</u>

Service Retirement Eligibility:

Last day of any month following attainment of:

- age 50 and 20 years of service as a law enforcement or custodial officer or,
- the sum of age and service is at least 80.

Standard Service Retirement Annuity:

Monthly annuity payable for life equal to a percentage of final average compensation, multiplied by years and months of service. Final average compensation is the highest 36 months average paid while a law enforcement or custodial officer. The percentage is the sum of the percentage factor for a standard service retirement under ERS plus 0.5%.

The monthly annuity payable shall be reduced by retirement benefits payable for service as a law enforcement or custodial officer under the regular employee provisions of ERS.



Early Service Retirement Eligibility:

Last day of the month following completion of 20 years of service.

Reduced Early Service Retirement Annuity:

Standard service retirement benefit reduced by an early retirement factor if the sum of age and service is less than 80.

Age at Retirement	Percentage of Normal Retirement Benefit
38	33.0%
39	36.1
40	39.5
41	43.2
42	47.3
43	51.8
44	56.7
45	62.2
46	68.3
47	75.0
48	82.5
49	90.8

The monthly benefit is further reduced by the amount of the monthly benefit that the retiree is entitled to receive at age 50 for service as a law enforcement or custodial officer according to the regular retirement benefit provisions of ERS.

Optional Service Retirement Benefits:

Five optional forms plus partial lump sum option assumed actuarially equivalent to life annuity. Member must choose the same form under ERS and this Fund.



C. <u>DISABILITY RETIREMENT BENEFITS</u>

Occupational Disability Retirement:

Standard service retirement benefit percentage, with a minimum of 50%, times member's final average compensation, without reduction for age. Maximum benefit is 100% of salary. If the member's condition makes the person incapable of gainful occupation and is considered total disability under federal Social Security law, the standard disability retirement annuity is 100% of the member's final average compensation. Benefit is offset by payment from ERS under the standard disability provisions applicable to regular employees.

Nonoccupational Disability Retirement:

None from this Fund.

Optional Disability Retirement Benefits:

Five optional forms assumed actuarially equivalent to standard annuity. Member must choose the same form under ERS and this Fund.

D. <u>DEATH BENEFITS</u>

Before Retirement with 20 or More Years

of Service:

Death benefit plan filed by member, beneficiary or estate payable as a lifetime annuity or 10year certain annuity, offset by the death benefit payable from ERS under provisions for regular employees.

After Retirement:

Based on optional form selected.

E. <u>VESTED BENEFITS AFTER TERMINATION OF EMPLOYMENT</u>

Service Retirement Benefit:

Deferred retirement benefit with 20 or more years of service, forfeitable if regular employee contributions from ERS are withdrawn.

Death Benefit:

Vested in death benefit plan with 20 years of service. Forfeitable if regular employee contributions are withdrawn from ERS before death.



F. <u>WITHDRAWAL BENEFITS</u> None from this Fund.

G. <u>CONTRIBUTIONS</u>

Members: None.

State of Texas: For fiscal year 2005 there is no State

contribution.

H. CHANGES IN PLAN PROVISIONS

There were no changes in plan provisions since the prior valuation.

I. <u>REFERENCES</u>

For a complete description of all of the provisions of the law which describe the Commissioned Law Enforcement and Custodial Officer Supplemental Retirement Fund, see Texas Government Code, Title 8, Subtitle B. Alternatively, the staff of the Employees Retirement System of Texas can provide more of the details of the provisions.



APPENDIX B

SUMMARY OF ASSETS

A. SOURCE OF INFORMATION

Towers Perrin used the plan asset data provided without audit.

B. <u>VALUES</u>

	August 31, 2004	August 31, 2003
Market Value of Plan Assets	\$633,812,393	\$594,093,643
Actuarial Value of Total Assets	\$679,242,950	\$666,588,289

The calculation of the actuarial value of assets is based on the market-related value of plan assets, with five-year 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 plus the carrying value (net of depreciation) of other assets and liabilities) 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.



C.	ASSET	RECONCIL	IATION.
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D.

1.	Value of Plan Net Assets, August 31, 2003:	\$594,093,643
2.	Contributions	0
3.	Benefits paid	27,557,057
4.	Administrative expenses	630,216
5.	Investment return	67,906,023
6.	Value of Plan Net Assets, August 31, 2004: (1)+(2)-(3)-(4)+(5)	\$633,812,393
DEV	ELOPMENT OF ACTUARIAL VALUE OF PLAN ASSETS	
1.	Actuarial Value of Plan Assets, August 31, 2003:	\$666,588,289
2.	Contributions	0
3.	Benefits paid	27,557,057
4.	Expenses	630,216
5.	Expected investment return at 8%	52,199,573
6.	Expected Value of Plan Assets, August 31, 2004: (1)+(2)-(3)-(4)+(5)	\$690,600,589
7.	Market-related Value of Plan Assets, August 31, 2004:	633,812,393



8.

9.

10.

(6)+(9)

Difference: (7)-(6)

Adjustment to expected value: 20% x (8)

Actuarial Value of Plan Assets, August 31, 2004:

(56,788,196)

(11,357,639)

\$679,242,950

APPENDIX C

SUMMARY OF MEMBER DATA AND RELATED LIABILITIES

A. MEMBER DATA AS OF AUGUST 31, 2004

The results in this actuarial valuation report are based on the member and annuitant data provided by ERS. All actuarial computations performed by Towers Perrin are directly dependent on the accuracy and completeness of the information provided.

We have reviewed this data for reasonableness and consistency, but we have not audited it. During our review, we discovered a small number of missing and inconsistent data items. We discussed these issues with ERS staff and worked closely with them to get the best data possible, given the implementation of new systems during the 2004 plan year. In a few cases, we made approximations and assumptions to adjust the missing and inconsistent data. We believe that the number and degree of any missing or inconsistent data items were immaterial and had no significant impact on the validity of the actuarial valuation results.

Member data collected as of August 31, 2004 has been used as the basis for performing this valuation.

Section B contains a summary of active members used in the current valuation. The summary is based on age on the last birthday and completed years of service as of August 31, 2004. Pay is determined from reported ERS contributions for August 2004 for contributing members and from reported pay for noncontributing active members.

Section C contains a summary of annuitant data used in the current valuation. The annuitant summary is based on the monthly benefit reported as of August 31, 2004.



B. SUMMARY DATA ON ACTIVE AND INACTIVE MEMBERS

	August 31, 2004	August 31, 2003
Active Members		
Number:		
Male	24,750	25,981
Female	<u>13,555</u>	<u>14,354</u>
Total	38,305	40,335
Average Annual Rate of Salary:	\$31,818	\$31,382
Average Years of Service Credit:	8.1	7.5
Average Age:	40.4	39.8
Inactive Members		
Vested:		
Male	14	18
Female	_0	<u>_1</u>
Total	14	19

These figures exclude those who retired August 31, because they were included as retirees in the valuation. The average annual rate of salary is based on the member ERS contributions for the month of August for contributing members and on reported pay for noncontributing active members.

The following table shows additional detail for active members.

					ACTIVE PAR	PARTICIPANT DIS	DISTRIBUTION BY	AGE AND	COMPLETED YEARS O	OF SERVICE				
Age Last Birthday	st ay	0		2		4	Completed	sted Years of	Service	20-24	25-29	30-34	Over 34	Total
15-19	Number Tot Pay Avg Pay	177 3,934,954 22,231	44 1,009,480 22,943	2 55,332 27,666	000	0.00	000	000	000	000	000	000	000	223 4,999,766 22,420
20-24	Number Tot Pay Avg Pay	20,0	726 18,087,476 24,914	17,9	346 9,430,162 27,255	221 6,237,752 28,225	87 2,536,192 29,152	000	000	000	, 0 0 0	000	000	2,938 74,327,734 25,299
25-29	Number Tot Pay Avg Pay	580 14,251,268 24,571	603 16,017,886 26,564	722 20,730,694 28,713	518 14,518,810 28,029	475 14,047,496 29,574	1,337 42,087,338 31,479	50 1,671,598 33,432	000	000	0 0 0	000		4,285 123,325,090 28,781
30-34	Number Tot Pay Avg Pay	452 11,111,310 24,583	449 12,160,252 27,083	618 17,501,236 28,319	412 11,739,464 28,494	480 14,477,196 30,161	2,328 77,073,282 33,107	34,405,360 34,509	18 632,104 35,117	000	000	000	0 0 0	5,754 179,100,204 31,126
35-39	Number Tot Pay Avg Pay	342 8,295,098 24,255	354 9,335,810 26,372	410 11,546,902 28,163	312 8,622,128 27,635	349 10,104,818 28,954	1,834 60,217,586 32,834	1,419 50,251,380 35,413	707 27,294,032 38,605	33 1,208,052 36,608	000	000	0 0 0	5,760 186,875,806 32,444
40-44	Number Tot Pay Avg Pay	287 7,001,396 24,395	292 7,636,238 26,152	385 10,609,156 27,556	276 7,812,750 28,307	287 8,476,924 29,536	1,508 47,844,688 31,727	1,293 44,512,192 34,426	1,122 44,763,952 39,897	595 24,917,792 41,879	18 783,454 43,525	000	000	6,063 204,358,542 33,706
45-49	Number Tot Pay Avg Pay	204 5,012,878 24,573	240 6,130,594 25,544	277 7,634,224 27,560	210 5,822,286 27,725	269 7,814,832 29,051	1,326 41,819,786 31,538	1,034 35,230,288 34,072	746 29,053,072 38,945	677 31,413,748 46,401	292 14,899,346 51,025	7 300,266 42,895	000	5,282 185,131,320 35,049
50-54	Number Tot Pay Avg Pay	165 3,994,666 24,210	173 4,503,872 26,034	227 6,194,812 27,290	165 4,583,896 27,781	202 5,902,586 29,221	1,128 35,594,762 31,556	1,005 34,268,256 34,098	560 21,396,108 38,207	151 6,602,314 43,724	107 5,913,350 55,265	41 2,461,310 60,032	0 0 0	3,924 131,415,932 33,490
55-59	Number Tot Pay Avg Pay	137 3,311,024 24,168	136 3,463,974 25,470	146 3,884,496 26,606	128 3,519,040 27,493	158 4,534,408 28,699	834 25,954,232 31,120	678 22,969,086 33,878	319 11,450,160 35,894	76 3,129,700 41,180	31 1,594,714 51,442	15 889,594 59,306	6 341,116 56,853	2,664 85,041,544 31,923
60-64	Number Tot Pay Avg Pay	50 1,247,198 24,944	59 1,495,102 25,341	2,009,260 27,152	61 1,627,570 26,681	61 1,737,924 28,491	396 12,318,400 31,107	284 9,560,754 33,665	132 4,691,720 35,543	17 669,982 39,411	75,372	1 49,930 49,930	222,014 74,005	1,140 35,705,226 31,320
Over 6	64 Number Tot Pay Avg Pay	195,708 24,464	348,030 23,202	25 634,788 25,392	11 317,380 28,853	23 649,584 28,243	102 3,214,768 31,517	60 2,114,884 35,248	21 725,396 34,543	6 270,978 45,163	000	000	39,870 39,870	8,511,386 31,292
Total	Number Tot Pay Avg Pay	3,276 78,442,194 23,945	3,091 80,188,714 25,943	3,570 98,750,358 27,661	2,439 67,993,486 27,878	2,525 73,983,520 29,300	10,880 348,661,034 32,046	6,820 234,983,798 34,455	3,625 140,006,544 38,622	1,555 68,212,566 43,867	450 23,266,236 51,703	64 3,701,100 57,830	10 603,000 60,300	38,305 1,218,792,550 31,818
					Average	Average Age = 40.4	Ave	Average Service	8 = 8.1					

C. ANNUITANT BENEFITS AS OF AUGUST 31, 2004

	Number	
Type of Appuitu	of Accounts	Monthly
Type of Annuity	Accounts	Payment
Service Retirements and Beneficiaries:		
Male Annuitants:		
Straight Life	1,484	\$731,218
Joint & Full	774	346,788
Joint & One-Half	827	404,486
Life With 60 Months Certain	54	27,634
Life With 120 Months Certain	68	29,576
Joint & Three-Fourths	524	262,402
Annuity Certain	1	<u>65</u>
Male Total	3,732	\$1,802,169
Female Annuitants:		
Straight Life	632	\$215,882
Joint & Full	24	6,929
Joint & One-Half	22	8,896
Life With 60 Months Certain	12	4,805
Life With 120 Months Certain	6	1,550
Joint & Three-Fourths	6	2,381
Annuity Certain	4	1,079
Female Total	<u>706</u>	<u>\$241,522</u>
Total Service Retirements	4,438	\$2,043,691



Type of Annuity	Number of Accounts	Monthly Payment
Disability Retirements:		
Male Annuitants:		
Straight Life	73	\$61,247
Joint & Full	9	7,509
Joint & One-Half	7	6,015
Life With 60 Months Certain	0	0
Life With 120 Months Certain	0	0
Joint & Three-Fourths	4	3,307
Annuity Certain	0	0
Male Total	93	\$78,078
Female Annuitants:		
Straight Life	40	\$28,460
Joint & Full	0	0
Joint & One-Half	2	932
Life With 60 Months Certain	0	0
Life With 120 Months Certain	2	1,764
Joint & Three-Fourths	1	252
Annuity Certain	0	0
Female Total	<u>45</u>	<u>\$31,408</u>
Total Disability Retirements	138	\$109,486
TOTAL SERVICE AND DISABILITY RETIREMENTS	4,576	\$2,153,177



D. AVERAGE AGE, SERVICE AND BENEFIT OF ANNUITANTS AS OF AUGUST 31, 2004

			Av	rerage	
	Number of Annuitants	Monthly Benefit	Age at Retirement	Age at 08/31/2004	Service at Retirement
All Annuitants in Pay Status	4,576	\$470.54	53.55	61.49	25.79
Service Retirees	3,995	\$479.18	53.90	60.64	26.20
Disability Retirees	138	\$793.38	44.38	57.38	7.51
Beneficiaries	443	\$291.99	53.30	70.42	27.79

E. RETIREMENT MEMBERS BY TYPE OF BENEFIT AS OF AUGUST 31, 2004

		Type of R	<u>Retirement</u>	Option Selected					
Amount of	Number of								
Monthly Benefit	<u>Annuitants</u>	<u>Service</u>	Disability	<u>Life</u>	Option 1	Option 2	Option 3	Option 4	Option 5
0 - 200	296	295	1	167	74	30	4	2	19
200 – 400	1,734	1,674	60	964	338	236	32	37	127
400 – 600	1,632	1,602	30	687	245	406	11	28	255
600 - 800	588	587	1	233	90	142	8	5	110
800 - 1,000	153	152	1	72	26	33	5	2	15
1,000 - 1,200	53	52	1	24	18	3	3	1	4
1,200 - 1,400	42	31	11	26	7	4	2	0	3
1,400 - 1,600	36	22	14	27	5	2	0	1	1
1,600 - 1,800	13	5	8	11	1	0	1	0	0
1,800 - 9,999	<u>29</u>	<u>18</u>	<u>11</u>	22	4	2	_0	0	1
Total	4,576	4,438	138	2,233	808	858	66	76	535



F. RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ANNUITY PAYROLLS

	Number of	Benefit A	mount	Average Annual
	Annuitants	Monthly	Annually	Benefit
August 31, 2003	4,173	\$1,984,883.17	\$23,818,598	\$5,708
Added to Rolls	454	221,942.64	2,663,312	
Removed from Rolls (est.)	(51)	(53,649.21)	(643,791)	
Other Beneficiaries (est.)	0	0	0	
August 31, 2004	4,576	\$2,153,176.60	\$25,838,119	\$5,646



APPENDIX D

SUMMARY OF RECOMMENDED ACTUARIAL ASSUMPTIONS

A. <u>ACTUARIAL ASSUMPTIONS</u>

Investment Rate of Return: 8.0% per year, compounded annually.

Administrative Expenses: 0.1% of payroll per year.

Salary Increases: Salary increase rates include 4.0% annual

increase for inflation plus increases for merit, promotion and longevity (MPL). See sample

rates.

Payroll Growth: 4.0% per year, compounded annually.

Mortality:

Active Lives: Tables based on LECOSRF experience; see

sample rates.

Service Retirees and Beneficiaries: 1994 Group Annuity Mortality, male and female

tables.

Disability Retirees: Tables based on ERS and LECOSRF experience;

see sample rates.

Disability Retirement:

Rates of Disability Retirement: Graded tables based on LECOSRF experience.

Option Selection Percentage:StandardOption 1Option 4Male Members50%40%10%Female Members75%15%10%



Beneficiary Characteristics:

Male Members Member is three years older than female

beneficiary.

Female Members Member is same age as male beneficiary.

Termination of Employment: Graded tables based on LECOSRF experience;

see sample rates.

Service Retirement:

Rates of Service Retirement: Graded tables based on LECOSRF experience;

see sample rates.

Form of Payment: Standard Annuity (Life Annuity).

Credited Service: Assumed one year earned in each future year

employed. Service credit upon service retirement is assumed to be increased by 4.6% for

accumulated leave.

Death Benefit Plan:

Option Selection Percentage: Option 1 Option 4

Male Members 75% 25%

Female Members 60% 40%

Beneficiary Characteristics:

Male Members Member is three years older than female

beneficiary.

Female Members Member is same age as male beneficiary.

Benefit Commencement: Inactive members are assumed to commence

receipt of benefits upon first eligibility.

Missing Data: Entry age is assumed to be age 30 and sex is

assumed to be male if data is missing. The number of missing data items was immaterial.

B. <u>SAMPLE RATES</u>

Annual Salary Increases for Merit, Promotion and Longevity – LECO Members:

Male and Female – Based on Years of Service

Age	0	1	2+
20	10.0%	4.5%	2.0%
25	10.0	4.5	2.0
30	10.0	4.5	2.0
35	10.0	4.5	2.0
40	10.0	4.5	2.0
45	10.0	4.5	2.0
50	10.0	4.5	2.0
55	10.0	4.5	2.0
60	10.0	4.5	2.0

Annual Rates of Termination – LECO Members:

Male and Female	 Based on ` 	Years of Service
-----------------	--------------------------------	------------------

<u>Age</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10-14</u>	<u>15-19</u>	<u>20+</u>	
20	29%	25%	18%	18%	17%	17%	16%	11%	11%	11%	0%	0%	0%	
25	25	20	16	16	15	14	14	10	10	10	10	0	0	
30	24	19	15	15	11	10	10	10	9	9	9	0	0	
35	24	15	13	13	10	10	9	8	8	7	6	2	0	
40	23	14	10	10	10	10	9	7	7	7	6	2	0	
45	21	13	9	9	9	9	8	7	7	7	5	2	0	
50	19	10	8	8	6	5	5	5	5	5	5	2	0	
55	18	10	8	8	6	5	5	4	4	4	4	2	0	
60	25	22	10	10	6	5	5	0	0	0	0	0	0	

Active Mortality Rates – LECO Members:

	Occupational		Nonoccupational		
Age	Females	Males	Females	Males	
20	0.001%	0.003%	0.034%	0.044%	
25	0.001	0.003	0.035	0.058	
30	0.001	0.003	0.042	0.071	
35	0.001	0.003	0.057	0.076	
40	0.001	0.003	0.085	0.097	
45	0.001	0.003	0.117	0.144	
50	0.001	0.003	0.171	0.237	
55	0.001	0.003	0.275	0.408	
60	0.001	0.003	0.533	0.739	
65	0.001	0.003	1.036	1.349	

Disability Retirement Rates-LECO Members:

	Occupational (F	emales & Males)	Nonoccupational
Age	Total	Non-Total	Females & Males
20	0.0002%	0.0008%	0.000%
25	0.0002	0.0008	0.000
30	0.0006	0.0024	0.016
35	0.0012	0.0048	0.054
40	0.0018	0.0072	0.101
45	0.0028	0.0112	0.169
50	0.0040	0.0160	0.284
55	0.0048	0.0192	0.424
60	0.0054	0.0216	0.000
65	0.0052	0.0208	0.000
65	0.0052	0.0208	0.000



Service Retirement Rates – LECO Members:

First Year Eligible to Retire

Age	Females	Males
36-44	1%	1%
45-49	3	3
50	39	25
51-54	16	12
55	16	12
56-59	16	12
60	31	21
61-64	31	11
65	46	37
66-69	23	18
70+	100	100

After First Year Eligible to Retire

		Females						Male	es				
<u>Age</u>	<u>0-9</u>	<u>10-19</u>	<u>20+</u>	<u>0-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-23</u>	<u>24</u>	<u>25-26</u>	<u>27</u>	<u>28</u>	<u>29-34</u>	<u>35+</u>
36-44	0%	0%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%
45-49	0	0	2	0	0	0	3	3	3	3	3	3	3
50	0	0	30	0	0	26	29	30	45	47	50	50	60
51-54	0	0	12	0	0	13	14	15	11	12	12	14	14
55	0	12	24	0	12	13	30	30	22	24	25	30	30
56-59	0	12	12	0	12	13	14	13	11	12	12	14	14
60	24	24	24	21	24	26	43	45	45	47	50	50	60
61-64	24	24	24	11	24	26	29	30	28	29	31	36	36
65	35	35	35	37	41	45	50	50	40	40	43	50	50
66-69	18	18	18	18	20	22	24	25	19	20	21	24	24
70+	100	100	100	100	100	100	100	100	100	100	100	100	100

Mortality Rates – Retirees and Beneficiaries:

Service Retirees & Beneficiaries (1994 GAM)

Disability Retirees*

	Deficitiones	(1994 GAIVI)	Disability	Relifees
Age	Females	Males	Females	Males
15	0.0216%	0.0345%	2.50%	3.38%
20	0.0284	0.0507	2.50	3.38
25	0.0291	0.0661	2.50	3.38
30	0.0351	0.0801	2.25	2.53
35	0.0478	0.0851	2.03	1.95
40	0.0709	0.1072	1.99	1.97
45	0.0973	0.1578	2.13	2.25
50	0.1428	0.2579	2.44	2.68
55	0.2294	0.4425	2.80	3.37
60	0.4439	0.7976	3.14	4.42
65	0.8636	1.4535	3.52	5.09
70	1.3730	2.3730	3.90	5.91
75	2.2686	3.7211	4.67	7.16
80	3.9396	6.2027	7.09	10.15
85	6.7738	9.7240	10.72	15.98
90	11.6265	15.2931	16.82	25.25
95	18.6213	23.3606	25.25	37.89
100	27.6427	31.7238	37.89	56.84
105	38.3597	40.7224	56.84	85.27
110	48.2325	48.6745	100.00	100.00
115	50.0000	50.0000	100.00	100.00
120	100.0000	100.0000	100.00	100.00

^{*} For females, assumption is 95% of PBGC disabled mortality grading to 100% from age 85 to 90. For males, assumption is 70% of PBGC disabled mortality grading to 100% from age 60 to 90.

C. CHANGES IN ACTUARIAL ASSUMPTIONS

Since the prior valuation, there were no changes in actuarial assumptions.



APPENDIX E

DESCRIPTION OF ACTUARIAL METHODS AND PROCEDURES

A. <u>ACTUARIAL COST METHOD - NORMAL COST AND ACTUARIAL ACCRUED LIABILITY</u>

The method used to determine the normal cost and actuarial accrued liability is the entry age actuarial cost method, described below:

Entry age is determined as the member's age on the valuation date minus years of service credit as of the valuation date.

On the actuarial valuation date, the actuarial present values of projected benefits and valuation earnings for each active employee included in the actuarial valuation whose attained age is less than the assumed latest retirement age are determined at the individual's entry age. For each such individual, the individual normal cost is the actuarial present value of projected benefits at entry age, divided by the actuarial present value of valuation earnings at entry age, multiplied by the individual's valuation earnings for the valuation year. The sum of all individual normal costs is the normal cost for the valuation year.

The excess on the actuarial valuation date of the actuarial present value of projected benefits for all individuals included in the actuarial valuation over the sum of the actuarial present values of future individual normal costs is the actuarial accrued liability. The excess of the actuarial accrued liability over the actuarial value of plan assets is the unfunded actuarial accrued liability. If the unfunded actuarial accrued liability is negative, the excess of the actuarial value of plan assets over the actuarial accrued liability is called the net asset balance.

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 actuarial accrued liability.

Adjustments to the unfunded actuarial 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 actuarial accrued liability resulting from the change.



B. <u>ACTUARIAL VALUE OF PLAN ASSETS</u>

The actuarial value of plan assets is based on the market-related value of plan assets, with fiveyear 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 plus the carrying value (net of depreciation) of other assets and liabilities) 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.

C. 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 increase percentage effective on or after September 1 and projected according to the actuarial assumptions for the upcoming fiscal year.

D. CHANGES IN ACTUARIAL METHODS AND PROCEDURES

No changes in the actuarial cost method or actuarial valuation procedures have been adopted since the prior actuarial valuation.



APPENDIX F

GASB 25 AND 27 REPORTING

A. DISCLOSURE OF PENSION INFORMATION

Actuarial calculations under Statement No. 25 of the Governmental Accounting Standards Board (GASB 25) are for purposes of providing the required supplementary information to the financial statement of the plan. The calculations and disclosures reported in this section have been made on a basis consistent with our understanding of GASB 25.

Beginning with the fiscal year ending August 31, 1996, the System has prepared the plan's financial statements in accordance with GASB 25, which supersedes GASB 5 for the plan's financial reporting. Effective with the fiscal year ending August 31, 1998, the State has prepared financial Statements in accordance with Statement No. 27 of the Governmental Accounting Standards Board (GASB 27), which supersedes GASB 5 for the employer's financial reporting.

B. <u>SCHEDULE OF FUNDING PROGRESS</u>

		Actuarial Val	uation Date
		August 31, 2004	August 31, 2003
1.	Actuarial Value of Assets	\$679,242,950	\$666,588,289
2.	Actuarial Accrued Liability (AAL)	\$621,457,336	\$597,914,188
3.	Unfunded AAL (UAAL): (2)-(1)	(\$57,785,614)	(\$68,674,101)
4.	Funded Ratio: (1)÷(2)	109.3%	111.5%
5.	Covered Payroll (Valuation Payroll as of the Actuarial Valuation Date)	\$1,230,580,964	\$1,277,894,221
6.	UAAL as a Percentage of Covered Payroll (3)÷(5)	(4.7%)	(5.4%)



C. SCHEDULE OF EMPLOYER CONTRIBUTIONS

		Year Ended August 31		
		2005	2004	
1.	Actuarial Valuation Date	August 31, 2004	August 31, 2003	
2.	Annual Required Contribution (ARC)			
	a. Employer's Normal Costb. UAALc. Amortization of UAALd. ARC: (a)+(c)	\$19,943,898 (\$57,785,614) (\$19,943,898) \$0	\$20,530,863 (\$68,674,101) (\$20,530,863) \$0	
3.	Employer Contributions	\$0	\$0	
4.	Percentage Contributed: (3)÷(2)(d)	100%	100%	
5.	Excess Contributions/Contribution Deficiencies: (3)-(2)(d)	\$0	\$0	

D. ANNUAL PENSION COST AND NET PENSION OBLIGATION

The State's annual pension cost and net pension obligation for the current and prior year were as follows:

	_	Year Ended August 31	
		2005	2004
1.	Annual required contribution (ARC)	\$0	\$0
2.	Interest on net pension obligation	0	0
3.	Adjustment to annual required contribution	0	0
4.	Annual pension cost, APC (1)+(2)-(3)	0	0
5.	Contributions made	0	0
6.	Increase/(decrease) in net pension obligation (4)+(5)	0	0
7.	Net pension obligation beginning of year	0	0
8.	Net pension obligation end of year (6)+(7)	0	0



E. NOTES TO TREND DATA

	Year Ended August 31	
	2005	2004
Actuarial Cost Method	Entry Age	Entry Age
Amortization Method	Level Percent Open	Level Percent Open
Remaining Amortization Period (Years)**	3.1	3.7
Asset Valuation Method	5-year smoothed market	5-year smoothed market
Actuarial Assumptions:		
Investment Rate of Return* Projected Salary Increases* *Includes inflation at	8.0% 6.0%-14.0% 4.0%	8.0% 6.0%-14.0% 4.0%
Cost-of-Living Adjustments	None	None

^{**} For the Law Enforcement Supplemental Fund there is no unfunded actuarial accrued liability. This period represents the number of years the fund is projected to remain actuarially sound at the current contribution rate.

F. <u>SOLVENCY TEST</u>

Active Member Contributions	Actuarial Accrued Liabilities \$0	Valuation Assets \$0	Portion of AAL Covered by Valuation Assets
Retirees and Beneficiaries	233,720,473	233,720,473	100.0%
Active Members (Employer Financed Portion)	387,736,863	445,522,477	114.9%
Total	\$621,457,336	\$679,242,950	



APPENDIX G

ACTUARIAL METHODOLOGY AND PENSION TERMINOLOGY

A. ACTUARIAL METHODOLOGY

This section summarizes the conceptual methodology used in preparing the Actuarial Balance Sheet in this valuation.

Actuarial Methodology

The actuarial valuation of a defined benefit plan is comprised of two separate processes.

First, the actuarial present value, as of the actuarial valuation date, of both current and projected benefits to be paid under the plan is determined. In determining the actuarial present value of these benefits, actuarial assumptions must be made as to the number of members eventually receiving benefits, the amount of benefits to be paid, and the portion of the benefit obligation to be covered by future investment earnings.

Second, the financing of these benefit obligations on an advance basis is established. An actuarial cost method is applied to determine the Actuarial Accrued Liability, which is the amount of the eventual cost that has accrued as of the actuarial valuation date. The actuarial cost method also establishes the Normal Cost, which is the rate at which future costs will accrue annually after the actuarial valuation date.

Actuarial Assumptions

The true cost of a member's pension benefit is not known until the final benefit payment has been made. Consequently, the exact cost of plan benefits for the current employee group will not be determinable for 50 to 75 years. Since provision for this cost must be made prior to the exact determination, a model is established that will estimate the future cost of plan benefits. The model utilizes parameters which require assumptions as to the future occurrences of various events affecting the demographic profile of the employee group and the assets of the pension fund. Such actuarial assumptions include death, retirement, termination, disability, salary increases and investment return. Current and long-term economic factors, the nature of the covered workforce, and significant features of the plan must be considered in the selection of a set of actuarial assumptions to assure the reasonableness of the results predicted by the actuarial assumptions.



While care is taken in the selection of actuarial assumptions, actual experience is expected to deviate from these actuarial assumptions over the short term. The suitability of the actuarial assumptions is measured by how closely the experience of the plan, on a long-term basis, conforms to projected results. Deviations from projected results are called actuarial gains and losses. Periodic actuarial valuations will measure the extent of these gains and losses as of an actuarial valuation date. If either actuarial gains or losses predominate, then it is possible that one or more of the actuarial assumptions is no longer appropriate. Thus, actuarial assumptions must be continually monitored for reasonableness and subsequent cost estimates may be modified accordingly. While individual actuarial assumptions are intended to be representative, it is the aggregate effect of all actuarial assumptions working together that determines their appropriateness.

Actuarial Liabilities

Actuarial liabilities include the actuarial present value of all future benefits and expenses. To determine the actuarial present value of all future benefits, the probability of future events which establish benefit payments is forecast utilizing the actuarial assumptions. The plan provisions and current employee data are used to forecast the amount of benefits to be paid. Actuarial assumptions for survival among retired members are used to estimate the duration of these benefit payments. Each probable benefit payment is then discounted to the actuarial valuation date using the actuarial assumption for investment return. These discounted payments are then summed to arrive at the total actuarial present value of benefits.

Assets

The assets at any time are equal to the sum of present assets in the pension fund plus future assets. Future assets will result from future contributions and future investment return on all assets.

Actuarial Balance Sheet

The actuarial balance sheet of a retirement plan displays the fundamental financial status of the plan on the actuarial valuation date. As stated previously, the actuarial liabilities are the sum of the actuarial present value of all future projected benefit payments to current active and inactive plan members. Current assets in the pension fund plus the actuarial present value of future contributions comprise the total assets of the plan.

Actuarial Cost Method

To determine the funding requirements of the plan, it is necessary to adopt an actuarial cost method. The choice of the actuarial cost method does not affect the actuarial balance sheet financial status, which is a function only of the plan provisions, actuarial assumptions, employee data and assets. However, the actuarial cost method has a direct impact on the incidence of the funding requirements. The actuarial cost method allocates the actuarial present value of future employer contributions between the past and future, and thus establishes the Unfunded Actuarial Accrued Liability and Normal Cost, respectively.



The funding requirements for each plan year equal the Normal Cost for that year plus an amortization payment in respect of the Unfunded Actuarial Accrued Liability.

B. PENSION TERMINOLOGY

The following terms are defined in accordance with standard pension terminology adopted by the actuarial profession.

Accumulated Plan Benefit

The amount of an individual's benefit (whether or not vested) as of a specified date, determined in accordance with the terms of a pension plan and based on compensation (if applicable) and service to that date.

Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement, and retirement; changes in compensation and Social Security benefits; rates of investment earnings and asset appreciation or depreciation; and other relevant items.

Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, in the form of a Normal Cost and an Actuarial Accrued Liability.

Actuarial Gain (Loss)

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.



Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

Actuarial Value of Plan Assets

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Actuarial Valuation

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

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Projected Benefits

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.

<u>Unfunded Actuarial Accrued Liability</u>

The Excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.



C. ACCOUNTING TERMINOLOGY

The following terms are defined in accordance with accounting profession terminology.

Actuarial Present Value of Total Projected Benefits

The value as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment. Total projected benefits include all benefits estimated to be payable to all plan members as a result of their service through the valuation date and their expected future service.

Amortization Period (Closed or Open Basis)

A closed amortization period is a specific number of years that is counted from one date and, therefore, declines to zero with the passage of time. An open amortization period is one that begins again or is recalculated at each actuarial valuation date.

Annual Pension Cost

A measure of the periodic cost of an employer's participation in a defined benefit pension plan.

Annual Required Contributions of the Employer (ARC)

The employer's periodic required contributions to a defined benefit pension plan, calculated in accordance with the parameters.

Contribution Deficiencies (Excess Contributions)

The difference between the annual required contributions of the employer (ARC) and the employer's actual contributions in relation to the ARC.

Employer's Contribution

Contributions made in relation to the annual required contributions of the employer (ARC).

Funded Ratio

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.



Investment Return Assumption (Discount Rate)

The rate used to adjust a series of future payments to reflect the time value of money.

Level Dollar Amortization Method

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

Level Percentage of Projected Payroll Amortization Method

Amortization payments are calculated so that they are a constant percentage of the projected payroll of active plan members over a given number of years. The dollar amount of the payments generally will increase over time as payroll increases due to inflation; in dollars adjusted for inflation, the payments can be expected to remain level.

Market-Related Value of Plan Assets

A term used with reference to the actuarial value of assets. A market-related value may be market value (or estimated market value) or a calculated value that recognizes changes in market value over a period of, for example, three to five years.

Net Pension Obligation (NPO)

The cumulative difference since the effective date of GASB Statement between annual pension cost and the employer's contributions to the plan, including the pension liability (asset) at transition, and excluding (a) short-term differences and (b) unpaid contributions that have been converted to pension-related debt.

Normal Cost

For GASB Statements 25 and 27, the term refers to employer normal cost.

Parameters

The set of requirements for calculating actuarially determined pension information included in financial reports.

Payroll Growth Rate

An actuarial assumption with respect to future increases in total covered payroll attributable to inflation; used in applying the level percentage of projected payroll amortization method.

Pension Expenditures/Expense

The amount recognized by an employer in each accounting period for contributions to a pension plan.

