

**PUBLIC EMPLOYEES'
RETIREMENT ASSOCIATION
OF COLORADO**

*Actuarial Report
As of December 31, 2002
May 2003*

May 16, 2003

The Board of Trustees
Public Employees' Retirement Association of Colorado
1300 Logan Street
Denver, Colorado 80203-2386

Dear Trustees:

Subject: Actuarial Valuation for the Public Employees' Retirement Association of Colorado (PERA) as of December 31, 2002

This report summarizes the results of the December 31, 2002 actuarial valuation for the Public Employees' Retirement Association of Colorado (PERA) as well as the results of the December 31, 2002 actuarial valuation of the postretirement health care program.

These valuations are based on the financial and member data provided by PERA and the plan provisions, actuarial assumptions and methods in effect on the valuation date.

No material changes in the PERA pension plan provisions were made during 2002. No material changes in the Health Care Program plan provisions for PERA were made in 2002. Please see page 14 for a summary of the PERA plan provisions. There were no changes made to the actuarial assumptions. The Board adopted the current assumptions that were recommended by Watson Wyatt in their Experience Study dated June 2001. Please see page 23 for a summary of these assumptions.

The Board of Trustees
May 16, 2003
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The valuations were completed in accordance with generally accepted actuarial methods.
Our analysis indicates the funded position for both plans remains sound.

Respectfully submitted,

Gabriel, Roeder, Smith & Company

Lewis Ward
Consultant

W. Michael Carter, FSA, EA
Senior Consultant

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Enclosure

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PUBLIC EMPLOYEES' RETIREMENT ASSOCIATION
OF COLORADO

Actuarial Report as of December 31, 2002

submitted to
The Board of Trustees
Public Employees' Retirement Association of Colorado

Gabriel, Roeder, Smith & Company

May, 2003

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The December 31, 2002 actuarial valuation indicates the following:

1. Due to the continuing weakness in the financial markets all of the Divisions now have an unfunded liability.
2. For the State and School Division and the Municipal Division, the combined employer and member contribution rates are not sufficient to fully fund the costs of the benefit commitments being made to members for their service currently being rendered.
3. For the Judicial Division and the Health Care Trust Fund, the combined employer and member contribution rates are sufficient to fully fund the costs of the benefit commitments being made to members for their service currently being rendered.
4. Although there are no surpluses to fund any Gain Sharing, all of the Divisions continue to allocate part of their employer contributions to the MatchMaker program. This allocation is due to the statutory requirement that the MatchMaker contribution rate may not decrease by more than 1.0% of pay per year.

Key valuation results are summarized below.

	<u>Active Members</u>		Unfunded/ (Overfunded)
	Annual	Actuarial	Accrued Liabilities
	Payroll	(\$ Millions)	(\$ Millions)
	<u>Number</u>	<u>(\$ Millions)</u>	<u>(\$ Millions)</u>
State and School	159,980	\$5,278.6	\$3,912.3
Municipal	12,509	474.8	126.5
Judicial	<u>272</u>	<u>26.4</u>	<u>2.8</u>
Totals	172,761	\$5,779.8	\$4,041.6

Overall Condition: Based upon this December 31, 2002 valuation, the Public Employees' Retirement Association of Colorado still has a relatively good funded ratio of 88% (based on the actuarial value of assets). However, the contribution rates are not currently sufficient to support the current benefit structures of the System. If there is not a significant recovery in the investment markets in the near future, the long term ability of the System to support the benefits will be challenged in the absence of a significant increase in the contribution rates.

Allocation of Statutory Contribution Rates
(State and School Division)

	Percent of Covered Payroll	
	2004 <u>Rates</u>	2003 <u>Rates</u>
1. Statutory Employer Contribution Rate ¹	10.42%	10.42%
2. Less: Total HCTF Allocation		
a) Statutory HCTF Contribution	(1.10)	(1.10)
b) Allocation of Overfunding	(0.00)	(0.00)
c) Total HCTF Allocation	(1.10)	(1.10)
3. Less: Contribution Available for MatchMaker		
a) Statutory Contribution	(0.91) ²	(1.91) ²
b) Allocation of Overfunding	(0.00)	(0.00)
c) Total Contribution Available for MatchMaker	(0.91)	(1.91)
4. Less: Employer Contribution Reduction		
a) Statutory Reduction	(0.25)	(0.25)
b) Allocation of Overfunding	(0.00)	(0.00)
c) Greater Reduction of (a) and (b)	(0.25)	(0.25)
5. Contribution Available for PERA Pre-Funded Benefits 1 + 2.c. + 3.c. + 4.c.	8.16%	7.16%
6. Normal Cost of Pre-Funded Benefits		
a) Service Retirement Benefits	11.34%	11.30%
b) Disability Retirement Benefits	0.89%	0.89%
c) Survivor Benefits	0.53%	0.54%
d) Separation Benefits	<u>3.06%</u>	<u>3.06%</u>
e) Total Normal Cost	15.82%	15.79%
7. Member Contributions ¹	<u>8.02%</u>	<u>8.02%</u>
8. Employer Normal Cost	7.80%	7.77%
9. Percent Available to Amortize UAAL	0.36%	-0.61%
10. Number of Years to Amortize UAAL	Infinite	13 ³

¹Weighted average of more than one statutory rate.

²Total employer contribution available for MatchMaker may not change by more than 1.0% from the previous year.

³Funding period is calculated assuming the employer contribution available for MatchMaker will decrease to 0.91% effective January 1, 2004 and to 0.00% effective January 1, 2005.

Determination of Employer Contribution Rates
(State and School Division)
 (\$ in Thousands)

<u>December 31, Valuation Results:</u>	<u>2002</u>	<u>2001</u>
Actuarial Accrued Liability	\$32,463,918	\$29,469,608
Actuarial Value of Assets	<u>\$28,551,607</u>	<u>\$28,947,935</u>
Unfunded/(Overfunded) Actuarial Accrued Liability	\$3,912,311	\$521,673
Ten-Year Amortization of Overfunding	N/A	N/A
Valuation Payroll	\$5,278,586	\$4,954,605
Amortization of Overfunding as a Percent of Payroll	N/A	N/A
<u>Allocation of Overfunding</u>		
Employer Contribution Reduction	0.00%	0.00%
Effective Date	7/1/2004	7/1/2003
Additional Contribution Allocated to the Health Care Trust Fund	0.00%	0.00%
Effective Date	1/1/2004	1/1/2003
Additional Amount Available for MatchMaker	0.00%	0.00% ¹
Effective Date	1/1/2004	1/1/2003

¹10-year amortization of the UAAL provides 0.10% for Matchmaker.

Allocation of Statutory Contribution Rates
(Municipal Division)

	<u>Percent of Covered Payroll</u>	
	<u>2004</u> <u>Rates</u>	<u>2003</u> <u>Rates</u>
1. Statutory Employer Contribution Rate	10.00%	10.00%
2. Less: Total HCTF Allocation		
a) Statutory HCTF Contribution	(1.10)	(1.10)
b) Allocation of Overfunding	<u>(0.00)</u>	<u>(0.59)</u>
c) Total HCTF Allocation	(1.10)	(1.69)
3. Less: Contribution Available for MatchMaker		
a) Statutory Contribution	(0.51)	(0.52)
b) Allocation of Overfunding	<u>(0.00)</u>	<u>(0.99)</u>
c) Total Contribution Available for MatchMaker	(0.51) ¹	(1.51) ¹
4. Less: Employer Contribution Reduction		
a) Statutory Reduction	(0.00)	(0.00)
b) Allocation of Overfunding	(0.00)	(0.40)
c) Greater Reduction of (a) and (b)	<u>(0.00)</u>	<u>(0.40)</u>
5. Contribution Available for PERA Pre-Funded Benefits 1 + 2.c. + 3.c. + 4.c.	8.39%	6.40%
6. Normal Cost of Pre-Funded Benefits		
a) Service Retirement Benefits	10.90%	10.85%
b) Disability Retirement Benefits	1.45%	1.45%
c) Survivor Benefits	0.64%	0.63%
d) Separation Benefits	<u>3.35%</u>	<u>3.37%</u>
e) Total Normal Cost	16.34%	16.30%
7. Member Contributions	<u>8.00%</u>	<u>8.00%</u>
8. Employer Normal Cost	8.34%	8.30%
9. Percent Available to Amortize UAAL	0.05%	-1.90%
10. Number of Years to Amortize UAAL	Infinite	11 ²

¹May not change by more than 1.0% from the previous year.

²The Division has a surplus as of the valuation date. This represents the number of years to reduce the surplus to \$0.

Determination of Employer Contribution Rates
(Municipal Division)
 (\$ in Thousands)

<u>December 31, Valuation Results:</u>	<u>2002</u>	<u>2001</u>
Actuarial Accrued Liability	\$1,966,143	\$1,746,761
Actuarial Value of Assets	<u>\$1,839,632</u>	<u>\$1,822,413</u>
Unfunded/(Overfunded) Actuarial Accrued Liability	\$126,511	(\$75,652)
Ten-Year Amortization of Overfunding	N/A	\$8,639
Valuation Payroll	\$474,760	\$436,582
Amortization of Overfunding as a Percent of Payroll	N/A	1.98%
 <u>Allocation of Overfunding</u>		
Employer Contribution Reduction	0.00%	0.40%
Effective Date	1/1/2004	1/1/2003
Additional Contribution Allocated to the Health Care Trust Fund	0.00%	0.59%
Effective Date	1/1/2004	1/1/2003
Additional Amount Available for MatchMaker	0.00%	0.99%
Effective Date	1/1/2004	1/1/2003

Allocation of Statutory Contribution Rates
(Judicial Division)

	<u>Percent of Covered Payroll</u>	
	<u>2004</u>	<u>2003</u>
	<u>Rates</u>	<u>Rates</u>
1. Statutory Employer Contribution Rate	14.00%	14.00%
2. Less: Total HCTF Allocation		
a) Statutory HCTF Contribution	(1.10)	(1.10)
b) Allocation of Overfunding	<u>(0.00)</u>	<u>(2.01)</u>
c) Total HCTF Allocation	(1.10)	(3.11)
3. Less: Contribution Available for MatchMaker		
a) Statutory Contribution	(5.45)	(3.09)
b) Allocation of Overfunding	<u>(0.00)</u>	<u>(3.36)</u>
c) Total Contribution Available for MatchMaker	(5.45) ¹	(6.45) ¹
4. Less: Employer Contribution Reduction		
a) Statutory Reduction	(0.25)	(0.25)
b) Allocation of Overfunding	(0.00)	(1.34)
c) Greater Reduction of (a) and (b)	<u>(0.25)</u>	<u>(1.34)</u>
5. Contribution Available for PERA Pre-Funded Benefits 1 + 2.c. + 3.c. + 4.c.	7.20%	3.10%
6. Normal Cost of Pre-Funded Benefits		
a) Service Retirement Benefits	13.22%	13.09%
b) Disability Retirement Benefits	1.92%	1.92%
c) Survivor Benefits	1.29%	1.28%
d) Separation Benefits	<u>1.53%</u>	<u>1.59%</u>
e) Total Normal Cost	17.96%	17.88%
7. Member Contributions	<u>8.00%</u>	<u>8.00%</u>
8. Employer Normal Cost	9.96%	9.88%
9. Percent Available to Amortize UAAL	-2.76%	-6.78%
10. Number of Years to Amortize UAAL	13 ²	10 ³

¹May not change by more than 1.0% from the previous year.

²Funding Period is calculated assuming the employer contribution available for MatchMaker will decrease by 1.0% each subsequent year until it is 0.00% effective January 1, 2010.

³The Division has a surplus as of the valuation date. This represents the number of years to reduce the surplus to \$0.

Determination Of Employer Contribution Rates
(Judicial Division)
 (\$ in Thousands)

<u>December 31, Valuation Results:</u>	<u>2002</u>	<u>2001</u>
Actuarial Accrued Liability	\$165,672	\$150,943
Actuarial Value of Assets	<u>\$162,901</u>	<u>\$165,130</u>
Unfunded/(Overfunded) Actuarial Accrued Liability	\$2,771	(\$14,187)
Ten-Year Amortization of Overfunding	N/A	\$1,620
Valuation Payroll	\$26,357	\$24,140
Amortization of Overfunding as a Percent of Payroll	N/A	6.71%
<u>Allocation of Overfunding</u>		
Employer Contribution Reduction	0.00%	1.34%
Effective Date	7/1/2004	7/1/2003
Additional Contribution Allocated to the Health Care Trust Fund	0.00%	2.01%
Effective Date	1/1/2004	1/1/2003
Additional Amount Available for MatchMaker	0.00%	3.36%
Effective Date	1/1/2004	1/1/2003

Benefit recipients on rolls included in the December 31, 2002 valuation totaled 60,548 with annual benefits of \$1,427,278,692 distributed as follows (\$ in thousands):

<u>Divisions</u>	<u>Retirement Benefits</u>		<u>Survivor Benefits</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Benefits</u>	<u>Number</u>	<u>Annual Benefits</u>	<u>Number</u>	<u>Annual Benefits</u>
State and School	55,373	\$1,333,449	2,011	\$26,597	57,384	\$1,360,046
Municipal	2,778	58,278	163	2,028	2,941	60,306
Judicial	<u>206</u>	<u>6,549</u>	<u>17</u>	<u>378</u>	<u>223</u>	<u>6,927</u>
Totals	58,357	\$1,398,276	2,191	\$29,003	60,548	\$1,427,279

Inactive members and deferred survivor beneficiaries totaled 10,921 as follows:

<u>Divisions</u>	<u>Inactive Members</u>	<u>Deferred Survivors</u>	<u>Total</u>
State and School	9,879	269	10,148
Municipal	734	23	757
Judicial	<u>15</u>	<u>1</u>	<u>16</u>
Totals	10,628	293	10,921

(\$ in Millions)

<u>Division</u>	<u>Actuarial Accrued Liabilities</u>			<u>Actuarial Value of Assets</u>	<u>Unfunded (Overfunded) Accrued Liabilities</u>	<u>Ratio of Assets/Liabilities</u>
	<u>Active Members</u>	<u>Retired Lives*</u>	<u>Totals</u>			
State and School	\$14,292.4	\$18,171.5	\$32,463.9	\$28,551.6	\$3,912.3	0.88
Municipal	1,106.5	859.6	1,966.1	1,839.6	126.5	0.94
Judicial	81.5	84.2	165.7	162.9	2.8	0.98
Totals	\$15,480.4	\$19,115.3	\$34,595.7	\$30,554.1	\$4,041.6	0.88

*Includes deferred benefits for inactive members and survivors.

<u>Divisions</u>	<u>UAAL/Active Member Payroll</u>									
	<u>December 31</u>									
	<u>2002</u>	<u>2001</u>	<u>2000</u>	<u>1999</u>	<u>1998</u>	<u>1997</u>	<u>1996</u>	<u>1995</u>	<u>1994</u>	<u>1993</u>
State and School	.74	.11	*	*	.21	.44	.19	.49	.61	.65
State	N/A	N/A	N/A	N/A	N/A	N/A	.42	.72	.81	.81
School	N/A	N/A	N/A	N/A	N/A	N/A	.02	.33	.46	.53
Municipal	.27	*	*	*	.003	.07	*	.05	.12	.14
Judicial	.11	*	*	*	*	.10	*	.26	.39	.49

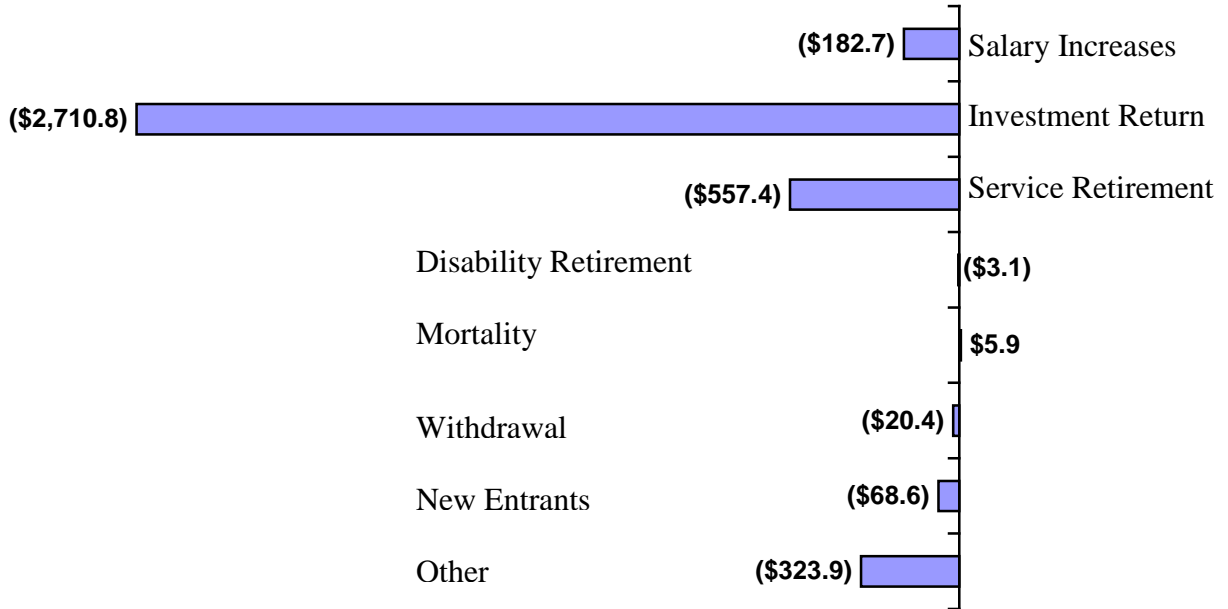
*Division was in surplus this year.

(\$ in Millions)

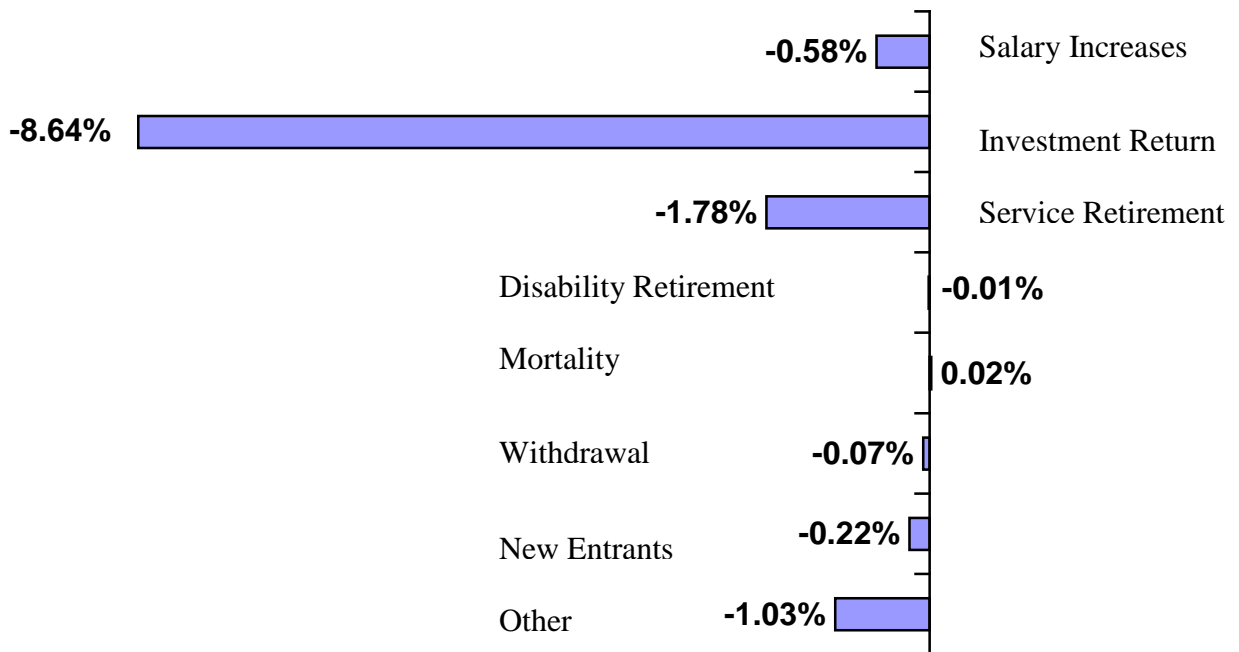
	<u>State and School</u>	<u>Municipal</u>	<u>Judicial</u>	<u>Total</u>
1. UAAL beginning of year	\$521.7	(\$75.6)	(\$14.2)	\$431.9
2. Increase due to change in assumptions	0.0	0.0	0.0	0.0
3. UAAL after change in assumptions: 1 + 2	521.7	(75.6)	(14.2)	431.9
4. Annual contribution in excess of the Normal Cost	260.4	16.6	0.0	277.0
5. Interest on (3) and (4): .0875 x (3) -.04375 x (4)	<u>34.2</u>	<u>(7.4)</u>	<u>(1.2)</u>	<u>25.6</u>
6. Expected from last year's valuation: 1+2-4+5	295.5	(99.6)	(15.4)	180.5
7. Total experience gains (losses)	(3,616.8)	(226.1)	(18.2)	(3,861.1)
8. UAAL at year end after changes: (6)-(7)	\$3,912.3	\$126.5	\$2.8	\$4,041.6

2002 Experience: Divisions Combined

(\$ in Millions)



% of Beginning of Year Accrued Liabilities



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BENEFIT PROVISIONS EVALUATED

Effective Date	Established in 1931, most recently amended during 2000.
Definitions	
Affiliated Employers	State agencies, political subdivisions of the state, school districts, courts, cities and municipalities and any other public entities which affiliate with PERA.
Covered Members	Employees of Affiliated Employers who work in a position subject to membership and for whom contributions are made.
Division	One of three separate divisions which include: State and School, Municipal, and Judicial. Upon affiliation, employers are assigned to one of these divisions. The financial activities of each division are accounted for in separate trust funds.
Highest Average Salary (HAS)	For members not in the Judicial Division, one-twelfth of the average of the highest annual salaries upon which contributions were made during three periods of twelve consecutive months of Service Credit; or for a member with less than three years of Service Credit, one-twelfth of the average of the annual salaries upon which contributions were made. Annual salary increases recognized in the determination of HAS are limited to 15% a year. For Judicial Division members, one-twelfth of the highest annual salary upon which contributions were made during one period of twelve consecutive months of Service Credit.
Service Credit	The total of all earned, purchased, (disability) projected, and military service credit.
Contributions	
Member Contributions	Members, except for State Troopers, contribute 8.0% of salary. State Troopers contribute 10.0% of salary.
Employer Contributions	State and School Division (except State Troopers): 10.04% of salary, through 6/30/2003, 10.15% after 7/1/2003 State Troopers: 12.74% of salary through 6/30/2003, 12.85% after 7/1/2003 Municipal Division: 9.60% of salary. Judicial Division: 11.82% of salary through 6/30/2003, 12.66% after 7/1/2003 These contribution rates include the contributions allocated to the Health Care Trust Fund as follows: State and School Division (including State Troopers) 1.10% Municipal Division 1.69% Judicial Division 3.11%

Matching Employer
Contributions

A percentage of the member contribution account less:

1. Any amount paid for the purchase of service credit,
2. Any payments in lieu of member contributions, and
3. Any interest accrued on 1 and 2.

For members who meet the requirements for a service or reduced service retirement at the time the refund is paid, or for payments made to survivors or beneficiaries of members who die before retirement, the percentage is 100%.

For members who receive a refund prior to meeting the requirements for a service or reduced service retirement, the percentage is 50%.

**Eligibility for Benefits
or Other Payments**

Service Retirement

Retire with one of the following age and Service Credit requirements:

-- Members except State Troopers

<u>Age</u>	<u>Service Credit</u>
50	30
55	Age and Service = 80 years or more
65	5

-- State Troopers

<u>Age</u>	<u>Service Credit</u>
Any Age	30
50	25
55	20
65	5

Reduced Service
Retirement

Retire with one of the following age and Service Credit requirements:

-- Members except State Troopers

<u>Age</u>	<u>Service Credit</u>
50	25
55	20
60	5

-- State Troopers

<u>Age</u>	<u>Service Credit</u>
50	20
60	5

Vested Benefit	Terminate with five or more years of Service Credit and leave member contributions in the plan.
Disability Retirement	Become permanently disabled prior to being eligible for service retirement with five or more years of Service Credit (at least 6 months being earned during the last period of membership). The five-year service requirement is waived for State Troopers disabled because of job-related injuries and for members of the Judicial Division who are found to be permanently disabled by the Colorado Supreme Court.
Survivor Benefits	Die prior to retirement with at least one year of Service Credit. (The one-year Service Credit requirement is waived if death is job-related.)

Monthly Benefit Amounts

Service Retirement

	The greater of a or b
– State and School and Municipal Divisions and Members of the Judicial Division with no Service Credit prior to July 1, 1973	a) 2.5% of HAS times years of Service Credit up to 40 b) The money purchase benefit which is actuarially determined based on the value of the member contribution account and matching employer contributions on the effective date of retirement.
	The greater of c or d
– Members of the Judicial Division with Service Credit prior to July 1, 1973	c) The greater of a or b above d) 1. 4% of HAS times years of Service Credit up to 10, <u>plus</u> 2. 1 2/3% of HAS times years of Service Credit in excess of 10 up to 16, <u>plus</u> 3. 1.5% of HAS times years of Service Credit in excess of 16 up to 20, <u>plus</u> 4. 2.5% of HAS times years of Service Credit in excess of 20, the total not to exceed 100% of HAS.

Reduced Service Retirement	<p>For members except State Troopers:</p> <p>The service retirement benefit calculated above reduced 4% for each year after age 60, 3% for each year from age 55 to age 60, 6% for each year prior to 55, and proportionately for fractions of a year, from the effective date of reduced service retirement to the date the member would have been eligible for a service retirement benefit.</p> <p>For State Troopers:</p> <p>The service retirement benefit calculated above reduced 4% for each year after age 60, 3% for each year from age 50 to age 60, and proportionately for fractions of a year, from the effective date of reduced service retirement to the date the member would have been eligible for a service retirement benefit.</p>
Vested Benefit	<p>The greater of the benefit calculated based on Service Credit and HAS at the date of termination or the money purchase benefit based on the value of the member contribution account and the matching employer contribution account on the date payments begin. The vested benefit is payable upon reaching the age required for a reduced service retirement benefit. If the member elects to begin receiving payments prior to reaching the age required for a service retirement benefit, the benefit calculated based on Service Credit and HAS will be reduced in accordance with the reduced service retirement provisions.</p>
Disability Retirement	<p>If years of Service Credit at disability are greater than 20, the disability retirement benefit is calculated based on actual Service Credit at disability; otherwise, the disability retirement benefit is calculated based on actual Service Credit at disability plus Service Credit projected to age 65, but not to exceed a total of 20 years of Service Credit.</p> <p>Benefits for disability retirees with an effective disability retirement date on or after July 1, 1988 and before January 1, 1999, who work after retirement will be reduced by 1/3 of the amount, if any, by which the initial annual PERA benefit plus earned income exceeds the annualized HAS.</p>

Survivor Benefits

- Not Eligible for Reduced Service Retirement

Benefits are payable in the following order:

- (a) Qualified Children Under Age 23: 40% of HAS for one child, an equal share of 50% of HAS if there are two or more children.
- (b) Spouse: If no qualified children in (a) exist: i) less than 10 years of Service Credit, 25% of HAS, benefits begin at age 60; ii) 10 or more years of Service Credit, the greater of 25% of HAS or the benefit which would have been payable as a 100% joint and survivor option if the deceased member had been eligible for service retirement and retired on the date of death, benefits begin immediately.
- (c) Qualified Children Age 23 or Over: If no persons in (a) or (b) exist, 40% of HAS for one child, an equal share of 50% of HAS if there are two or more children.
- (d) Dependent Parents: If no persons in (a) to (c) exist, 25% of HAS for one dependent parent or 40% of HAS for two dependent parents (minimum of \$100 per month for each dependent parent). Benefits begin immediately and continue until the death of the parent(s).
- (e) Named Beneficiary: If no persons in (a) to (d) exist, single payment equal to the member contribution account plus the matching employer contribution, plus interest.
- (f) Estate of Deceased Member: If no persons in (a) to (e) exist, single payment equal to the member contribution account plus the matching employer contribution, plus interest.

- Eligible for Reduced or Service Retirement

The benefit that would have been payable had the member retired on the date of death and elected the 100% joint and survivor option. If there is no designated co-beneficiary or surviving spouse, then qualified children, dependent parents, named beneficiary or estate are eligible for the same benefits payable on behalf of a deceased member who was not eligible for reduced service retirement.

Refund of Member Contributions

In the event a member leaves service for a reason other than death or retirement, member contribution accounts including interest plus matching employer contributions with interest are refunded upon request.

Benefit Options

Benefits are payable for the life of the retired member. Optional reduced benefits may be elected at the time of retirement to provide for continuation of 50% or 100% of a reduced benefit amount to a designated co-beneficiary. If the member retires any time after the date on which service retirement eligibility is first met, the reduction for 50% or 100% continuation option will be actuarially determined as of the date the member first became eligible for service retirement.

**Post-Retirement
Benefit Increases**

Each year on March 1, benefits which have been paid for at least three months preceding March 1 are increased. The increase is 3.5% compounded annually for each year of retirement.

Changes in Plan Provisions Since Prior Year

No material changes.

Effective Date	On July 1, 1985, employer contributions to the Program commenced. Premium subsidy payments began July 1, 1986.						
Type of Program	Partially pre-funded postretirement health care plan covering PERA benefit recipients and other eligible persons.						
Eligibility for Health Care Program Coverage	<p>Anyone receiving a monthly PERA benefit, spouses, and unmarried, dependent children under age 19 (under age 24 if enrolled in school full-time).</p> <p>Guardians of children receiving PERA survivor benefits if children are enrolled in Program.</p> <p>Retirees temporarily not receiving PERA benefits.</p> <p>Surviving spouses of deceased retirees who are not receiving PERA benefits but were enrolled in the Program when death occurred.</p> <p>Divorced spouses of retirees who are not receiving PERA benefits, but were enrolled in the Program when the divorce occurred.</p>						
Employer Contributions to Health Care Trust Fund (HCTF) (Includes Allocation of Overfunding)	<table border="0"> <tr> <td>State and School Division (including State Troopers)</td> <td style="text-align: right;">1.10%</td> </tr> <tr> <td>Municipal Division</td> <td style="text-align: right;">1.69%</td> </tr> <tr> <td>Judicial Division</td> <td style="text-align: right;">3.11%</td> </tr> </table>	State and School Division (including State Troopers)	1.10%	Municipal Division	1.69%	Judicial Division	3.11%
State and School Division (including State Troopers)	1.10%						
Municipal Division	1.69%						
Judicial Division	3.11%						
Enrollment	Enrollment in the Program is voluntary. Open enrollment is held annually for coverage effective January 1.						
Program Premium Subsidy	The Program pays a portion or all of the monthly premium for health care coverage up to \$5.75 times the benefit recipient's years of service credit, with a maximum subsidy of \$115 per month if the benefit recipient is over age 65, or \$11.50 times the service credit, with a maximum of \$230 per month, if the benefit recipient is under age 65. The subsidy, if any, is paid from the HCTF. Any additional cost of the health insurance coverage is paid by the benefit recipient. Eligible persons not receiving a monthly benefit from PERA pay the entire cost of the health insurance coverage.						

Health Care Plans Offered Eligible persons are offered a choice among two Preferred Provider Organizations, one Point of Service plan, three Health Maintenance Organizations, and two Medicare Supplement plans. An integrated retail and mail-order prescription drug program is also offered. Premiums are established annually for each plan and different rates apply for those under and over age 65.

Note: Valuation results presented herein are based solely on the premium subsidy described above and do not reflect premiums actually charged for each health care plan offered. All actuarial calculations and analyses made in this report assume no future subsidy increases.

Changes in Plan Provisions Since Prior Year

No material changes.

ACTUARIAL METHODS AND ASSUMPTIONS

ACTUARIAL METHODS

The ultimate cost of a retirement plan (such as PERA) is equal to the benefits paid plus the expenses resulting from the administration and financing of the plan. These plan costs are paid for through contributions to the plan as well as through investment earnings on the plan's assets.

Using the plan's schedule of benefits, the member data and a carefully selected set of actuarial assumptions, the plan's actuary estimates the cost of the benefits which will be paid from the plan. Then using a particular actuarial funding method, the actuary will allocate these costs and determine a systematic manner to fund for future plan benefits.

In the case of PERA (as well as most other public sector plans), the objective is to fund in a manner which keeps contribution rates approximately level from generation to generation. The funding method best designed to keep annual costs level (as a percentage of pay) is the Entry Age Actuarial Cost Method. This method is described briefly below.

Entry Age Actuarial Cost Method

Under the Entry Age Actuarial Cost Method, projected pension, termination, disability and death benefits are determined for all active members. Cost factors, which are developed to produce level annual costs in each year from the age at hire (entry age) to the assumed retirement age are applied to the projected benefits to determine the "normal cost." The normal cost is the portion of the total cost of the plan allocated to the current year. The "actuarial accrued liability" for active members is then calculated as the portion of the total cost of the plan allocated to prior years, i.e., the value of the prior years' normal cost amounts.

The actuarial accrued liability for members currently receiving benefits, for active members beyond the assumed retirement age, and for members entitled to deferred benefits, is equal to the present value of the benefits expected to be paid. No normal costs are now payable for these participants.

The excess of the total actuarial accrued liability over the value of the plan assets is called the "unfunded actuarial accrued liability." Funding requirements under the Entry Age Actuarial Cost Method are determined as the sum of a) the normal cost and b) an amortization of the unfunded liability. (In PERA's case, the amortization period cannot exceed 40 years.)

The actuarial assumptions discussed below are used in determining the projected benefits and cost factors. The effect of differences between these assumptions and the actual experience of the plan is calculated each year when the annual actuarial valuation is performed. These differences produce either actuarial gains or losses which result in adjusting the unfunded liability discussed above.

Asset Valuation Method

The method for valuing assets is intended to recognize a “smoothed” market value of assets. Under this method, the difference between actual market value actuarial gains from investment experience and the expected actuarial gains from investment experience is recognized over a four-year period.

ACTUARIAL ASSUMPTIONS

The following economic and non-economic actuarial assumptions were adopted in 2001 by the Board of Trustees based on advice from the actuary. The assumptions, which are reviewed in depth every five years, are used to project the Plan’s future experience.

Economic Assumptions

The investment return rate used in the valuations is 8.75 percent per year compounded annually (net of administrative expenses).

The overall member payroll is assumed to increase 5.5 percent annually (4.5% due to inflation and 1.0% due to membership growth). Pay increase assumptions for individual members are shown for sample ages in Exhibits A, B, and C. Judicial Division pay increases are determined by the State Legislature.

Non-Economic Assumptions

The mortality table is based on PERA experience. The table is used to estimate the value of benefits expected to be paid. Related values are shown in Exhibit E. For disability retirement, impaired longevity is recognized by basing benefit values on an adjusted age midway between attained age and normal retirement age.

The probabilities of withdrawal from service, disability and death-in-service are shown for sample ages in Exhibits A, B, C, and D. It was assumed that 35 percent of the vested members who terminate elect to withdraw their contributions and matching employer contributions while the remaining 65 percent elect to leave their contributions in the plan in order to be eligible for a benefit at their retirement date.

Other Assumptions for the Postretirement Health Care Program

Percent of Members electing to participate in Health Care Program:

Member	Assumption	
Current PERA benefit recipients under age 65	Current participants to age 65 plus 75% of all PERA benefit recipients at age 65.	
Current PERA benefit recipients over age 65	Current participants	
Active Members under age 65.	55% of eligible to age 65, and 75% over age 65	
Vested Deferred Members:	<u>Under Age 65</u>	<u>Over Age 65</u>
- 5-10 years service	30%	30%
- 10-20 years service	30%	30%
- Over 20 years service	30%	30%

Percent of Active Members electing Option 2 or Option 3: 44%

Exhibit A – State and School Division

Separations from Employment Before Retirement and Individual Pay Increase Assumptions

Sample Ages	Percent of Members Separating Within the Next Year						Pay Increase Assumptions for an Individual Member		
	Ultimate Withdrawal ¹		Death		Disability		Merit & Seniority	Base (Economy)	Increase (Next Year)
	Men	Women	Men	Women	Men	Women			
STATE MEMBERS CONTRIBUTING 8%									
20	21.00	18.00	0.025	0.015	0.01	0.01	4.95%	4.50%	9.45%
25	8.50	10.25	0.030	0.015	0.04	0.03	4.45	4.50	8.95
30	5.00	6.70	0.040	0.025	0.05	0.05	3.60	4.50	8.10
35	3.52	4.93	0.055	0.035	0.18	0.16	2.80	4.50	7.30
40	2.81	3.63	0.095	0.058	0.24	0.22	2.10	4.50	6.60
45	2.49	3.12	0.210	0.102	0.39	0.34	1.40	4.50	5.90
50	2.39	2.97	0.425	0.176	0.75	0.66	0.75	4.50	5.25
55	2.39	2.89	0.598	0.252	1.01	0.90	0.35	4.50	4.85
60	2.39	2.84	0.755	0.383	1.08	0.96	0.00	4.50	4.50
65	2.39	2.84	1.179	0.670	1.08	0.96	0.00	4.50	4.50
STATE MEMBERS CONTRIBUTING 10.0% (STATE TROOPERS)									
20	6.00	6.00	0.025	0.015	0.02	0.02	5.50%	4.50%	10.00%
25	6.00	6.00	0.030	0.015	0.08	0.08	4.20	4.50	8.70
30	5.10	5.10	0.040	0.025	0.12	0.12	3.20	4.50	7.70
35	2.70	2.70	0.055	0.035	0.40	0.40	2.50	4.50	7.00
40	1.60	1.60	0.095	0.058	0.54	0.54	1.90	4.50	6.40
45	1.10	1.10	0.210	0.102	0.86	0.86	1.50	4.50	6.00
50	1.00	1.00	0.425	0.176	1.66	1.66	1.30	4.50	5.80
55	1.00	1.00	0.598	0.252	2.24	2.24	1.10	4.50	5.60
60	1.00	1.00	0.755	0.383	2.40	2.40	0.90	4.50	5.40
65	1.00	1.00	1.179	0.670	2.40	2.40	0.50	4.50	5.00
SCHOOL MEMBERS									
20	21.00	18.00	0.025	0.015	0.01	0.01	4.95%	4.50%	9.45%
25	8.50	10.25	0.030	0.015	0.01	0.02	4.45	4.50	8.95
30	5.00	6.70	0.040	0.025	0.01	0.03	3.60	4.50	8.10
35	3.52	4.93	0.055	0.035	0.04	0.05	2.80	4.50	7.30
40	2.81	3.63	0.095	0.058	0.11	0.08	2.10	4.50	6.60
45	2.49	3.12	0.210	0.102	0.18	0.10	1.40	4.50	5.90
50	2.39	2.97	0.425	0.176	0.40	0.30	0.75	4.50	5.25
55	2.39	2.89	0.598	0.252	0.65	0.50	0.35	4.50	4.85
60	2.39	2.84	0.755	0.383	0.80	0.50	0.00	4.50	4.50
65	2.39	2.84	1.179	0.670	0.80	0.50	0.00	4.50	4.50

¹For State (excluding Troopers) and School members, the assumed rate is the greater of the select rates as shown in Exhibit D or the ultimate rate shown above at the appropriate age. There are no select withdrawal assumptions for the State Troopers.

Exhibit B – Municipal Division

Sample Ages	Percent of Members Separating Within the Next Year						Pay Increase Assumptions for an Individual Member		
	Ultimate Withdrawal ¹		Death		Disability		Merit & Seniority	Base (Economy)	Increase (Next Year)
	Men	Women	Men	Women	Men	Women			
20	12.00	15.00	0.025	0.015	0.01	0.01	8.40%	4.50%	12.90%
25	7.00	10.30	0.030	0.015	0.04	0.04	6.00	4.50	10.50
30	5.06	7.63	0.040	0.025	0.07	0.05	4.40	4.50	8.90
35	3.77	6.29	0.055	0.035	0.22	0.18	3.20	4.50	7.70
40	2.97	4.80	0.095	0.058	0.30	0.24	2.40	4.50	6.90
45	2.62	4.12	0.210	0.102	0.47	0.39	1.90	4.50	6.40
50	2.56	3.92	0.425	0.176	0.91	0.75	1.60	4.50	6.10
55	2.56	3.72	0.598	0.252	1.23	1.01	1.50	4.50	6.00
60	2.56	3.60	0.755	0.383	1.32	1.08	1.30	4.50	5.80
65	2.56	3.60	1.179	0.670	1.32	1.08	1.00	4.50	5.50

Exhibit C – Judicial Division

Sample Ages	Percent of Members Separating Within the Next Year						Pay Increase Assumptions for an Individual Member		
	Withdrawal		Death		Disability		Seniority ²	Base (Economy)	Increase (Next Year)
	Men	Women	Men	Women	Men	Women			
30	2.00	2.00	0.040	0.025	0.06	0.06	1.51%	4.50%	6.01%
35	2.00	2.00	0.055	0.035	0.07	0.07	1.20	4.50	5.70
40	2.00	2.00	0.095	0.058	0.10	0.10	0.70	4.50	5.20
45	2.00	2.00	0.210	0.102	0.17	0.17	0.50	4.50	5.00
50	2.00	2.00	0.425	0.176	0.31	0.31	0.50	4.50	5.00
55	2.00	2.00	0.598	0.252	0.56	0.56	0.50	4.50	5.00
60	2.00	2.00	0.755	0.383	1.19	1.19	0.50	4.50	5.00
65	2.00	2.00	1.179	0.670	1.65	1.65	0.50	4.50	5.00

Exhibit D

Percent of Members With Less Than Five Years of Service Withdrawing from Employment Next Year¹

Completed Years of Service	State and School Division				Municipal Division	
	State Members		School Members		Men	Women
	Men	Women	Men	Women		
0	40.0	40.0	40.0	40.0	40.0	40.0
1	15.0	16.0	15.0	16.0	14.0	16.0
2	12.0	12.5	12.0	12.5	11.0	14.0
3	9.0	9.5	9.0	9.5	9.0	13.0
4	7.5	7.5	7.5	7.5	7.0	11.0

¹For Municipal employees, the assumed rate is the greater of the select rates as shown in Exhibit D or the ultimate rate shown above at the appropriate age. There are no select withdrawal assumptions for the Judicial Division.

²Pay raises are subject to legislative approval. Percentages shown are based on prior experience.

Exhibit E – State and School, Municipal, and Judicial Divisions

Single Life Retirement Values

<u>Sample Attained Ages</u>	<u>Present Value of \$1.00 Monthly for Life</u>		<u>Present Value of \$1.00 Monthly Increasing 3.5% Annually</u>		<u>Future Life Expectancy (Years)</u>	
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>
40	\$134.54	\$137.96	\$199.92	\$209.65	40.79	46.04
45	130.86	135.61	190.30	202.15	36.05	41.20
50	126.43	132.46	179.46	193.10	31.53	36.45
55	121.31	128.32	167.59	182.33	27.27	31.81
60	114.38	122.54	153.31	169.15	23.09	27.23
65	105.03	115.05	136.29	153.81	19.01	22.84
70	94.20	105.62	118.25	136.38	15.32	18.68
75	82.40	94.00	100.09	117.03	12.09	14.80
80	70.19	80.84	82.60	96.94	9.36	11.35
85	58.35	65.86	66.72	76.14	7.13	8.29

Exhibit F

Percent of Eligible Members Retiring Next Year

<u>Retirement Ages</u>	<u>State and School Division</u>						<u>Municipal Division</u>	<u>Judicial Division</u>	
	<u>State Members</u>		<u>State Troopers</u>	<u>School Members</u>		<u>Men</u>			<u>Women</u>
	<u>Men</u>	<u>Women</u>		<u>Men</u>	<u>Women</u>				
50	12	14	20	14	14	10	11	10	
51	12	14	20	14	14	10	11	10	
52	12	14	20	14	14	10	11	10	
53	12	14	20	14	14	10	11	10	
54	18	20	20	24	23	15	16	10	
55	18	20	20	24	23	15	16	10	
56	18	20	20	24	23	15	16	10	
57	18	20	20	24	23	15	16	10	
58	18	20	20	24	23	15	16	10	
59	18	20	20	24	23	15	16	10	
60	14	14	20	16	16	15	12	10	
61	14	14	36	16	16	15	12	10	
62	14	14	52	16	16	15	12	10	
63	14	14	68	16	16	15	12	10	
64	14	14	84	16	16	15	12	10	
65	23	22	100	21	21	22	19	25	
66	23	22	100	21	21	22	19	15	
67	23	22	100	21	21	22	19	15	
68	23	22	100	21	21	22	19	15	
69	23	22	100	21	21	22	19	15	
70	100	100	100	100	100	100	100	40	
71	100	100	100	100	100	100	100	40	
72	100	100	100	100	100	100	100	100	
73	100	100	100	100	100	100	100	100	
74	100	100	100	100	100	100	100	100	
75	100	100	100	100	100	100	100	100	

SUMMARY OF STATE AND SCHOOL DIVISION RESULTS

Summary of Data Used in Valuation

<u>Group</u>	<u>Number</u>	<u>Annual Payroll/Benefits</u>	
		<u>Total</u> <u>(\$ in Thousands)</u>	<u>Average</u>
Active Members			
Other Than State Troopers	159,216	\$5,232,036	\$32,861
State Troopers	<u>764</u>	<u>46,550</u>	60,929
Total	159,980	5,278,586	32,995
Retirants and Beneficiaries	57,384	\$ 1,360,046	\$23,701
Inactive Deferred	10,148		
Nonvested Inactive Due Refunds	<u>80,646</u>		
Total	308,158		

Development of Actuarial Value of Assets

	<u>(\$ Thousands)</u>
1. Actuarial Value December 31, 2001	\$28,947,935
2. Market Value December 31, 2002	22,023,781
3. Market Value December 31, 2001	25,500,904
4. Cash Flow During 2002	(377,200)
5. Expected Return During 2002: (1) x .0875 + (4) x .04375	2,516,442
6. Expected Actuarial Value of Assets: (1)+(4)+(5)	31,087,177
7. 2001 Phase-In Amount: (2)-(3)-(4)-(5)	(5,616,365)
8. Prior Years Phase-In	
- 2001	(4,694,113)
- 2000	(2,201,844)
- 1999	<u>2,247,519</u>
- Total	(4,648,438)
9. Recognition of Transition Difference Between Book and Market Value that existed on December 31, 1992 (19 years remaining)	30,630
10. Actuarial Value of Assets, December 31, 2002: (6) + .25 x [(7)+(8)]+(9)	\$28,551,607

Allocation of Actuarial Present Values

(\$ in Thousands)

Actuarial Present Value, December 31, of (1)	Actuarial Present Value of Future Benefits (2)	Portion Covered by Future Normal Cost Contributions (3)	Actuarial Accrued Liabilities (2)-(3) (4)
Active Members			
Service Retirement Benefits	\$18,219,381	\$4,987,281	\$13,232,100
Disability Benefits	641,921	393,777	248,144
Survivor Benefits	578,773	229,834	348,939
Separation Benefits	1,876,111	1,412,895	463,216
Active Member Totals	\$21,316,186	\$7,023,787	\$14,292,399
Retirants and Beneficiaries on Rolls	\$17,342,503	\$ 0	\$17,342,503
Inactive Deferred Benefits			
Member Portion	371,371	0	371,371
Employer Portion	317,917	0	317,917
Nonvested Inactives—Refunds Due	139,728	0	139,728
Total	\$39,487,705	\$7,023,787	\$32,463,918
Assets Used in Valuation			\$28,551,607
Unfunded/(Overfunded) Actuarial Accrued Liabilities			\$3,912,311

Employer Contribution Rate

Expressed as Percent of Active Member Payroll

<u>Contribution For</u>	<u>Contributions Expressed as Percents of Payroll</u>
Normal Cost	
Service Retirement Benefits	11.34%
Disability Benefits	0.89
Survivor Benefits	0.53
Separation Benefits	<u>3.06</u>
Total	15.82%
Member Current Contributions ¹	<u>8.02</u>
Employer Normal Cost	7.80%
Employer Contribution Rate ¹	8.16%
Percent Available to Amortize Unfunded Actuarial Accrued Liabilities (UAAL)	0.36%
Number of Years to Amortize UAAL	Infinite

¹Weighted average of more than one statutory rate.

Actuarial Present Value of Accumulated Plan Benefits

	<u>\$ in Thousands</u>
Vested Benefits	
For retired lives	\$17,342,503
For others	10,038,124
Non-Vested Benefits	<u>1,353,513</u>
Actuarial Present Value of Accumulated Plan Benefits	\$28,734,140

The actuarial present value of accumulated plan benefits as of December 31, 2001, was \$25,904 million. During the year, the plan experienced a net increase of \$2,830 million in the actuarial present value of accumulated plan benefits.

The actuarial present values presented above were determined using the following assumptions:

- a) Future salary increases were not considered.
- b) Future service was considered only to the extent that it would permit active plan participants to become eligible for benefits attributable to service rendered prior to the date of determination.
- c) Regular valuation assumptions were used as to mortality, withdrawal, retirement ages, disability and investment return.

Active Member Counts

Vested	
Other Than State Troopers	78,284
State Troopers	535
Non-Vested	
Other Than State Troopers	80,932
State Troopers	<u>229</u>
Total	159,980

GASB-25
Schedule of Funding Progress
(in thousands)

Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio	Covered Payroll	UAAL/ Covered Payroll
(1)	(2)	(3)	(4)	(5)	(6)	(7)
12-31-02	\$28,551,607	\$32,463,918	\$3,912,311	87.9%	\$5,278,586	74.1%
12-31-01	\$28,947,935	\$29,469,608	\$521,673	98.2%	\$4,954,605	10.5%
12-31-00	\$27,749,435	\$26,492,574	(\$1,256,861)	104.7%	\$4,561,133	(27.6%)
12-31-99	\$24,976,228	\$24,311,246	(\$664,982)	102.7%	\$4,309,573	(15.4%)
12-31-98	\$21,644,949	\$22,498,963	\$854,014	96.2%	\$4,098,423	20.8%
12-31-97	\$18,572,185	\$20,264,739	\$1,692,554	91.6%	\$3,877,988	43.6%

Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution * (ARC)	% ARC Contributed
(1)	(2)	(3)
2002	6.37%	100%
2001	6.84%	100%
2000	9.82%	100%
1999	10.46%	100%
1998	10.61%	100%
1997	10.71%	100%

*As a percent of covered payroll.

Notes to Schedules

For these schedules, the State and School Divisions have been combined in prior years.

Actuarial Method: Individual Entry Age Normal.

Actuarial Assumptions: Please see pages 25 through 29 for a description of the current assumptions.

Trend Factors: There was no significant change in the population size during 2002. There were no material plan changes since the last valuation.

Changes in Unfunded Actuarial Accrued Liabilities

During Calendar 2002

\$ in Millions

1. Beginning of Year:	
a) Unfunded actuarial accrued liabilities (UAAL) before assumption changes	\$521.7
b) UAAL after assumption changes	521.7
c) Annual contribution in excess of the Normal Cost	260.4
2. Unfunded actuarial accrued liabilities, end of year:	
a) Expected UAAL, from last year's valuation: (1b) x 1.0875 - (1c) x 1.04375	295.5
b) Actual UAAL, from this year's valuation	3,912.3
3. Gains (Losses) on year's activities:	
a) From differences between assumed and actual experience in basic risk areas: (2a)-(2b)	(\$3,616.8)
b) From non-recurring activities (changes in plan assumptions): (1a)-(1b)	<u>(0.0)</u>
c) Total: (3a)+(3b)	(\$3,616.8)

Gains & Losses in Actuarial Accrued Liabilities During Calendar Year 2002

<u>Type of Activity</u>	<u>Gain (Loss) For Year</u>	
	<u>\$ in Millions</u>	<u>% of Beginning of Year Accrued Liabilities</u>
-----Decrement Risk Areas-----		
<u>Service Retirements</u> . If members retire at older ages than assumed, there is a gain. If younger ages, a loss. Service purchases at less than full actuarial cost also produce a loss.	(\$522.1)	(1.77%)
<u>Disability Retirements</u> . If disability claims are less than assumed, there is a gain. If more claims, a loss.	(1.8)	(0.01)
<u>Deaths</u> . If survivor claims are less than assumed, there is a gain. If more claims, a loss. If retirees live longer than assumed, there is a loss; if they die sooner than assumed, there is a gain.	3.0	0.01
<u>Withdrawal</u> . If more actuarial liabilities are released by terminations than assumed, there is a gain. If smaller releases, a loss.	(23.1)	(0.08)
<u>New Entrants</u> . New members enter the plan with some service, causing a loss.	(58.7)	(0.20)
<u>Other</u> . Change in group size, service credit reinstatements, data adjustments and miscellaneous unidentified changes in the UAAL.	(295.4)	(1.00)
-----Economic Risk Areas-----		
<u>Salary Increases</u> . If there are smaller salary increases than assumed, there is a gain. If greater increases, a loss.	(183.1)	(0.62)
<u>Investment Income</u> . If there is greater investment income than assumed, there is a gain. If less income, a loss.	<u>(2,535.6)</u>	<u>(8.60)</u>
Experience Gain (or Loss) During Year	(\$3,616.8)	(12.27%)

* Beginning of year accrued liabilities totaled \$29,470 million.
 End of year accrued liabilities totaled \$32,464 million.

SUMMARY OF MUNICIPAL DIVISION RESULTS

Summary of Data Used in Valuation

<u>Group</u>	<u>Number</u>	<u>Annual Payroll/Benefits</u>	
		<u>Total</u> <u>(\$ in Thousands)</u>	<u>Average</u>
Active Members	12,509	\$474,760	\$37,953
Retirants and Beneficiaries	2,941	\$60,306	\$20,505
Inactive Deferred	757		
Nonvested Inactives Due Refunds	<u>8,354</u>		
Total	24,561		

Development of Actuarial Value of Assets

	<u>(\$ Thousands)</u>
1. Actuarial Value December 31, 2001	\$1,822,413
2. Market Value December 31, 2002	1,422,948
3. Market Value December 31, 2001	1,601,852
4. Cash Flow During 2002	17,749
5. Expected Return During 2002: (1) x .0875 + (4) x .04375	160,238
6. Expected Actuarial Value of Assets: (1)+(4)+(5)	2,000,401
7. 2001 Phase-In Amount: (2)-(3)-(4)-(5)	(356,890)
8. Prior Years Phase-In	
- 2001	(291,830)
- 2000	(135,783)
- 1999	<u>134,934</u>
- Total	(292,679)
9. Recognition of Transition Difference Between Book and Market Value that existed on December 31, 1992 (19 years remaining)	1,624
10. Actuarial Value of Assets, December 31, 2002 (6) + .25 x [(7)+(8)]+(9)	\$1,839,632

Allocation of Actuarial Present Values

(\$ in Thousands)

Actuarial Present Value, December 31, of (1)	Actuarial Present Value of Future Benefits (2)	Portion Covered by Future Normal Cost Contributions (3)	Actuarial Accrued Liabilities (2)-(3) (4)
Active Members			
Service Retirement Benefits	\$1,440,852	\$461,947	\$978,905
Disability Benefits	99,429	62,359	37,070
Survivor Benefits	64,275	26,959	37,316
Separation Benefits	<u>202,142</u>	<u>148,940</u>	<u>53,202</u>
Active Member Totals	\$1,806,698	\$700,205	\$1,106,493
Retirants and Beneficiaries on Rolls	\$ 785,772	\$ 0	\$785,772
Inactive Deferred Benefits			
Member Portion	32,426	0	32,426
Employer Portion	25,707	0	25,707
Nonvested Inactives – Refunds Due	<u>15,745</u>	<u>0</u>	<u>15,745</u>
Total	\$2,666,348	\$700,205	\$1,966,143
Assets Used in Valuation			\$1,839,632
Unfunded/(Overfunded) Actuarial Accrued Liabilities			\$126,511

Employer Contribution Rate

Expressed as Percent of Active Member Payroll

<u>Contribution For</u>	<u>Contributions Expressed as Percents of Payroll</u>
Normal Cost	
Service Retirement Benefits	10.90%
Disability Benefits	1.45
Survivor Benefits	0.64
Separation Benefits	<u>3.35</u>
Total	16.34%
Member Current Contributions	<u>8.00</u>
Employer Normal Cost	8.34%
Employer Contribution Rate	8.39%
Percent Available to Amortize Unfunded Actuarial Accrued Liabilities (UAAL)	0.05%
Number of Years to Amortize UAAL	Infinite

Actuarial Present Value of Accumulated Plan Benefits

	<u>\$ in Thousands</u>
Vested Benefits	
For retired lives	\$785,772
For others	716,018
Non-Vested Benefits	<u>127,648</u>
Actuarial Present Value of Accumulated Plan Benefits	\$1,629,438

The actuarial present value of accumulated plan benefits as of December 31, 2001, was \$1,425 million. During the year, the plan experienced a net increase of \$204 million in the actuarial present value of accumulated plan benefits.

The actuarial present values presented above were determined using the following assumptions:

- a) Future salary increases were not considered.
- b) Future service was considered only to the extent that it would permit active plan participants to become eligible for benefits attributable to service rendered prior to the date of determination.
- c) Regular valuation assumptions were used as to mortality, withdrawal, retirement ages, disability and investment return.

Active Member Counts

Vested	5,694
Non-Vested	<u>6,815</u>
Total	12,509

Schedule of Funding Progress (in thousands)

<u>Valuation Date</u>	<u>Actuarial Value of Assets</u>	<u>Actuarial Accrued Liability</u>	<u>Unfunded Actuarial Accrued Liability (UAAL)</u>	<u>Funded Ratio</u>	<u>Covered Payroll</u>	<u>UAAL/ Covered Payroll</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)
12-31-02	\$1,839,632	\$1,966,143	\$126,511	93.6%	\$474,760	26.6%
12-31-01	\$1,822,413	\$1,746,761	(\$75,652)	104.3%	\$436,582	(17.3%)
12-31-00	\$1,717,017	\$1,541,014	(\$176,003)	111.4%	\$399,737	(44.0%)
12-31-99	\$1,524,667	\$1,413,208	(\$111,459)	107.9%	\$380,064	(29.3%)
12-31-98	\$1,300,574	\$1,301,869	\$1,295	99.9%	\$359,025	0.4%
12-31-97	\$1,098,291	\$1,121,444	\$23,153	97.9%	\$314,167	7.4%

Schedule of Employer Contributions

<u>Fiscal Year</u>	<u>Annual Required Contribution * (ARC)</u>	<u>% ARC Contributed</u>
(1)	(2)	(3)
2002	5.02%	100%
2001	6.26%	100%
2000	8.90%	100%
1999	9.05%	100%
1998	9.20%	100%
1997	9.20%	100%

*As a percent of covered payroll.

Notes to Schedules

Actuarial Method: Individual Entry Age Normal.

Actuarial Assumptions: Please see Pages 25 through 29 for a description of the current assumptions.

Trend Factors: There was no significant change in the population size during 2002. There were no significant plan changes since the last valuation.

Changes in Unfunded Actuarial Accrued Liabilities

During Calendar 2002

	<u>\$ in Millions</u>
1. Beginning of Year:	
a) Unfunded actuarial accrued liabilities (UAAL) before assumption changes	(\$75.7)
b) UAAL after assumption changes	(75.7)
c) Annual contribution in excess of the Normal Cost	16.6
2. Unfunded actuarial accrued liabilities, end of year:	
a) Expected UAAL, from last year's valuation: (1b) x 1.0875 - (1c) x 1.04375	(99.6)
b) Actual UAAL, from this year's valuation	126.5
3. Gains (Losses) on year's activities:	
a) From differences between assumed and actual experience in basic risk areas: (2a)-(2b)	(\$226.1)
b) From non-recurring activities (changes in actuarial assumptions): (1a)-(1b)	<u>(0.0)</u>
c) Total: (3a)+(3b)	(\$226.1)

Gains & Losses in Actuarial Accrued Liabilities During Calendar Year 2002

<u>Type of Activity</u>	<u>Gain (Loss) For Year</u>	
	<u>\$ in Millions</u>	<u>% of Beginning of Year Accrued Liabilities</u>
-----Decrement Risk Areas----- -----		
<u>Service Retirements.</u> If members retire at older ages than assumed, there is a gain. If younger ages, a loss. Service purchases at less than full actuarial cost also produce a loss.	(\$35.0)	(2.00%)
<u>Disability Retirements.</u> If disability claims are less than assumed, there is a gain. If more claims, a loss.	(1.3)	(0.08)
<u>Deaths.</u> If survivor claims are less than assumed, there is a gain. If more claims, a loss. If retirees live longer than assumed, there is a loss; if they die sooner than assumed, there is a gain.	2.7	0.16
<u>Withdrawals.</u> If more actuarial liabilities are released by terminations than assumed, there is a gain. If smaller releases, a loss.	2.7	0.15
<u>New Entrants.</u> New members enter the plan with some service, causing a loss.	(9.8)	(0.56)
<u>Other.</u> Change in group size, service credit reinstatements, data adjustments and miscellaneous unidentified changes in the UAAL.	(27.4)	(1.57)
-----Economic Risk Areas----- -----		
<u>Salary Increases.</u> If there are smaller salary increases than assumed, there is a gain. If greater increases, a loss.	2.7	0.15
<u>Investment Income.</u> If there is greater investment income than assumed, there is a gain. If less income, a loss.	(160.8)	(9.20)
Experience Gain (or Loss) During Year	(\$226.1)	(12.95%)
* Beginning of year accrued liabilities totaled \$1,746.8 million. End of year accrued liabilities totaled \$1,966.1 million.		

SUMMARY OF JUDICIAL DIVISION RESULTS

Summary of Data Used in Valuation

<u>Group</u>	<u>Number</u>	<u>Annual Payroll/Benefits</u>	
		<u>Total</u> <u>(\$ in Thousands)</u>	<u>Average</u>
Active Members	272	\$26,357	\$96,901
Retirants and Beneficiaries	223	\$6,927	\$31,058
Inactive Deferred	16		
Nonvested Inactives Due Refunds	<u>2</u>		
Total	513		

Development of Actuarial Value of Assets

	<u>(\$ Thousands)</u>
1. Actuarial Value December 31, 2001	\$165,130
2. Market Value December 31, 2002	125,605
3. Market Value December 31, 2001	145,227
4. Cash Flow During 2002	(2,100)
5. Expected Return During 2002: (1) x .0875 + (4) x .04375	14,357
6. Expected Actuarial Value of Assets: (1)+(4)+(5)	177,387
7. 2002 Phase-In Amount: (2)-(3)-(4)-(5)	(31,879)
8. Prior Years Phase-In	
- 2001	(26,870)
- 2000	(12,637)
- 1999	<u>12,768</u>
- Total	(26,739)
9. Recognition of Transition Difference Between Book and Market Value that existed on December 31, 1992 (19 years remaining)	169
10. Actuarial Value of Assets, December 31, 2002: (6) + .25 x [(7)+(8)]+(9)	\$162,901

Allocation of Actuarial Present Values

(\$ in Thousands)

<u>Actuarial Present Value, December 31, of</u> (1)	<u>Actuarial Present Value of Future Benefits</u> (2)	<u>Portion Covered by Future Normal Cost Contributions</u> (3)	<u>Actuarial Accrued Liabilities (2)-(3)</u> (4)
Active Members			
Service Retirement Benefits	\$97,288	\$25,138	\$72,150
Disability Benefits	8,939	3,710	5,229
Survivor Benefits	5,935	2,383	3,552
Separation Benefits	<u>3,627</u>	<u>3,082</u>	<u>545</u>
Active Member Totals	\$115,789	\$34,313	\$81,476
Retirants and Beneficiaries on Rolls	\$ 80,686	\$ 0	\$80,686
Inactive Deferred Benefits			
Member Portion	1,840	0	1,840
Employer Portion	1,560	0	1,560
Nonvested Inactives-Refunds Due	<u>110</u>	<u>0</u>	<u>110</u>
Total	\$199,985	\$34,313	\$165,672
Assets Used in Valuation			\$162,901
Unfunded/(Overfunded) Actuarial Accrued Liabilities			\$2,771

Employer Contribution Rate

Expressed as Percent of Active Member Payroll

<u>Contribution For</u>	<u>Contributions Expressed as Percents of Payroll</u>
Normal Cost	
Service Retirement Benefits	13.22%
Disability Benefits	1.92
Survivor Benefits	1.29
Separation Benefits	<u>1.53</u>
Total	17.96%
Member Current Contributions	<u>8.00</u>
Employer Normal Cost	9.96%
Employer Contribution Rate	7.20%
Percent Available to Amortize Unfunded Actuarial Accrued Liabilities (UAAL)	-2.76%
Number of Years to Amortize UAAL	13 ¹

¹ The Funding Period is calculated assuming the employer contribution available for the MatchMaker program will decrease by 1.0% each subsequent year until it is at 0.0% effective January 1, 2010.

Actuarial Present Value of Accumulated Plan Benefits

	<u>\$ in Thousands</u>
Vested Benefits	
For retired lives	\$80,686
For others	65,749
Non-vested Benefits	<u>6,456</u>
Actuarial Present Value of Accumulated Plan Benefits	\$152,891

The actuarial present value of accumulated plan benefits as of December 31, 2001 was \$138.5 million. During the year, the plan experienced a net increase of \$14.4 million in the actuarial present value of accumulated plan benefits.

The actuarial present values presented above were determined using the following assumptions:

- a) Future salary increases were not considered.
- b) Future service was considered only to the extent that it would permit active plan participants to become eligible for benefits attributable to service rendered prior to the date of determination.
- c) Regular valuation assumptions were used as to mortality, withdrawal, retirement ages, disability and investment return.

Active Member Counts

Vested	211
Non-Vested	<u>61</u>
Total	272

Schedule of Funding Progress (in thousands)

<u>Valuation Date</u>	<u>Actuarial Value of Assets</u>	<u>Actuarial Accrued Liability</u>	<u>Unfunded Actuarial Accrued Liability (UAAL)</u>	<u>Funded Ratio</u>	<u>Covered Payroll</u>	<u>UAAL/ Covered Payroll</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)
12-31-02	\$162,901	\$165,672	\$2,771	98.3%	\$26,357	10.5%
12-31-01	\$165,130	\$150,943	(\$14,187)	109.4%	\$24,140	(58.8%)
12-31-00	\$159,426	\$132,653	(\$26,773)	120.2%	\$21,673	(123.5%)
12-31-99	\$142,499	\$122,237	(\$20,262)	116.6%	\$20,123	(100.7)%
12-31-98	\$124,059	\$115,228	(\$8,831)	107.7%	\$19,854	(44.5%)
12-31-97	\$106,012	\$107,888	\$1,876	98.3%	\$19,666	9.5%

Schedule of Employer Contributions

<u>Fiscal Year</u>	<u>Annual Required Contribution * (ARC)</u>	<u>% ARC Contributed</u>
(1)	(2)	(3)
2002	1.55%	100%
2001	1.79%	100%
2000	13.40%	100%
1999	14.05%	100%
1998	14.20%	100%
1997	14.20%	100%

*As a percent of covered payroll.

Notes to Schedules

Actuarial Method: Individual Entry Age Normal.

Actuarial Assumptions: Please see pages 25 through 29 for a description of the current assumptions.

Trend Factors: There was no significant change in the population size during 2002. There were no significant plan changes since the last valuation.

Changes in Unfunded Actuarial Accrued Liabilities

During Calendar 2002

	<u>\$ in Millions</u>
1. Beginning of Year:	
a) Unfunded actuarial accrued liabilities (UAAL) before assumption changes	(\$14.2)
b) UAAL after assumption changes	(14.2)
c) Annual contribution in excess of the Normal Cost	(0.0)
2. Unfunded actuarial accrued liabilities, end of year:	
a) Expected UAAL, from last year's valuation: (1b) x 1.0875 - (1c) x 1.04375	(15.4)
b) Actual UAAL, from this year's valuation	2.8
3. Gains (Losses) on year's activities:	
a) From differences between assumed and actual experience in basic risk areas: (2a)-(2b)	(\$18.2)
b) From non-recurring activities (changes in assumptions): (1a)-(1b)	<u>(0.0)</u>
c) Total: (3a)+(3b)	(\$18.2)

Gains & Losses in Actuarial Accrued Liabilities During Calendar Year 2002

<u>Type of Activity</u>	<u>Gain (Loss) For Year</u>	
	<u>\$ in Millions</u>	<u>% of Beginning of Year Accrued Liabilities</u>
-----Decrement Risk Areas-----		
<u>Service Retirements.</u> If members retire at older ages than assumed, there is a gain. If younger ages, a loss. Service purchases at less than full actuarial cost also produce a loss.	(\$.3)	(0.21%)
<u>Disability Retirements.</u> If disability claims are less than assumed, there is a gain. If more claims, a loss.	0.0	0.01
<u>Deaths.</u> If survivor claims are less than assumed, there is a gain. If more claims, a loss. If retirees live longer than assumed, there is a loss; if they die sooner than assumed, there is a gain.	0.2	0.11
<u>Withdrawals.</u> If more actuarial liabilities are released by terminations than assumed, there is a gain. If smaller releases, a loss.	(0.1)	(0.05)
<u>New Entrants.</u> New members enter the plan with some service, causing a loss.	(0.1)	(0.07)
<u>Other.</u> Change in group size, service credit reinstatements, data adjustments and miscellaneous unidentified changes in the UAAL.	(1.2)	(0.76)
-----Economic Risk Areas-----		
<u>Salary Increases.</u> If there are smaller salary increases than assumed, there is a gain. If greater increases, a loss.	(2.2)	(1.46)
<u>Investment Income.</u> If there is greater investment income than assumed, there is a gain. If less income, a loss.	<u>(14.5)</u>	<u>(9.60)</u>
Experience Gain (or Loss) During Year	(\$18.2)	(12.03%)

* Beginning of year accrued liabilities totaled \$150.9 million.
 End of year accrued liabilities totaled \$165.7 million.

Postretirement Health Care Program

Valuation Highlights

The December 31, 2002 actuarial valuation indicates that the contribution rate is sufficient to fully fund the costs of benefit commitments being made to members and benefit recipients. After satisfying normal cost requirements, the remainder of the employer rate is sufficient to fund the unfunded portion of the actuarial accrued liabilities.

Summary of Data Used in Valuation

<u>Group</u>	<u>Number</u>
Active Members	172,761
Inactive Members	10,226
Benefit Recipients	<u>34,989</u>
Total	217,976
Average Age – Active Members	43.54 years
Average Service – Active Members	7.64 years
Average Age – Benefit Recipients	69.80 years

Development of Actuarial Value of Assets

	<u>(\$ Thousands)</u>
1. Actuarial Value December 31, 2001	\$138,198
2. Market Value December 31, 2002	131,256
3. Market Value December 31, 2001	125,863
4. Cash Flow During 2002	23,134
5. Expected Return During 2002: (1) x .0875 + (4) x .04375	13,105
6. Expected Actuarial Value of Assets: (1)+(4)+(5)	174,437
7. 2002 Phase-In Amount: (2)-(3)-(4)-(5)	(30,846)
8. Prior Years Phase-In	
- 2001	(21,606)
- 2000	(8,988)
- 1999	<u>10,491</u>
- Total	(20,103)
9. Actuarial Value of Assets, December 31, 2002: (6) + .25 x [(7)+(8)]	\$161,700

Allocation of Actuarial Present Values

<u>Actuarial Present Value, December 31, of</u> (1)	<u>Actuarial Present Value of Future Benefits</u> (2)	<u>Portion Covered by Future Normal Cost Contributions</u> (3)	<u>Actuarial Accrued Liabilities (2)-(3)</u> (4)
Active Members	\$503,542	\$114,339	\$389,203
Benefit Recipients	409,308	0	409,308
Inactive Members	<u>14,700</u>	<u>0</u>	<u>14,700</u>
Total	\$ 927,550	\$114,339	\$813,211
Assets Used in Valuation			\$161,700
Unfunded Actuarial Accrued Liabilities			\$651,511
Ratio of Assets to Liabilities			19.9%

Changes in Unfunded Actuarial Accrued Liabilities

During Calendar Year 2002

	<u>\$ in Millions</u>
1. Beginning of Year:	
a) Unfunded actuarial accrued liabilities (UAAL) before assumption changes	\$644.8
b) UAAL after assumption changes	644.8
c) Annual contribution in excess of the Normal Cost	73.1
2. Unfunded actuarial accrued liabilities, end of year:	
a) Expected UAAL, from last year's valuation: (1b) x 1.0875 - (1c) x 1.04375	624.9
b) Actual UAAL, from this year's valuation	651.5
3. Gains (Losses) on year's activities:	
a) From differences between assumed and actual experience in basic risk areas: (2a)-(2b)	(26.6)
b) From non-recurring activities (changes in assumptions): (1a)-(1b)	<u>0.0</u>
c) Total: (3a)+(3b)	\$(26.6)

Employer Contribution Rate

Expressed as Percent of Active Member Payroll

<u>Contribution For</u>	<u>Contributions Expressed as Percents of Payroll</u>
Normal Cost	0.35%
Member Current Contributions	0.00
Employer Normal Cost	0.35%
Employer Contribution Rate	
Statutory Rate	1.10%
Additional from Overfunding	0.00%
Total	1.10%
Percent Available to Amortize Unfunded Actuarial Accrued Liabilities (UAAL)	0.75%
Number of Years to Amortize UAAL	20

Actuarial Present Value of Accumulated Plan Benefits

	<u>\$ in Thousands</u>
Vested Benefits	
For retired lives	\$409,308
For others	348,317
Non-vested Benefits	<u>10,690</u>
Actuarial Present Value of Accumulated Plan Benefits	\$768,315

The actuarial present value of accumulated plan benefits as of December 31, 2001, was \$755.2 million. During the year, the plan experienced a net increase of \$13.1 million in the actuarial present value of accumulated plan benefits.

The actuarial present values presented above were determined using the following assumptions:

- a) Future salary increases were not considered.
- b) Future service was considered only to the extent that it would permit active plan participants to become eligible for benefits attributable to service rendered prior to the date of determination.
- c) Regular valuation assumptions were used as to mortality, withdrawal, retirement ages, disability and investment return.

Active Member Counts

Vested	84,724
Non-Vested	<u>88,037</u>
Total	172,761

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Schedule of Funding Progress (in thousands)

Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio	Covered Payroll	UAAL/ Covered Payroll
(1)	(2)	(3)	(4)	(5)	(6)	(7)
12-31-02	\$161,700	\$813,211	\$651,511	19.9%	\$5,779,703	11.3%
12-31-01	\$138,198	\$782,961	\$644,763	17.7%	\$5,415,327	11.9%
12-31-00	\$116,034	\$809,709	\$693,675	14.3%	\$4,982,543	13.9%
12-31-99	\$100,825	\$782,698	\$681,873	12.9%	\$4,709,760	14.5%
12-31-98	\$82,929	\$591,222	\$508,293	14.0%	\$4,477,302	11.4%
12-31-97	\$76,957	\$595,597	\$518,640	12.9%	\$4,211,821	12.3%

Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution * (ARC)	% ARC Contributed
2002	1.16%	100%
2001	1.48%	100%
2000	1.10%	100%
1999	0.95%	100%
1998	0.80%	100%
1997	0.80%	100%

*As a percent of covered payroll.

Notes to Schedules

Actuarial Method: Individual Entry Age Normal.

Actuarial Assumptions: Please see pages 25 through 29 for a description of the assumptions.

Trend Factors: There was no significant change in the population size during 2002. There were no significant plan changes since the last valuation.

Subsidy Analysis

Year	Administration Expenses	Claims & HMO Premiums	Total Costs (2+3)	PERA Subsidy	
				Amount (5)	Percentage (5 ÷ 4)
(1)	(2)	(3)	(4)	(5)	(6)
2002	\$4,571,820	\$113,897,967	\$118,469,787	\$62,727,337	53%
2001	\$4,564,519	\$98,907,833	\$103,472,352	\$58,476,718	57%
2000	\$3,530,456	\$73,800,252	\$77,330,708	\$47,101,648	61%
1999	\$3,317,163	\$61,661,514	\$64,978,677	\$38,532,513	59%
1998	\$3,191,006	\$59,203,630	\$62,394,636	\$37,406,245	60%
1997	\$3,153,438	\$56,497,909	\$59,651,347	\$36,532,399	61%
1996	\$3,318,988	\$53,783,023	\$57,102,011	\$35,514,502	62%