

**PUBLIC EMPLOYEES'
RETIREMENT ASSOCIATION
OF COLORADO**

*Actuarial Report
As of December 31, 2001
May 2002*

May 24, 2002

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, 2001

This report summarizes the results of the December 31, 2001 actuarial valuation for the Public Employees' Retirement Association of Colorado (PERA) as well as the results of the December 31, 2001 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 2001. No material changes in the Health Care Program plan provisions for PERA were made in 2001. Please see page 14 for a summary of the PERA plan provisions. The actuarial assumptions have been modified since the previous valuation. The Board adopted the assumptions recommended by Watson Wyatt in their Experience Study dated June 2001. Please see page 23 for a summary of these assumptions.

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

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klb

Enclosure

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PUBLIC EMPLOYEES' RETIREMENT ASSOCIATION
OF COLORADO

Actuarial Report as of December 31, 2001

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

Gabriel, Roeder, Smith & Company

May, 2002

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The December 31, 2001 actuarial valuation indicates the following:

1. The employer rates when combined with the member rates are sufficient to fully fund the costs of benefit commitments being made to members for their service currently being rendered.
2. In each Division, the statutory rates will sustain the Division from generation to generation if future actual experience is consistent with future assumed experience.
3. The Municipal Division and the Judicial Division have a fully funded actuarial accrued liability. The overfunding is reflected in reduced employer contributions, increased allocation to the Health Care Trust Fund and allocations to the MatchMaker, the defined contribution plan matching program. The State and School Division is slightly underfunded at this valuation, but remains actuarially sound.

Key valuation results are summarized below.

	<u>Active Members</u>		Unfunded/ (Overfunded)
	Annual Payroll		Actuarial Accrued Liabilities
	<u>Number</u>	<u>(\$ Millions)</u>	<u>(\$ Millions)</u>
State and School	157,347	\$4,954.6	\$521.7
Municipal	12,220	436.6	(75.7)
Judicial	<u>266</u>	<u>24.1</u>	<u>(14.2)</u>
Totals	169,833	\$5,415.3	\$431.8

Overall Condition: Based upon this December 31, 2001 valuation, it is our opinion that the Public Employees' Retirement Association of Colorado continues in sound condition in accordance with actuarial principles of level-cost financing.

Allocation of Statutory Contribution Rates
(State and School Division)

	Percent of Covered Payroll	
	2003 <u>Rates</u>	2002 ¹ <u>Rates</u>
1. Statutory Employer Contribution Rate ²	10.42%	10.42%
2. Less: Total HCTF Allocation		
a) Statutory HCTF Contribution	(1.10)	(1.10)
b) Allocation of Overfunding	(0.00)	(0.54)
c) Total HCTF Allocation	(1.10)	(1.64)
3. Less: Contribution Available for MatchMaker		
a) Statutory Contribution	(1.91) ³	(2.00)
b) Allocation of Overfunding	(0.00)	(0.91)
c) Total Contribution Available for MatchMaker	(1.91)	(2.91)
4. Less: Employer Contribution Reduction		
a) Statutory Reduction	(0.25)	(0.25)
b) Allocation of Overfunding	(0.00)	(0.36)
c) Greater Reduction of (a) and (b)	(0.25)	(0.36)
5. Contribution Available for PERA Pre-Funded Benefits 1 – 2.c. – 3.c. – 4.c.	7.16%	5.51%
6. Normal Cost of Pre-Funded Benefits		
a) Service Retirement Benefits	11.30%	11.32%
b) Disability Retirement Benefits	0.89%	0.90%
c) Survivor Benefits	0.54%	0.53%
d) Separation Benefits	<u>3.06%</u>	<u>3.14%</u>
e) Total Normal Cost	15.79%	15.89%
7. Member Contributions ²	<u>8.02%</u>	<u>8.02%</u>
8. Employer Normal Cost	7.77%	7.87%
9. Percent Available to Amortize UAAL	-0.61%	-2.36%
10. Number of Years to Amortize UAAL	13 ⁴	8 ⁵

¹After reflecting assumption changes from experience study.

²Weighted average of more than one statutory rate.

³Total employer contribution available for MatchMaker may not change by more than 1.0% from the previous year.

⁴Funding 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.

⁵The 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 for 2001
(State and School Division)
(\$ in Thousands)

<u>December 31, Valuation Results:</u>	<u>2001</u>	<u>2000¹</u>
Actuarial Accrued Liability	\$29,469,608	\$27,027,469
Actuarial Value of Assets	<u>\$28,947,935</u>	<u>\$27,749,435</u>
Unfunded/(Overfunded) Actuarial Accrued Liability	\$521,673	(\$721,966)
Ten-Year Amortization of Overfunding	N/A	\$82,445
Valuation Payroll	\$4,954,605	\$4,561,133
Amortization of Overfunding as a Percent of Payroll	N/A	1.81%
<u>Allocation of Overfunding</u>		
Employer Contribution Reduction	0.00%	0.36%
Effective Date	7/1/2003	7/1/2002
Additional Contribution Allocated to the Health Care Trust Fund	0.00%	0.54%
Effective Date	1/1/2003	1/1/2002
Additional Amount Available for MatchMaker	0.00% ²	0.91%
Effective Date	1/1/2003	1/1/2002

¹After reflecting assumption changes from experience study. Previously, the actuarial accrued liability was \$26,492,574.

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

Allocation of Statutory Contribution Rates
(Municipal Division)

	<u>Percent of Covered Payroll</u>	
	2003 <u>Rates</u>	2002 ¹ <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>(0.59)</u>	<u>(1.21)</u>
c) Total HCTF Allocation	(1.69)	(2.31)
3. Less: Contribution Available for MatchMaker		
a) Statutory Contribution	(0.52)	(0.50)
b) Allocation of Overfunding	<u>(0.99)</u>	<u>(2.01)</u>
c) Total Contribution Available for MatchMaker	(1.51) ²	(2.51)
4. Less: Employer Contribution Reduction		
a) Statutory Reduction	(0.00)	(0.00)
b) Allocation of Overfunding	(0.40)	(0.81)
c) Greater Reduction of (a) and (b)	<u>(0.40)</u>	<u>(0.81)</u>
5. Contribution Available for PERA Pre-Funded Benefits 1 – 2.c. – 3.c. – 4.c.	6.40%	4.37%
6. Normal Cost of Pre-Funded Benefits		
a) Service Retirement Benefits	10.85%	10.84%
b) Disability Retirement Benefits	1.45%	1.46%
c) Survivor Benefits	0.63%	0.64%
d) Separation Benefits	<u>3.37%</u>	<u>3.45%</u>
e) Total Normal Cost	16.30%	16.39%
7. Member Contributions	<u>8.00%</u>	<u>8.00%</u>
8. Employer Normal Cost	8.30%	8.39%
9. Percent Available to Amortize UAAL	-1.90%	-4.02%
10. Number of Years to Amortize UAAL	11 ³	11 ³

¹After reflecting assumption changes from experience study.

²May not change by more than 1.0% from the previous year.

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 for 2001
(Municipal Division)
(\$ in Thousands)

<u>December 31, Valuation Results:</u>	2001	2000 ¹
Actuarial Accrued Liability	\$1,746,761	\$1,575,898
Actuarial Value of Assets	<u>\$1,822,413</u>	<u>\$1,717,017</u>
Unfunded/(Overfunded) Actuarial Accrued Liability	(\$75,652)	(\$141,119)
Ten-Year Amortization of Overfunding	\$8,639	\$16,115
Valuation Payroll	\$436,582	\$399,737
Amortization of Overfunding as a Percent of Payroll	1.98%	4.03%
<u>Allocation of Overfunding</u>		
Employer Contribution Reduction	0.40%	0.81%
Effective Date	1/1/2003	1/1/2002
Additional Contribution Allocated to the Health Care Trust Fund	0.59%	1.21%
Effective Date	1/1/2003	1/1/2002
Additional Amount Available for MatchMaker	0.99%	2.01%
Effective Date	1/1/2003	1/1/2002

¹After reflecting assumption changes from experience study. Previously, the actuarial accrued liability was \$1,541,014.

Allocation of Statutory Contribution Rates
(Judicial Division)

	<u>Percent of Covered Payroll</u>	
	<u>2003</u>	<u>2002¹</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>(2.01)</u>	<u>(3.27)</u>
c) Total HCTF Allocation	(3.11)	(4.37)
3. Less: Contribution Available for MatchMaker		
a) Statutory Contribution	(3.09)	(2.00)
b) Allocation of Overfunding	<u>(3.36)</u>	<u>(5.45)</u>
c) Total Contribution Available for MatchMaker	(6.45) ²	(7.45)
4. Less: Employer Contribution Reduction		
a) Statutory Reduction	(0.25)	(0.25)
b) Allocation of Overfunding	(1.34)	(2.18)
c) Greater Reduction of (a) and (b)	<u>(1.34)</u>	<u>(2.18)</u>
5. Contribution Available for PERA Pre-Funded Benefits 1 – 2.c. – 3.c. – 4.c.	3.10%	0.00%
6. Normal Cost of Pre-Funded Benefits		
a) Service Retirement Benefits	13.09%	12.88%
b) Disability Retirement Benefits	1.92%	1.90%
c) Survivor Benefits	1.28%	1.29%
d) Separation Benefits	<u>1.59%</u>	<u>1.71%</u>
e) Total Normal Cost	17.88%	17.78%
7. Member Contributions	<u>8.00%</u>	<u>8.00%</u>
8. Employer Normal Cost	9.88%	9.78%
9. Percent Available to Amortize UAAL	-6.78%	-9.78%
10. Number of Years to Amortize UAAL	10 ³	14 ³

¹After reflecting assumption changes from experience study.

²May not change by more than 1.0% from the previous year.

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 For 2001
(Judicial Division)
(\$ in Thousands)

<u>December 31, Valuation Results:</u>	<u>2001</u>	<u>2000¹</u>
Actuarial Accrued Liability	\$150,943	\$134,415
Actuarial Value of Assets	<u>\$165,130</u>	<u>\$159,426</u>
Unfunded/(Overfunded) Actuarial Accrued Liability	(\$14,187)	(\$24,011)
Ten-Year Amortization of Overfunding	\$1,620	\$2,742
Valuation Payroll	\$24,140	\$21,673
Amortization of Overfunding as a Percent of Payroll	6.71%	12.65%
<u>Allocation of Overfunding</u>		
Employer Contribution Reduction	1.34%	2.53% ²
Effective Date	7/1/2003	7/1/2002
Additional Contribution Allocated to the Health Care Trust Fund	2.01%	3.79% ²
Effective Date	1/1/2003	1/1/2002
Additional Amount Available for MatchMaker	3.36%	6.33% ²
Effective Date	1/1/2003	1/1/2002

¹After reflecting assumption changes from experience study. Previously, the actuarial accrued liability was \$132,653.

²Due to the amortization of the overfunding as a percentage of payroll being larger than the net contribution available, the Employer Reduction was limited to 2.18%, the additional Health Care contribution was limited to 3.27%, and the additional amount available for the MatchMaker was limited to 5.45%.

Benefit recipients on rolls included in the December 31, 2001 valuation totaled 57,860 with annual benefits of \$1,281,834,264 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	52,903	\$1,197,812	1,948	\$25,106	54,851	\$1,222,918
Municipal	2,625	50,651	163	1,854	2,788	52,505
Judicial	<u>205</u>	<u>6,076</u>	<u>16</u>	<u>336</u>	<u>221</u>	<u>6,412</u>
Totals	55,733	\$1,254,539	2,127	\$27,296	57,860	\$1,281,835

Inactive members and deferred survivor beneficiaries totaled 10,351 as follows:

<u>Divisions</u>	<u>Inactive Members</u>	<u>Deferred Survivors</u>	<u>Total</u>
State and School	9,376	267	9,643
Municipal	673	20	693
Judicial	<u>14</u>	<u>1</u>	<u>15</u>
Totals	10,063	288	10,351

(\$ 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	\$13,408.3	\$16,061.3	\$29,469.6	\$28,947.9	\$521.7	0.98
Municipal	1,025.5	721.3	1,746.8	1,822.4	(75.6)	1.04
Judicial	74.1	76.8	150.9	165.1	(14.2)	1.09
Totals	\$14,507.9	\$16,859.4	\$31,367.3	\$30,935.4	\$431.9	0.99

*Includes deferred benefits for inactive members and survivors.

<u>Divisions</u>	<u>UAAL/Active Member Payroll</u>									
	<u>December 31</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>	<u>1992</u>
State and School	.11	*	*	.21	.44	.19	.49	.61	.65	.34
State	N/A	N/A	N/A	N/A	N/A	.42	.72	.81	.81	.45
School	N/A	N/A	N/A	N/A	N/A	.02	.33	.46	.53	.25
Municipal	*	*	*	.003	.07	*	.05	.12	.14	*
Judicial	*	*	*	*	.10	*	.26	.39	.49	.26

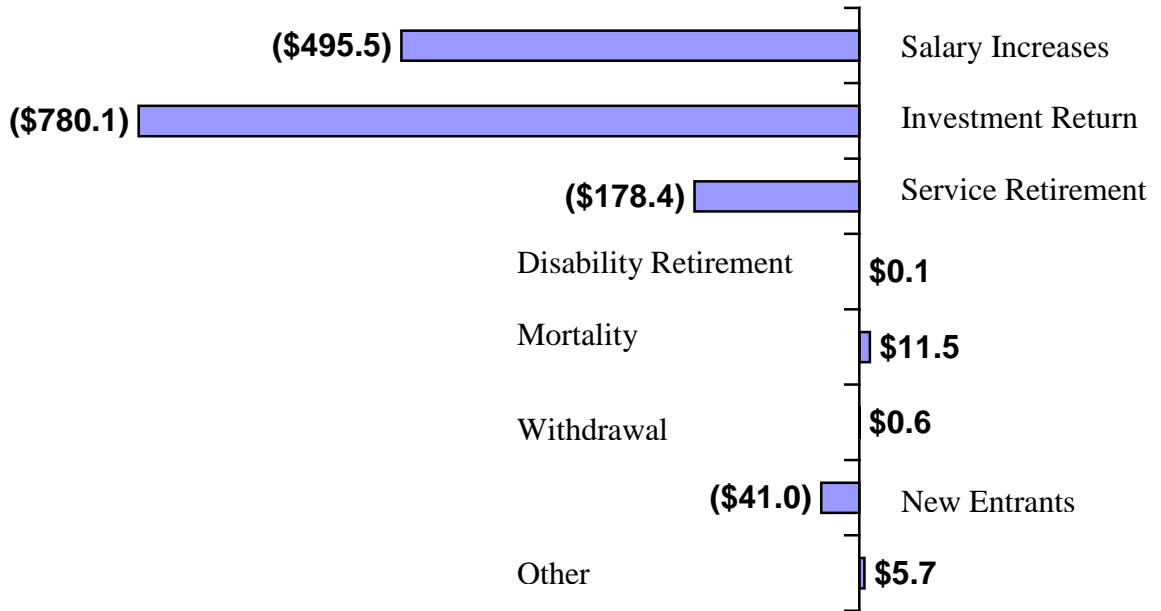
*Division was in surplus this year.

(\$ in Millions)

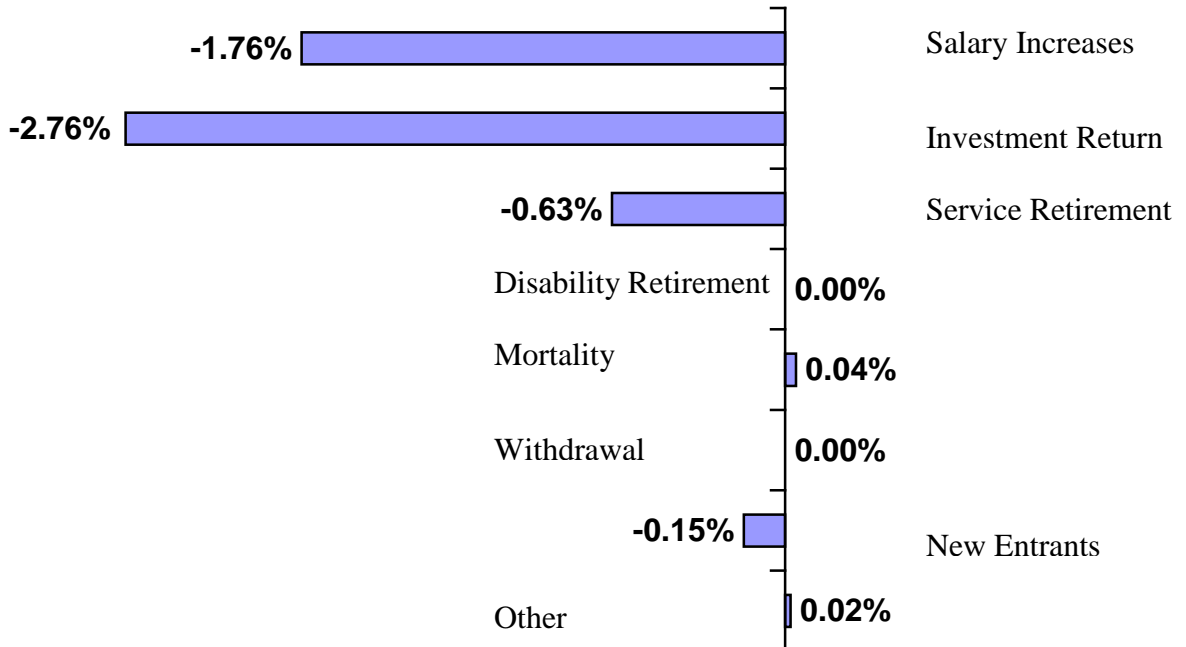
	<u>State and School</u>	<u>Municipal</u>	<u>Judicial</u>	<u>Total</u>
1. UAAL beginning of year	(\$1,256.9)	(\$176.0)	(\$26.8)	(\$1,459.7)
2. Increase due to change in assumptions	534.9	34.9	2.8	572.6
3. UAAL after change in assumptions: 1 + 2	(722.0)	(141.1)	(24.0)	(887.1)
4. Annual contribution in excess of the Normal Cost	78.5	(0.7)	(0.7)	77.1
5. Interest on (3) and (4): .0875 x (3) -.04375 x (4)	<u>(66.6)</u>	<u>(12.3)</u>	<u>(2.1)</u>	<u>(81.0)</u>
6. Expected from last year's valuation: 1+2-4+5	(867.1)	(152.7)	(25.4)	(1,045.2)
7. Total experience gains (losses)	(1,388.8)	(77.1)	(11.2)	(1,477.1)
8. UAAL at year end after changes: (6)-(7)	\$521.7	(\$75.6)	(\$14.2)	\$431.9

2001 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): 9.9% of salary, through 6/30/2002, 10.04% after 7/1/2002 State Troopers: 12.6% of salary through 6/30/2002, 12.74% after 7/1/2002 Municipal Division: 9.19% of salary. Judicial Division: 14.0% of salary through 6/30/2001, 11.82% after 7/1/2001 These contribution rates include the contributions allocated to the Health Care Trust Fund as follows: State and School Division (including State Troopers) 1.64% Municipal Division 2.31% Judicial Division 4.37%

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

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 service retirement benefit is calculated based on actual Service Credit at disability; otherwise, the service retirement benefit 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 their service retirement eligibility, the reduction for 50% or 100% continuation option will be based on the reduction factors at the time they 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 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 Benefits	Anyone receiving a monthly PERA benefit, spouses, and unmarried, dependent children under age 19 (under age 24 if enrolled in school full-time). Guardians of children receiving PERA survivor benefits if children are enrolled in Program. Retirees temporarily not receiving PERA benefits. Surviving spouses of deceased retirees who are not receiving PERA benefits but were enrolled in the Program when death occurred. Divorced spouses of retirees who are not receiving PERA benefits, but were enrolled in the Program when the divorce occurred.
Employer Contributions to Health Care Trust Fund (HCTF) (Includes Allocation of Overfunding)	State and School Division (including State Troopers) 1.64% Municipal Division 2.31% Judicial Division 4.37%
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 three Preferred Provider Organizations, 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. 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: <ul style="list-style-type: none"> - 5-10 years service - 10-20 years service - Over 20 years service 	<u>Under Age 65</u> 30% 30% 30%	<u>Over Age 65</u> 30% 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 Year**

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	156,578	\$4,910,448	\$31,361
State Troopers	<u>769</u>	<u>44,157</u>	57,421
Total	157,347	4,954,605	31,488
Retirants and Beneficiaries	54,851	\$ 1,222,918	\$22,295
Inactive Deferred	9,643		
Nonvested Inactive Due Refunds	<u>75,606</u>		
Total	297,447		

Development of Actuarial Value of Assets

	<u>(\$ Thousands)</u>
1. Actuarial Value December 31, 2000	\$27,749,435
2. Market Value December 31, 2001	25,500,904
3. Market Value December 31, 2000	28,268,524
4. Cash Flow During 2001	(480,557)
5. Expected Return During 2001: (1) x .0875 + (4) x .04375	2,407,051
6. Expected Actuarial Value of Assets: (1)+(4)+(5)	29,675,929
7. 2001 Phase-In Amount: (2)-(3)-(4)-(5)	(4,694,114)
8. Prior Years Phase-In	
- 2000	(2,201,844)
- 1999	2,247,519
- 1998	<u>1,613,942</u>
- Total	1,659,617
9. Recognition of Transition Difference Between Book and Market Value that existed on December 31, 1992 (20 years remaining)	30,630
10. Actuarial Value of Assets, December 31, 2001: (6) + .25 x [(7)+(8)]+(9)	\$28,947,935

During 2001, the actuarial value of assets achieved an investment return of 6.1%. This investment return was estimated assuming all benefit payments and contributions were made in the middle of the year.

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	\$17,060,537	\$4,648,307	\$12,412,230
Disability Benefits	607,915	372,278	235,637
Survivor Benefits	544,164	215,754	328,410
Separation Benefits	<u>1,740,775</u>	<u>1,308,786</u>	<u>431,989</u>
Active Member Totals	\$19,953,391	\$6,545,125	\$13,408,266
Retirants and Beneficiaries on Rolls	\$15,549,250	\$ 0	\$15,549,250
Inactive Deferred Benefits			
Member Portion	175,784	0	175,784
Employer Portion	216,793	0	216,793
Nonvested Inactives—Refunds Due	<u>119,515</u>	<u>0</u>	<u>119,515</u>
Total	\$36,014,733	\$6,545,125	\$29,469,608
Assets Used in Valuation			\$28,947,935
Unfunded/(Overfunded) Actuarial Accrued Liabilities			\$521,673

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	11.30%
Disability Benefits	0.89
Survivor Benefits	0.54
Separation Benefits	<u>3.06</u>
Total	15.79%
Member Current Contributions ¹	<u>8.02</u>
Employer Normal Cost	7.77%
Employer Contribution Rate ¹	7.16%
Percent Available to Amortize Unfunded Actuarial Accrued Liabilities (UAAL)	-0.61%
Number of Years to Amortize UAAL	13 ²

¹Weighted average of more than one statutory rate.

²Funding period is calculated assuming that the employer contribution available for MatchMaker will decrease to 0.91% effective January 1, 2004, and to 0.0% effective January 1, 2005.

Actuarial Present Value of Accumulated Plan Benefits

	<u>\$ in Thousands</u>
Vested Benefits	
For retired lives	\$15,549,250
For others	9,125,677
Non-Vested Benefits	<u>1,228,797</u>
Actuarial Present Value of Accumulated Plan Benefits	\$25,903,724

The actuarial present value of accumulated plan benefits as of December 31, 2000, was \$23,193 million. During the year, the plan experienced a net increase of \$2,711 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	76,538
State Troopers	506
Non-Vested	
Other Than State Troopers	80,040
State Troopers	<u>263</u>
Total	157,347

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)
12-31-01	\$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%
12-31-96	\$16,279,813	\$16,979,142	\$699,329	95.9%	\$3,660,312	19.1%

Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution * (ARC)	% ARC Contributed
(1)	(2)	(3)
2001	6.84%	100%
2000	9.82%	100%
1999	10.46%	100%
1998	10.61%	100%
1997	10.71%	100%
1996	10.83%	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: The assumptions were changed since the previous valuation, please see pages 23 through 29 for a description of the current assumptions.

Trend Factors: There was no significant change in the population size during 2001. There were no material plan changes since the last valuation.

Changes in Unfunded Actuarial Accrued Liabilities

During Calendar 2001

\$ in Millions

1. Beginning of Year:	
a) Unfunded actuarial accrued liabilities (UAAL) before assumption changes	(\$1,256.9)
b) UAAL after assumption changes	(722.0)
c) Annual contribution in excess of the Normal Cost	78.6
2. Unfunded actuarial accrued liabilities, end of year:	
a) Expected UAAL, from last year's valuation: ¹ (1b) x 1.0875 - (1c) x 1.04375	(867.1)
b) Actual UAAL, from this year's valuation before plan and assumption changes	521.7
3. Gains (Losses) on year's activities:	
a) From differences between assumed and actual experience in basic risk areas: (2a)-(2b)	(\$1,388.8)
b) From non-recurring activities (changes in plan assumptions): (1a)-(1b)	<u>(534.9)</u>
c) Total: (3a)+(3b)	(\$1,923.7)

¹After reflecting the change in assumptions

Gains & Losses in Actuarial Accrued Liabilities During Calendar Year 2001

<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.	(\$173.9)	(0.66%)
<u>Disability Retirements</u> . If disability claims are less than assumed, there is a gain. If more claims, a loss.	(0.1)	(0.00)
<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.	11.1	0.04
<u>Withdrawal</u> . If more actuarial liabilities are released by terminations than assumed, there is a gain. If smaller releases, a loss.	(2.3)	(0.01)
<u>New Entrants</u> . New members enter the plan with some service, causing a loss.	(34.3)	(0.13)
<u>Other</u> . Change in group size, service credit reinstatements, data adjustments and miscellaneous unidentified changes in the UAAL.	7.0	0.03
-----Economic Risk Areas-----		

<u>Salary Increases</u> . If there are smaller salary increases than assumed, there is a gain. If greater increases, a loss.	(468.3)	(1.77)
<u>Investment Income</u> . If there is greater investment income than assumed, there is a gain. If less income, a loss.	<u>(728.0)</u>	<u>(2.74)</u>
Experience Gain (or Loss) During Year	(\$1,388.8)	(5.24%)

* Beginning of year accrued liabilities totaled \$26,493 million.
End of year accrued liabilities totaled \$29,470 million after assumption changes.

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	12,220	\$436,582	\$35,727
Retirants and Beneficiaries	2,788	\$52,505	\$18,832
Inactive Deferred	693		
Nonvested Inactives Due Refunds	<u>7,920</u>		
Total	23,621		

Development of Actuarial Value of Assets

	<u>(\$ Thousands)</u>
1. Actuarial Value December 31, 2000	\$1,717,017
2. Market Value December 31, 2001	1,601,852
3. Market Value December 31, 2000	1,740,454
4. Cash Flow During 2001	2,863
5. Expected Return During 2001: (1) x .0875 + (4) x .04375	150,364
6. Expected Actuarial Value of Assets: (1)+(4)+(5)	1,870,244
7. 2001 Phase-In Amount: (2)-(3)-(4)-(5)	(291,829)
8. Prior Years Phase-In	
- 2000	(135,782)
- 1999	134,934
- 1998	<u>94,858</u>
- Total	94,010
9. Recognition of Transition Difference Between Book and Market Value that existed on December 31, 1992 (20 years remaining)	1,624
10. Actuarial Value of Assets, December 31, 2001 (6) + .25 x [(7)+(8)]+(9)	\$1,822,413

During 2001, the actuarial value of assets achieved an investment return of 6.0%. This investment return was estimated assuming all benefit payments and contributions were made in the middle of the year.

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	\$1,333,090	\$425,568	\$907,522
Disability Benefits	92,215	57,669	34,546
Survivor Benefits	59,672	24,874	34,798
Separation Benefits	<u>186,078</u>	<u>137,454</u>	<u>48,624</u>
Active Member Totals	\$1,671,055	\$645,565	\$1,025,490
Retirants and Beneficiaries on Rolls	\$ 677,739	\$ 0	\$677,739
Inactive Deferred Benefits			
Member Portion	15,277	0	15,277
Employer Portion	16,213	0	16,213
Nonvested Inactives – Refunds Due	<u>12,042</u>	<u>0</u>	<u>12,042</u>
Total	\$2,392,326	\$645,565	\$1,746,761
Assets Used in Valuation			\$1,822,413
Unfunded/(Overfunded) Actuarial Accrued Liabilities			(\$75,652)

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	10.85%
Disability Benefits	1.45
Survivor Benefits	0.63
Separation Benefits	<u>3.37</u>
Total	16.30%
Member Current Contributions	<u>8.00</u>
Employer Normal Cost	8.30%
Employer Contribution Rate	6.40%
Percent Available to Amortize Unfunded Actuarial Accrued Liabilities (UAAL)	-1.90%
Number of Years to Amortize UAAL	11 ¹

¹The Division has a surplus as of the valuation date. This represents the number of years to reduce the surplus to \$0.

Actuarial Present Value of Accumulated Plan Benefits

	<u>\$ in Thousands</u>
Vested Benefits	
For retired lives	\$677,739
For others	634,699
Non-Vested Benefits	<u>112,227</u>
Actuarial Present Value of Accumulated Plan Benefits	\$1,424,665

The actuarial present value of accumulated plan benefits as of December 31, 2000, was \$1,256 million. During the year, the plan experienced a net increase of \$169 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	5,526
Non-Vested	<u>6,694</u>
Total	12,220

Schedule of Funding Progress (in thousands)

Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Liability (UAAL)	Funded Ratio	Covered Payroll	UAAL/ Covered Payroll
(1)	(2)	(3)	(4)	(5)	(6)	(7)
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%
12-31-96	\$949,049	\$920,713	(\$28,336)	103.1%	\$289,818	(9.8%)

Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution * (ARC)	% ARC Contributed
(1)	(2)	(3)
2001	6.26%	100%
2000	8.90%	100%
1999	9.05%	100%
1998	9.20%	100%
1997	9.20%	100%
1996	9.20%	100%

*As a percent of covered payroll.

Notes to Schedules

Actuarial Method: Individual Entry Age Normal.

Actuarial Assumptions: The assumptions have been revised since the previous valuation. Please see Pages 23 through 29 for a description of the current assumptions.

Trend Factors: There was no significant change in the population size during 2001. There were no significant plan changes since the last valuation.

Changes in Unfunded Actuarial Accrued Liabilities

During Calendar 2001

	<u>\$ in Millions</u>
1. Beginning of Year:	
a) Unfunded actuarial accrued liabilities (UAAL) before assumption changes	(\$176.0)
b) UAAL after assumption changes	(141.1)
c) Annual contribution in excess of the Normal Cost	(0.7)
2. Unfunded actuarial accrued liabilities, end of year:	
a) Expected UAAL, from last year's valuation: ¹ (1b) x 1.0875 - (1c) x 1.04375	(152.7)
b) Actual UAAL, from this year's valuation before plan and assumption changes	(75.7)
3. Gains (Losses) on year's activities:	
a) From differences between assumed and actual experience in basic risk areas: (2a)-(2b)	(\$77.0)
b) From non-recurring activities (changes in actuarial assumptions): (1a)-(1b)	<u>(34.9)</u>
c) Total: (3a)+(3b)	(\$111.9)

¹After reflecting change in assumptions.

Gains & Losses in Actuarial Accrued Liabilities During Calendar Year 2001

<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.	(\$4.2)	(0.27%)
<u>Disability Retirements.</u> If disability claims are less than assumed, there is a gain. If more claims, a loss.	0.1	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.	0.6	0.04
<u>Withdrawals.</u> If more actuarial liabilities are released by terminations than assumed, there is a gain. If smaller releases, a loss.	2.6	0.16
<u>New Entrants.</u> New members enter the plan with some service, causing a loss.	(6.4)	(0.41)
<u>Other.</u> Change in group size, service credit reinstatements, data adjustments and miscellaneous unidentified changes in the UAAL.	1.3	0.09
-----Economic Risk Areas----- -----		
<u>Salary Increases.</u> If there are smaller salary increases than assumed, there is a gain. If greater increases, a loss.	(23.2)	(1.51)
<u>Investment Income.</u> If there is greater investment income than assumed, there is a gain. If less income, a loss.	(47.8)	(3.11)
Experience Gain (or Loss) During Year	(\$77.0)	(5.00%)

* Beginning of year accrued liabilities totaled \$1,541.0 million.
End of year accrued liabilities totaled \$1,746.8 million after assumption changes.

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	266	\$24,140	\$90,752
Retirants and Beneficiaries	221	\$6,413	\$29,018
Inactive Deferred	15		
Nonvested Inactives Due Refunds	<u>2</u>		
Total	504		

Development of Actuarial Value of Assets

	<u>(\$ Thousands)</u>
1. Actuarial Value December 31, 2000	\$159,426
2. Market Value December 31, 2001	145,227
3. Market Value December 31, 2000	162,163
4. Cash Flow During 2001	(3,847)
5. Expected Return During 2001: (1) x .0875 + (4) x .04375	13,781
6. Expected Actuarial Value of Assets: (1)+(4)+(5)	169,360
7. 2001 Phase-In Amount: (2)-(3)-(4)-(5)	(26,870)
8. Prior Years Phase-In	
- 2000	(12,636)
- 1999	12,768
- 1998	<u>9,140</u>
- Total	9,272
9. Recognition of Transition Difference Between Book and Market Value that existed on December 31, 1992 (20 years remaining)	169
10. Actuarial Value of Assets, December 31, 2001: (6) + .25 x [(7)+(8)]+(9)	\$165,130

During 2001, the actuarial value of assets achieved an investment return of 6.1%. This investment return was estimated assuming all benefit payments and contributions were made in the middle of the year.

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	\$88,699	\$23,353	\$65,346
Disability Benefits	8,345	3,470	4,875
Survivor Benefits	5,510	2,212	3,298
Separation Benefits	3,566	2,994	572
Active Member Totals	\$106,120	\$32,029	\$74,091
Retirants and Beneficiaries on Rolls	\$ 74,497	\$ 0	\$74,497
Inactive Deferred Benefits			
Member Portion	867	0	867
Employer Portion	1,386	0	1,386
Nonvested Inactives-Refunds Due	102	0	102
Total	\$182,972	\$32,029	\$150,943
Assets Used in Valuation			\$165,130
Unfunded/(Overfunded) Actuarial Accrued Liabilities			(\$14,187)

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	13.09%
Disability Benefits	1.92
Survivor Benefits	1.28
Separation Benefits	<u>1.59</u>
Total	17.88%
Member Current Contributions	<u>8.00</u>
Employer Normal Cost	9.88%
Employer Contribution Rate	3.10%
Percent Available to Amortize Unfunded Actuarial Accrued Liabilities (UAAL)	-6.78%
Number of Years to Amortize UAAL	10 ¹

¹The Division has a surplus as of the valuation date. This represents the number of years to reduce the surplus to \$0.

Actuarial Present Value of Accumulated Plan Benefits

	<u>\$ in Thousands</u>
Vested Benefits	
For retired lives	\$74,497
For others	58,390
Non-vested Benefits	<u>5,641</u>
Actuarial Present Value of Accumulated Plan Benefits	\$138,528

The actuarial present value of accumulated plan benefits as of December 31, 2000 was \$122.5 million. During the year, the plan experienced a net increase of \$16.0 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	212
Non-Vested	<u>54</u>
Total	266

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)
12-31-01	\$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%
12-31-96	\$92,908	\$92,051	(\$857)	100.9%	\$18,832	(4.6%)

Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution * (ARC)	% ARC Contributed
(1)	(2)	(3)
2001	1.79%	100%
2000	13.40%	100%
1999	14.05%	100%
1998	14.20%	100%
1997	14.20%	100%
1996	14.20%	100%

*As a percent of covered payroll.

Notes to Schedules

Actuarial Method: Individual Entry Age Normal.

Actuarial Assumptions: The assumptions have been revised since the previous valuation, please see pages 23 through 29 for a description of the current assumptions.

Trend Factors: There was no significant change in the population size during 2001. There were no significant plan changes since the last valuation.

Changes in Unfunded Actuarial Accrued Liabilities

During Calendar 2001

	<u>\$ in Millions</u>
1. Beginning of Year:	
a) Unfunded actuarial accrued liabilities (UAAL) before assumption changes	(\$26.8)
b) UAAL after assumption changes	(24.0)
c) Annual contribution in excess of the Normal Cost	(0.7)
2. Unfunded actuarial accrued liabilities, end of year:	
a) Expected UAAL, from last year's valuation: ¹ (1b) x 1.0875 - (1c) x 1.04375	(25.4)
b) Actual UAAL, from this year's valuation	(14.2)
3. Gains (Losses) on year's activities:	
a) From differences between assumed and actual experience in basic risk areas: (2a)-(2b)	(\$11.2)
b) From non-recurring activities (changes in assumptions): (1a)-(1b)	<u>(2.8)</u>
c) Total: (3a)+(3b)	(\$14.0)

¹After reflecting the change in assumptions.

Gains & Losses in Actuarial Accrued Liabilities During Calendar Year 2001

<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.	(\$0.2)	(0.16%)
<u>Disability Retirements</u> . If disability claims are less than assumed, there is a gain. If more claims, a loss.	0.0	0.02
<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.	(0.1)	(0.08)
<u>Withdrawals</u> . If more actuarial liabilities are released by terminations than assumed, there is a gain. If smaller releases, a loss.	0.3	0.25
<u>New Entrants</u> . New members enter the plan with some service, causing a loss.	(0.3)	(0.22)
<u>Other</u> . Change in group size, service credit reinstatements, data adjustments and miscellaneous unidentified changes in the UAAL.	(2.7)	(2.03)
-----Economic Risk Areas-----		
<u>Salary Increases</u> . If there are smaller salary increases than assumed, there is a gain. If greater increases, a loss.	(4.0)	(3.07)
<u>Investment Income</u> . If there is greater investment income than assumed, there is a gain. If less income, a loss.	<u>(4.2)</u>	<u>(3.18)</u>
Experience Gain (or Loss) During Year	(\$11.2)	(8.47%)

* Beginning of year accrued liabilities totaled \$132.7 million.
End of year accrued liabilities totaled \$150.9 million after assumption changes.

Postretirement Health Care Program

Valuation Highlights

The December 31, 2001 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	169,833
Inactive Members	10,351
Benefit Recipients	<u>33,745</u>
Total	213,929
Average Age – Active Members	43.30 years
Average Service – Active Members	7.58 years
Average Age – Benefit Recipients	69.83 years

Development of Actuarial Value of Assets

	<u>(\$ Thousands)</u>
1. Actuarial Value December 31, 2000	\$116,034
2. Market Value December 31, 2001	125,863
3. Market Value December 31, 2000	122,180
4. Cash Flow During 2001	14,501
5. Expected Return During 2001: (1) x .0875 + (4) x .04375	10,787
6. Expected Actuarial Value of Assets: (1)+(4)+(5)	141,322
7. 2001 Phase-In Amount: (2)-(3)-(4)-(5)	(21,605)
8. Prior Years Phase-In	
- 2000	(8,989)
- 1999	10,491
- 1998	<u>7,606</u>
- Total	9,108
9. Actuarial Value of Assets, December 31, 2001: (6) + .25 x [(7)+(8)]	\$138,198

During 2001, the actuarial value of assets achieved an investment return of 6.2%. This investment return was estimated assuming all benefit payments and contributions were made in the middle of the year.

Allocation of Actuarial Present Values

Actuarial Present Value, December 31, of	Actuarial Present Value of Future Benefits	Portion Covered by Future Normal Cost Contributions	Actuarial Accrued Liabilities (2)-(3)
(1)	(2)	(3)	(4)
Active Members	\$490,702	\$111,178	\$379,524
Benefit Recipients	389,435	0	389,435
Inactive Members	<u>14,002</u>	<u>0</u>	<u>14,002</u>
Total	\$ 894,139	\$111,178	\$782,961
Assets Used in Valuation			\$138,198
Unfunded Actuarial Accrued Liabilities			\$644,763
Ratio of Assets to Liabilities			17.7%

Changes in Unfunded Actuarial Accrued Liabilities

During Calendar Year 2001

	<u>\$ in Millions</u>
1. Beginning of Year:	
a) Unfunded actuarial accrued liabilities (UAAL) before assumption changes	\$693.6
b) UAAL after assumption changes	667.1
c) Annual contribution in excess of the Normal Cost	56.9
2. Unfunded actuarial accrued liabilities, end of year:	
a) Expected UAAL, from last year's valuation: ¹ (1b) x 1.0875 - (1c) x 1.04375	666.1
b) Actual UAAL, from this year's valuation	644.8
3. Gains (Losses) on year's activities:	
a) From differences between assumed and actual experience in basic risk areas: (2a)-(2b)	21.3
b) From non-recurring activities (changes in assumptions): (1a)-(1b)	<u>26.5</u>
c) Total: (3a)+(3b)	\$47.8

¹After reflecting the change in assumptions.

Employer Contribution Rate

Expressed as Percent of Active Member Payroll

<u>Contribution For</u>	<u>Contributions Expressed as Percents of Payroll</u>
Normal Cost	0.36%
Member Current Contributions	0.00
Employer Normal Cost	0.36%
Employer Contribution Rate	
Statutory Rate	1.10%
Additional from Overfunding	0.06% ^{1*}
Total	1.16%
Percent Available to Amortize Unfunded Actuarial Accrued Liabilities (UAAL)	0.80%
Number of Years to Amortize UAAL	20

Reconciliation of Amortization Years

Amortization Years Before Gain Sharing as of 12/31/00	29
Change in Normal Cost	0
Gains and Losses	-1
Assumption Changes	<u>-6</u>
Amortization Years, Before Overfunding	22
Effect of Gain Sharing	<u>-2</u>
Amortization Years, 12/31/2001	20

¹Weighted average of more than one statutory rate. Rates vary by Division.

Actuarial Present Value of Accumulated Plan Benefits

	<u>\$ in Thousands</u>
Vested Benefits	
For retired lives	\$389,435
For others	354,381
Non-vested Benefits	<u>11,370</u>
Actuarial Present Value of Accumulated Plan Benefits	\$755,186

The actuarial present value of accumulated plan benefits as of December 31, 2000, was \$767.6 million. During the year, the plan experienced a net decrease of \$12.4 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	82,782
Non-Vested	<u>87,051</u>
Total	169,833

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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)
12-31-01	\$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%
12-31-95	\$72,423	\$551,699	\$479,276	13.1%	\$3,803,799	12.6%

Schedule of Employer Contributions

Fiscal Year	Annual Required Contribution * (ARC)	% ARC Contributed
2001	1.48%	100%
2000	1.10%	100%
1999	0.95%	100%
1998	0.80%	100%
1997	0.80%	100%
1996	0.80%	100%

*As a percent of covered payroll.

Notes to Schedules

Actuarial Method: Individual Entry Age Normal.

Actuarial Assumptions: The assumptions were revised since the last valuation. Please see pages 25 through 31 for a description of the assumptions.

Trend Factors: There was no significant change in the population size during 2001. 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	Percentage (5 ÷ 4)
(1)	(2)	(3)	(4)	(5)	(6)
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%