

**State of Alaska
Teachers' Retirement System**

**Actuarial Valuation Report
as of June 30, 1994**

Prepared by:

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March 14, 1995

State of Alaska
Teachers' Retirement Board
Department of Administration
Division of Retirement & Benefits
P.O. Box 110203
Juneau, AK 99811-0203

Dear Members of the Board:

Actuarial Certification

The actuarial valuation required for the State of Alaska Teachers' Retirement System has been prepared as of June 30, 1994 by William M. Mercer, Incorporated. The purposes of the report include:

- (1) a review of experience under the Plan for the year ended June 30, 1994;
- (2) a determination of the appropriate contribution rate for each employer in the System;
- (3) the provision of reporting and disclosure information for financial statements, governmental agencies, and other interested parties.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions, in conjunction with employee data provided to us by the System's staff and financial information provided by the audited report from KPMG Peat Marwick, to determine a sound value for the System liability. This data has not been audited, but it has been reviewed and found to be consistent, both internally and with prior years' data. The actuarial assumptions are based on the results of experience studies presented to the Board in October 1991 and October 1994.

The contribution requirements are determined as a percentage of payroll, and reflect the cost of benefits accruing in FY95 and a 25-year rolling amortization of the unfunded accrued liability. The amortization period is set by the Board. Contribution levels are recommended by the Actuary and adopted by the Board each year. The ratio of assets to liabilities decreased from 93.1% to 89.6% during the year, primarily due to a change in economic actuarial assumptions. Over the years, progress has been made toward achieving the funding objectives of the System.

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Teachers' Retirement Board

March 14, 1995

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There were no significant changes in the demographic actuarial assumptions or actuarial methods used in the determination of system liabilities this year. However, there was a change in the economic actuarial assumptions and asset valuation method. The assumptions and methods, when applied in combination, fairly represent past and anticipated future experience of the System.

The total inflation assumption was changed from 5% to 4% annually. This in turn affected the economic assumptions, including investment return, salary scale, and health cost trend. The following table shows the prior and new economic assumptions:

	Prior Assumption	New Assumption 6/30/94
Inflation	5.0%	4.0%
Investment Return	9.0%	8.0%
Salary Scale:		
Inflation	5.0%	4.0%
Productivity	0.5%	0.5%
Merit (first 5 years)	1.0%	1.0%
Health Cost Trend:		
FY95	9.5%	9.5%
FY96	8.5%	8.5%
FY97	7.5%	7.5%
FY98	7.5%	6.5%
FY99 & later	7.5%	5.5%

The method for calculating valuation assets was changed. The new asset valuation method smooths the difference between expected investment return and actual return during a given year. The method spreads the results over five years by recognizing 20% of the investment gain or loss in each of the current and preceding four years. By spreading the asset gain or loss, only the investment return is smoothed, producing a less volatile result, leading to overall contributions which are easier to budget and at the same time remain appropriate to properly fund the system.

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March 14, 1995
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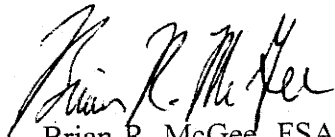
Future contribution requirements may differ from those determined in the valuation because of:

- (1) differences between actual experience and anticipated experience based on the assumptions;
- (2) changes in actuarial assumptions or methods;
- (3) changes in statutory provisions; or
- (4) differences between the contribution rates determined by the valuation and those adopted by the Board.

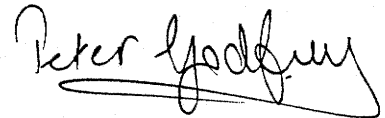
The undersigned are members of the American Academy of Actuaries and are fully qualified to provide actuarial services to the State of Alaska.

We believe that this report conforms with the requirements of the Alaska statutes, and where applicable, other federal and accounting laws, regulations and rules, as well as generally accepted actuarial principles and practices.

Sincerely,



Brian R. McGee, FSA
Managing Director



Peter L. Godfrey, FIA
Principal

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Highlights

This report has been prepared by William M. Mercer, Incorporated to:

- (1) present the results of a valuation of the Alaska Teachers' Retirement System as of June 30, 1994;
- (2) review experience under the plan for the year ended June 30, 1994;
- (3) determine the appropriate contribution rate for each employer in the System;
- (4) provide reporting and disclosure information for financial statements, governmental agencies, and other interested parties.

The report is divided into three sections. Section 1 contains the results of the valuation. It includes the experience of the plan during the 1994 Fiscal Year, the current annual costs, and reporting and disclosure information.

Section 2 describes the basis of the valuation. It summarizes the plan provisions, provides information relating to the plan participants, and describes the funding methods and actuarial assumptions used in determining liabilities and costs.

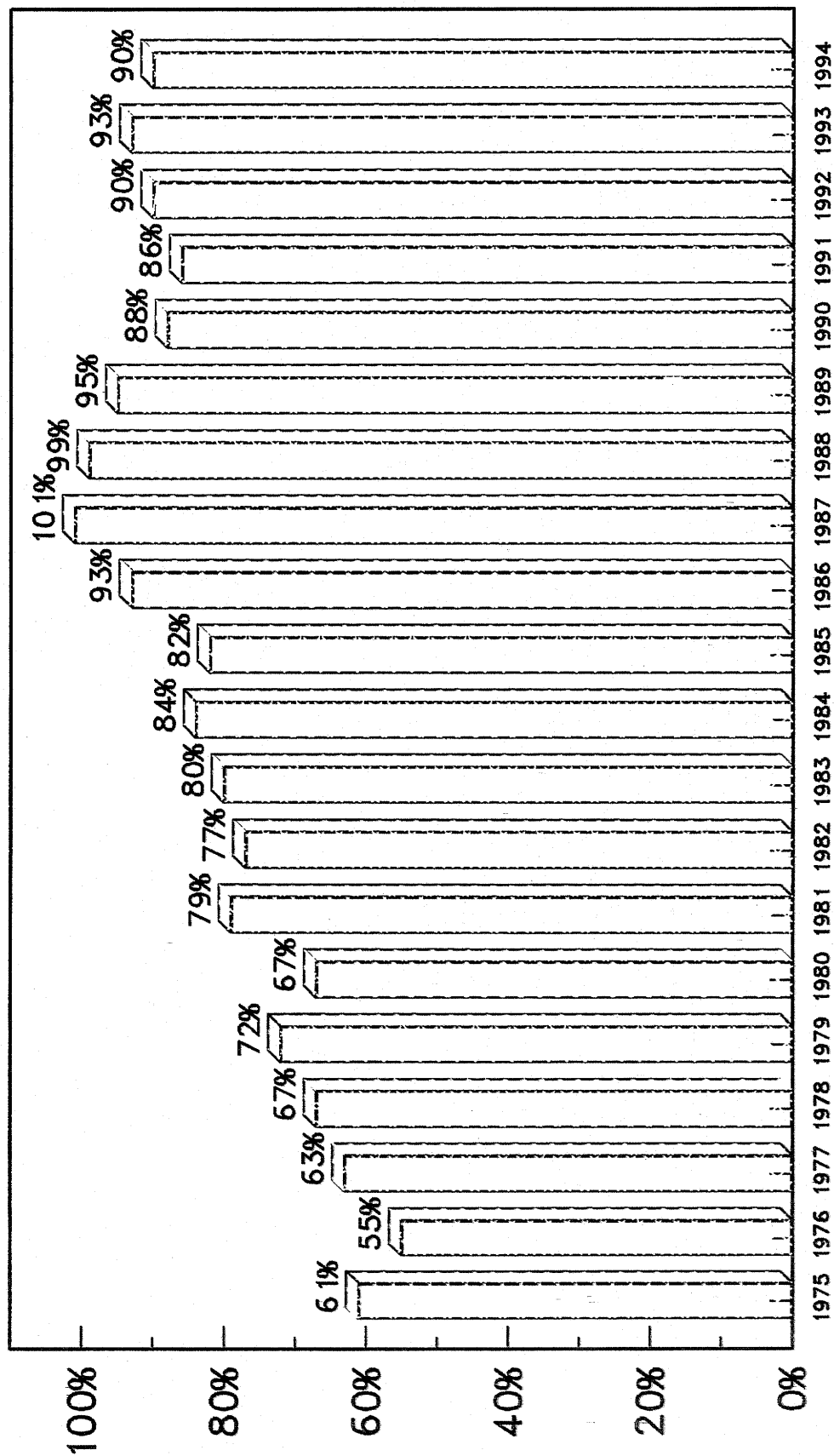
Section 3 contains additional exhibits showing historical information on system experience, unfunded liabilities, and the value of accumulated benefits.

The principle results are as follows:

	<u>1993</u>	<u>1994</u>
Funding Status as of June 30:		
(a) Valuation Assets*	\$ 2,261,082	\$ 2,472,957
(b) Accrued Liability*		
i) Non-Medical Benefits	2,016,852	2,281,178
ii) Total Benefits (including medical)	2,429,456	2,761,409
(c) Funding Ratio, (a) / (b)		
i) Non-Medical Benefits	112.1%	108.4%
ii) Total Benefits (including medical)	93.1%	89.6%

* In thousands.

STATE OF ALASKA TRS FUNDING RATIO HISTORY



AT JUNE 30

Employer Contribution Rates
for Fiscal Year:

	<u>1996</u>	<u>1997</u>
(a) Normal Cost Rate	9.06%	9.70%
(b) Past Service Rate	3.42%	5.26%
(c) Total Contribution Rate	12.48%	14.96%
(d) Actuarial Projection Rate	12.00%	12.00%

Analysis of the Valuation

As shown in the Highlights section of the report, the funding ratio as of June 30, 1994 has decreased from 93.1% to 89.6%, a decrease of 3.5%. The total employer contribution rate has increased from 12.48% of payroll for FY96 to 14.96% for FY97, an increase of 2.48% of payroll. The reasons for the change in the funded status and contribution rate are explained below.

(1) Retiree Medical Insurance

The following table summarizes the monthly premium per benefit recipient since retiree medical benefits have been provided under PERS and TRS.

<u>Fiscal Year</u>	<u>Monthly Premium Per Retiree For Health Coverage</u>	<u>Annual Percentage Increase</u>	<u>Average Annual Increase Since 1978</u>
1977	\$ 34.75	--	--
1978	57.64	66%	--
1979	69.10	20%	20%
1980	64.70	- 6%	6%
1981	96.34	49%	19%
1982	96.34	0%	14%
1983	115.61	20%	15%
1984	156.07	35%	18%
1985	191.85	23%	19%
1986	168.25	-12%	14%
1987	165.00	- 2%	12%
1988	140.25	-15%	9%
1989	211.22	51%	13%
1990	252.83	20%	13%
1991	243.98	- 4%	12%
1992	243.98	0%	11%
1993	226.90	- 7%	10%
1994	309.72	37%	11%
1995	336.05	9%	11%
1996	350.50	4%	11%

As you can see from the above table, the monthly retiree medical premium increased during the year, to \$336.05. The premium for the 1996 fiscal year has increased to \$350.50, an increase of 4%. Since FY87, annual premium rate changes have ranged from 51% up to 15% down, but the average annual increase has been about 9%.

This year, in an attempt to better predict the long-term increase in medical premiums, the Board adopted a health cost trend assumption which varies by year, declining to an ultimate rate equal to inflation plus 1.5%, or 5.5% for FY99 and later. If the long-term assumption remains reasonable, short-term gains and losses from the annually-determined medical premium rate will offset each other over time.

To help avoid the volatility in the funding and solvency of the System from bringing large health-related gains and losses into the System every year, we have been using the health cost trend assumption to determine actuarial liabilities for retiree medical benefits. Due to the change in the health cost trend assumption this year, we made an adjustment back to the actual medical premium as the basis for going forward. The difference between the assumed rate and the actual rate will be tracked annually and reduced if the gap becomes too wide. Also, adjustments will be made again, if necessary, to the assumed medical premium rate every four to five years when a formal experience analysis is performed.

The effect of the adjustment back to actual premium this year was a small loss to the System which increased the employer contribution rate by .25%.

(2) Investment Performance

The Asset Valuation Method has been changed this year. In the past, the system used an asset valuation method which multiplied the five-year average of the ratio of actuarial (generally market) to book value by the current book value to determine valuation assets. This number had to fall within the range of book and actuarial value.

One purpose of using asset valuation methods is to smooth investment returns. By using the full actuarial and book values in the valuation method, additional components of the change in the value of assets, including contributions, benefit payments, and expenses, are included in the smoothing technique. Since investment return is a direct result of actual money flows instead of artificially smoothed flows, this method will distort the investment return for the year.

The new asset valuation method only smooths the difference between expected investment return and actual return during a given year. The method spreads the results over five years by recognizing 20% of the investment gain or loss in each of the current and preceding four years. By spreading the asset gain or loss, only the investment return is smoothed, producing a less volatile result, leading to overall contributions which are easier to budget and at the same time remain appropriate to properly fund the system. The new methodology is more widely used and accepted than the prior method in both the public and private sectors because it directly addresses the objective of smoothing only investment returns, and it is allowable under ERISA.

In order to establish an appropriate basis for going forward, we measured the FY94 investment loss using the market value of assets at June 30, 1993. This resulted in an

increase in the Valuation Assets at June 30, 1994 of \$48,909,000 and a reduction in the employer contribution rate of 0.89%.

To protect the system from the unlikely event that valuation assets differ markedly from market value, a limitation that valuation assets must fall between 80% and 120% of market value is included with this asset valuation method. The new method will be phased in over the next five years.

The approximate rate of return in FY94 based on market value of system assets was 2.41%. The new asset valuation method produced a rate of return based on valuation assets of 7.68%, compared to the 9.00% investment return assumption. This produced a loss of approximately \$30,309,000 to the System from investment performance, which decreased the funding ratio by 1.1% and raised the employer contribution rate by 0.55% of total payroll.

(3) Salary Increases

In recent years salary increases have been less than anticipated in the valuation assumptions. This was again true last year. Salary experience resulted in an actuarial gain which generated a reduction in the total employer contribution rate equal to .20% of total payroll.

(4) Employee Data

Section 2.2 provides statistics on active and inactive participants. The number of active participants increased 0.3% from 9,459 at June 30, 1993 to 9,489 at June 30, 1994. This was less than the expected population increase scenario reviewed last year, and produced a loss to the System from fewer Tier 2 actives entering the System than expected. The average age of active participants increased from 43.06 to 43.32 and average credited service increased from 10.92 to 11.06 years.

The number of retirees and beneficiaries increased 6.2% from 3,891 to 4,134, and their average age increased from 62.47 to 62.73. There was a 13.0% increase in the number of vested terminated participants from 823 to 930. Their average age increased from 47.51 to 48.10.

The overall effect of these participant data changes was an actuarial loss to the System, resulting in an increase in the contribution rate equal to .47% of total payroll.

(5) Economic Assumption Changes

Based on a study of the inflation component of economic assumptions presented to the Board in October 1994, the total inflation assumption was changed from 5% to 4% annually. This in turn affected the economic assumptions, including investment return,

salary scale, and health cost trend. The following table shows the prior and new economic assumptions:

	Prior Assumption	New Assumption 6/30/94
Inflation	5.0%	4.0%
Investment Return	9.0%	8.0%
Salary Scale:		
Inflation	5.0%	4.0%
Productivity	0.5%	0.5%
Merit (first 5 years)	1.0%	1.0%
Health Cost Trend:		
FY95	9.5%	9.5%
FY96	8.5%	8.5%
FY97	7.5%	7.5%
FY98	7.5%	6.5%
FY99 & later	7.5%	5.5%

The overall effect of the assumption changes was to decrease the funding ratio by 3.8% and raise the employer contribution rate by 2.30% of total payroll.

(6) Actuarial Projections

At the Fall 1991 Board Meetings, the TRS Board approved the use of an enhanced actuarial projection system in the valuation report this year. The same actuarial cost method is used, but the enhanced system projects population growth patterns and their associated liabilities 25 years into the future. By also projecting plan assets, this report in effect produces an actuarial valuation for each of the next 25 years. Section 1.6, Actuarial Projections, contains the results of this analysis.

This type of information can be especially useful to two-tiered systems, such as TRS. All of the projected new entrants will be covered under the cost savings provisions of the second tier, so that the ultimate effect of the second tier on plan liabilities can be anticipated. As you can see in Section 1.6, based on the actuarial assumptions and cost method, future contribution rates are expected to decline, and then level out in 15 to 20 years.

Provided the Board adopts a long-term strategy consistent with the nature of the System, sound actuarial principles would support leveling out this contribution pattern to anticipate the second tier provisions coming into effect. In this way, a more stable contribution pattern could be adopted to help the employers better budget retirement expenses. This enhanced projection technique would be used annually so that a continuous tracking of the

contribution rate to the requirements could be made. Appropriate adjustments to the rate would still be proposed annually, but they should be much smaller than those seen in the past.

We recommend that the employer contribution rate adopted for FY97 remain 12.00% under this approach.

This rate includes a degree of conservatism for the following reasons:

- (a) Actuarial valuations are based on several assumptions, and the projection technique adds more. Actual system experience will vary from that assumed, so a degree of margin is appropriate when adopting a longer term rate.
- (b) Sound actuarial principles also suggest that retirement systems should fund employees' benefits while they are working. By leveling out the two-tier phenomenon, intergenerational inequities could occur. Since current contribution requirements are higher, the level rate is set higher than it theoretically needs to be, to allocate proportionately more of the cost to current generations and thus reduce the inequities.

Summary

The following table summarizes the sources of change in the total employer contribution rate:

Last year's total employer contribution rate	12.48%
Change due to:	
Retiree medical insurance	0.25%
Investment performance	0.55%
Salary increases	(0.20%)
Demographic experience	0.47%
Economic Assumption Changes	2.30%
Asset Valuation Method Change	(0.89%)
Total employer contribution rate this year	14.96%
Effect of enhanced Actuarial Projection system	(2.96%)
Proposed employer contribution rate	12.00%

Section 1

Valuation Results

This section sets forth the results of the actuarial valuation.

Section 1.1(a) shows the distribution of the assets as of June 30, 1994.

Section 1.1(b) shows the transactions of the plan's fund during FY94.

Section 1.1(c) develops the expected valuation assets and investment return as of June 30, 1994.

Section 1.1(d) develops the actual valuation assets as of June 30, 1994.

Section 1.2 shows the actuarial present values as of June 30, 1994.

Section 1.3 calculates the total contribution rate for FY97.

Section 1.4 calculates the actuarial gain or loss for FY94.

Section 1.5 provides disclosure information required by G.A.S.B. Statement No. 5.

Section 1.6 contains the financial projections.

1.1(a) Statement of Net Assets as of June 30, 1994 (in thousands)

	<u>Book Value</u>	<u>Actuarial Value</u>
Cash and Cash Equivalents	\$ 449	\$ 449
United States Government Bonds	450,631	487,181
Other United States Government Securities	22,392	22,856
Corporate Bonds	428,871	436,999
Commercial Paper	69,640	69,617
Other Dollar Dominated Securities	83,824	79,909
United States Common Stocks	859,198	923,925
International Stocks	188,873	209,148
Emerging Markets Stocks	20,700	21,255
Real Estate Equities	93,501	69,397
Mortgages (net of reserves)	3,733	3,733
Net Accrued Receivables	<u>27,250</u>	<u>27,250</u>
Total Assets	\$ 2,249,062	\$ 2,351,719

1.1(b) Changes in Net Assets During Fiscal Year 1994 (in thousands)

(1)	Net Assets, June 30, 1993, (market value)		\$ 2,306,503
(2)	Additions:		
(a)	Employee Contributions	\$ 47,904	
(b)	Employer Contributions	60,490	
(c)	Contributions for Retirement Incentive Program -		
	Employee Contributions	0	
	Employer Contributions	0	
(d)	Interest and Dividend Income	118,155	
(e)	Realized Gain/(Loss)	64,314	
(f)	Unrealized Gain (Loss) on Investments	(119,208)	
(g)	Other	<u>(30)</u>	171,625
(3)	Deductions:		
(a)	Medical Benefits	\$ 15,725	
(b)	Retirement Benefits	100,767	
(c)	Refunds of Contributions	2,258	
(d)	Administrative Expenses	<u>7,659</u>	<u>126,409</u>
(4)	Net Assets, June 30, 1994, (market value)		\$ 2,351,719

Approximate Market Value Investment Return
Rate During the Year, Net of Administrative Expenses

2.41%

**1.1(c) Development of Expected Valuation Assets
as of June 30, 1994 (in thousands)**

(1)	June 30, 1993 Market Value, (Item (1) from 1.1(b))	\$ 2,306,503
(2)	Total Contributions for FY94, (Item (2a) + (2b) + (2c) from 1.1(b))	108,394
(3)	Total Benefit Payments for FY94, (Item (3a) + (3b) + (3c) from 1.1(b))	118,750
(4)	Expected Investment Return, Net of Expenses, for the period 7/1/93 through 6/30/94 $((1) + .5 \times [(2) - (3)]) \times 9.0\%$	207,119
(5)	Actual Investment Return, Net of Expenses, for the period 7/1/93 through 6/30/94 [Item (2d) + (2e) + (2f) + (2g) - (3d) from 1.1(b)]	55,572
(6)	Total Investment Gain/(Loss) (5) - (4)	(151,547)
(7)	Expected Valuation Assets, (1) + (2) - (3) + (4)	2,503,266

**1.1(d) Development of Valuation Assets as of June 30, 1994
(in thousands)**

	A	B	C
	Total Investment Gain/(Loss)	Gain/(Loss) Recognized in Prior Fiscal Years	Gain/(Loss) Recognized this Fiscal Year (A ÷ 5)
(1) Fiscal Year ending June 30, 1994	\$ (151,547)	\$ 0	\$ (30,309)
(2) Total Gain/(Loss) Recognized this Fiscal Year			(30,309)
(3) Expected Valuation Assets, June 30, 1994, (Item (7) from 1.1(c))			\$ 2,503,266
(4) Valuation Assets at June 30, 1994, (2) + (3), but not outside a corridor of 80% to 120% of the market value of assets			\$ 2,472,957*
Approximate Valuation Assets Investment Return Rate During the Year, Net of Administrative Expenses			7.68%

* Reflects a change in the asset valuation method. See Item (2) in the Analysis of the Valuation on page 5 for a full description of the change.

1.2 Actuarial Present Values as of June 30, 1994 (in thousands)

	<u>Normal Cost</u>	<u>Accrued Liabilities</u>
<u>Active Members</u>		
Retirement Benefits	\$ 60,092	\$ 1,009,893
Termination Benefits	3,119	36,098
Disability Benefits	1,432	35,071
Death Benefits	1,366	22,866
Return of Contributions	3,485	18,636
Medical Benefits	18,448	252,239
Indebtedness	<u>0</u>	<u>(32,900)</u>
Subtotal	\$ 87,942	\$ 1,341,903
<u>Inactive Members</u>		
Not Vested	\$ 0	\$ 12,870
Vested Terminations - Retirement Benefits	0	118,392
- Medical Benefits	0	47,884
Retirees & Beneficiaries - Retirement Benefits	0	1,060,252
- Medical Benefits	<u>0</u>	<u>180,108</u>
Subtotal	\$ 0	\$ 1,419,506
<u>Totals</u>	\$ 87,942	\$ 2,761,409

1.3 Development of Total Employer Contribution Rate - FY97 (in thousands)

Normal Cost Rate

(1)	Total Normal Cost	\$ 87,942
(2)	Total Salaries	476,098
(3)	Normal Cost Rate, (1) / (2)	18.47%
(4)	Average Member Contribution Rate	8.77%
(5)	Employer Normal Cost Rate, (3) - (4)	9.70%

Past Service Rate

(1)	Accrued Liability	\$ 2,761,409
(2)	Valuation Assets	2,472,957
(3)	Total Unfunded Liability, (1) - (2)	288,452
(4)	Amortization Factor (25 year)	11.528758
(5)	Past Service Cost, (3) / (4)	25,020
(6)	Total Salaries	476,098
(7)	Past Service Rate, (5) / (6)	5.26%

<u>Total Employer Contribution Rate</u>	14.96%
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1.4 Development of Actuarial Gain/(Loss) for FY94 (in thousands)

(1)	Unfunded Liability, June 30, 1993	\$ 168,374
(2)	Normal Cost for FY94	82,107
(3)	Interest on (1) and (2) at 9%	22,543
(4)	Employee Contributions for FY94	47,904
(5)	Employer Contributions for FY94	60,490
(6)	Interest on (4) and (5) at 9% for one-half year	4,878
(7)	Increase/(Decrease) due to assumption changes	103,791
(8)	Increase/(Decrease) due to asset valuation method change	(48,909)
(9)	Expected Unfunded Liability, June 30, 1994, (1) + (2) + (3) - (4) - (5) - (6) + (7) + (8)	214,634
(10)	Actual Unfunded Liability, June 30, 1994	288,452
(11)	Actuarial Gain/(Loss) for the Year, (9) - (10)	\$ (73,818)

1.5 Disclosure for G.A.S.B. Statement No. 5

State of Alaska - T.R.S.

Disclosure for G.A.S.B. Statement 5 ('000 Omitted)

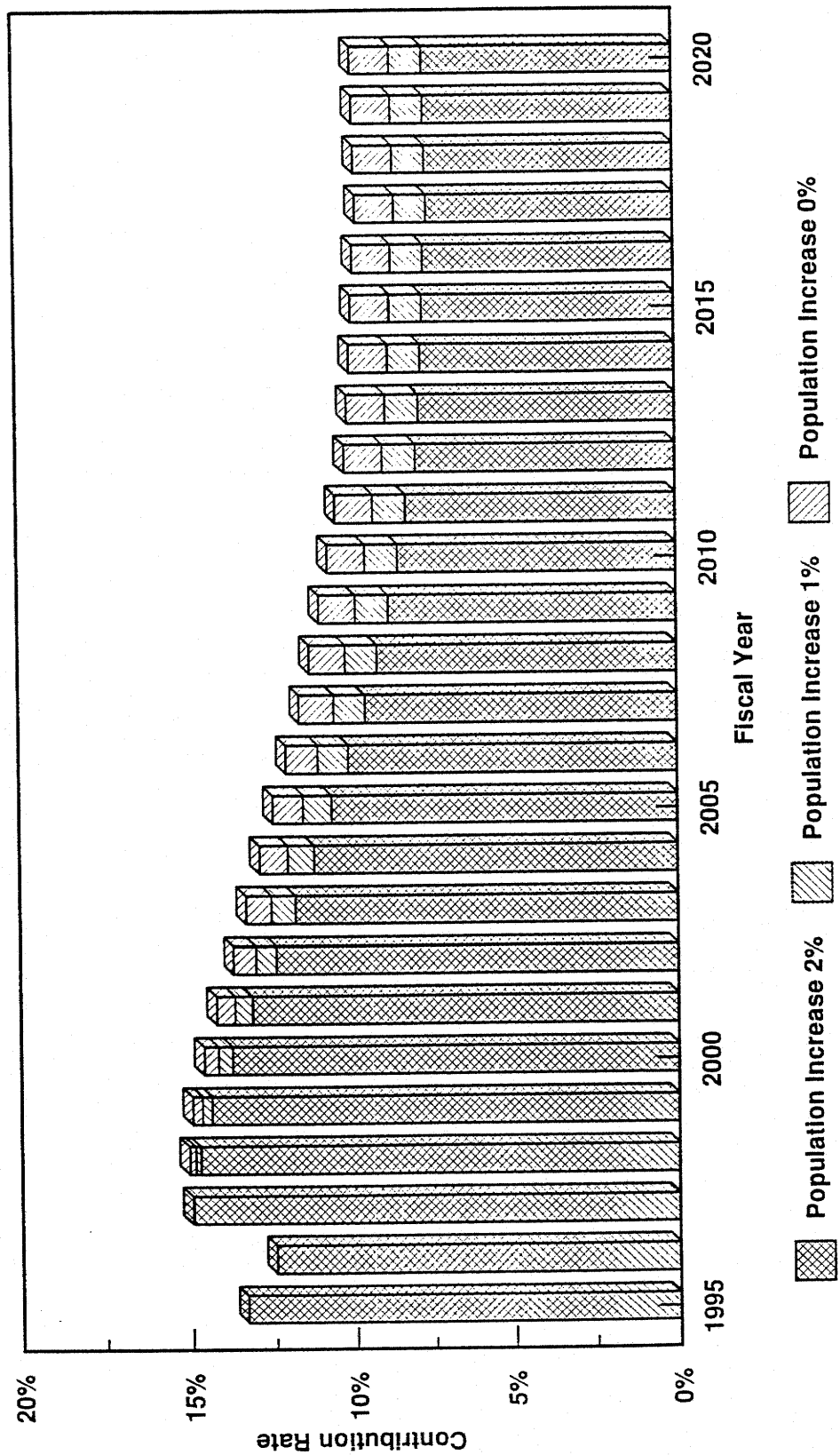
Totals For All Employers

***** Projected Benefit Obligation *****					
<u>Valuation Date</u>	<u>Current Retirees & Terminated</u>	***** Current Employees *****			<u>Total</u>
		<u>Contribs With Int</u>	<u>Vested</u>	<u>Employer Financed Non-Vested</u>	
June 30, 1987	\$ 578,468	\$ 210,493	\$ 353,326	\$ 68,622	\$ 1,210,909
June 30, 1988	688,090	228,217	381,726	49,826	1,347,859
June 30, 1989	779,296	253,436	436,431	88,480	1,557,643
June 30, 1990	940,475	269,491	587,835	97,229	1,895,030
June 30, 1991	1,056,453	293,136	598,527	127,289	2,075,405
June 30, 1992	1,110,981	341,204	655,821	123,740	2,231,746
June 30, 1993	1,223,220	370,667	746,208	89,361	2,429,456
June 30, 1994	1,419,506	398,990	870,309	72,604	2,761,409

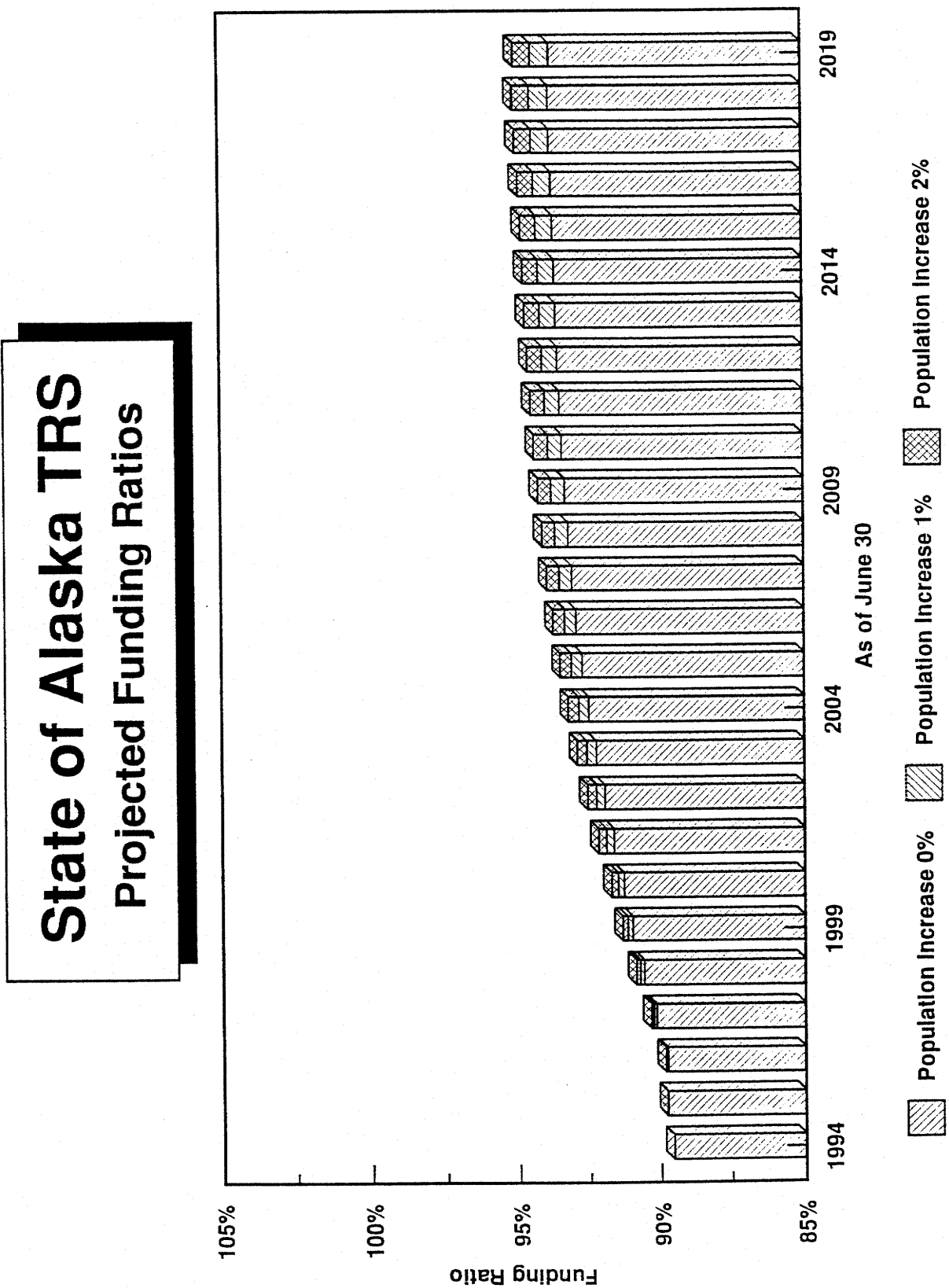
<u>Valuation Date</u>	***** Valuation Assets *****			***** Market Value Assets *****		
	<u>Net Assets Available For Benefits</u>	<u>Unfunded PBO</u>	<u>Assets as Percent of PBO</u>	<u>Net Assets Available For Benefits</u>	<u>Unfunded PBO</u>	<u>Assets as Percent of PBO</u>
June 30, 1987	\$ 1,225,009	\$ (14,100)	101%	\$ 1,303,464	\$ (92,555)	108%
June 30, 1988	1,331,905	15,954	99%	1,356,575	(8,716)	101%
June 30, 1989	1,480,389	77,254	95%	1,545,877	11,766	99%
June 30, 1990	1,662,242	232,788	88%	1,706,346	188,684	90%
June 30, 1991	1,779,579	295,826	86%	1,824,663	250,742	88%
June 30, 1992	2,001,864	229,882	90%	2,031,938	199,808	91%
June 30, 1993	2,261,082	168,374	93%	2,306,503	122,953	95%
June 30, 1994	2,472,957	288,452	90%	2,351,719	409,690	85%

1.6 Actuarial Projections

State of Alaska TRS Projected Contribution Rates



1.6 Actuarial Projections (continued)



William M. Mercer, Incorporated

1.6 Actuarial Projections (continued)

Table 1

State of Alaska IRS
Financial Projections ('000 omitted)

As of June 30	Investment Return			8.00%		Annual Population Increase										0.00%		Ending Asset Value
	Valuation Amounts on July 1			Surplus*		Flow Amounts During Following 12 Months										Net		
	Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employer Contribs	Employee Contribs	Total Contribs	Total Payments	Benefit Contribs	Investment Earnings	Net Contribs	Benefit Contribs				
1994	2,472,957	2,761,409	89.6%	(288,452)	476,098	13.36%	64,294	42,205	106,500	145,156	(38,656)	196,290	(38,656)	196,290	2,630,591			
1995	2,630,591	2,931,068	89.7%	(300,477)	486,395	12.48%	61,360	43,070	104,429	154,106	(49,677)	208,460	(49,677)	208,460	2,789,374			
1996	2,789,374	3,107,937	89.8%	(318,562)	496,931	14.96%	75,011	43,883	118,894	167,865	(48,971)	221,191	(48,971)	221,191	2,961,594			
1997	2,961,594	3,285,207	90.1%	(323,613)	506,107	15.04%	76,828	44,635	121,463	183,331	(61,868)	234,453	(61,868)	234,453	3,134,179			
1998	3,134,179	3,460,579	90.6%	(326,400)	515,287	14.95%	77,772	45,411	123,183	199,380	(76,198)	247,686	(76,198)	247,686	3,305,668			
1999	3,305,668	3,633,780	91.0%	(328,112)	525,046	14.60%	77,511	46,289	123,800	217,446	(93,646)	260,708	(93,646)	260,708	3,472,730			
2000	3,472,730	3,805,154	91.3%	(332,424)	536,634	14.22%	77,136	47,245	124,381	233,891	(109,510)	273,438	(109,510)	273,438	3,636,657			
2001	3,636,657	3,969,923	91.6%	(333,266)	548,222	13.71%	75,931	48,199	124,130	252,251	(128,121)	285,808	(128,121)	285,808	3,794,344			
2002	3,794,344	4,127,589	91.9%	(333,245)	559,810	13.32%	75,335	49,151	124,486	271,408	(146,921)	297,671	(146,921)	297,671	3,945,094			
2003	3,945,094	4,277,830	92.2%	(332,736)	571,398	12.90%	74,430	50,100	124,531	290,612	(166,081)	308,964	(166,081)	308,964	4,087,977			
2004	4,087,977	4,420,501	92.5%	(332,524)	582,986	12.48%	73,780	51,274	125,054	309,265	(184,211)	319,670	(184,211)	319,670	4,223,436			
2005	4,223,436	4,555,635	92.7%	(332,199)	599,801	12.07%	73,387	52,671	126,058	328,106	(202,048)	329,793	(202,048)	329,793	4,351,181			
2006	4,351,181	4,683,441	92.9%	(332,260)	616,616	11.64%	72,745	54,065	126,810	346,607	(219,797)	339,303	(219,797)	339,303	4,470,687			
2007	4,470,687	4,804,308	93.1%	(333,621)	633,431	11.31%	72,600	55,519	128,119	363,704	(235,584)	348,232	(235,584)	348,232	4,583,334			
2008	4,583,334	4,918,798	93.2%	(335,464)	650,246	11.01%	72,502	56,974	129,476	379,336	(249,860)	356,672	(249,860)	356,672	4,690,146			
2009	4,690,146	5,027,654	93.3%	(337,508)	667,061	10.73%	72,845	58,733	131,579	394,397	(262,818)	364,699	(262,818)	364,699	4,792,027			
2010	4,792,027	5,131,795	93.4%	(339,767)	690,936	10.47%	73,590	60,799	134,389	408,698	(274,309)	372,390	(274,309)	372,390	4,890,108			
2011	4,890,108	5,232,316	93.5%	(342,208)	714,811	10.18%	73,993	62,864	136,857	421,707	(284,850)	379,815	(284,850)	379,815	4,985,073			
2012	4,985,073	5,330,493	93.5%	(345,420)	738,687	10.09%	75,709	64,929	140,638	433,634	(292,996)	387,086	(292,996)	387,086	5,079,163			
2013	5,079,163	5,427,774	93.6%	(348,611)	762,562	10.00%	77,447	66,994	144,441	444,622	(300,181)	394,326	(300,181)	394,326	5,173,308			
2014	5,173,308	5,525,788	93.6%	(352,481)	786,437	9.93%	79,668	69,416	149,084	454,167	(305,083)	401,661	(305,083)	401,661	5,269,887			
2015	5,269,887	5,626,342	93.7%	(356,455)	818,550	9.86%	82,291	72,193	154,485	462,778	(308,293)	409,259	(308,293)	409,259	5,370,853			
2016	5,370,853	5,731,416	93.7%	(360,563)	850,662	9.76%	84,579	74,971	159,550	468,836	(309,286)	417,297	(309,286)	417,297	5,478,863			
2017	5,478,863	5,843,171	93.8%	(364,307)	882,774	9.79%	88,031	77,749	165,779	477,101	(311,322)	425,856	(311,322)	425,856	5,593,398			
2018	5,593,398	5,963,944	93.8%	(370,546)	914,887	9.83%	91,493	80,527	172,019	485,587	(313,568)	434,929	(313,568)	434,929	5,714,759			
2019	5,714,759	6,096,249	93.7%	(381,490)	946,999	9.86%	94,974	83,353	178,327	494,246	(315,919)	444,544	(315,919)	444,544	5,843,384			

* Surpluses reduce employer contributions over 5 years

* Deficits increase employer contributions over 25 years

1.6 Actuarial Projections (continued)

Table 2
State of Alaska IRS
Financial Projections ('000 omitted)

As of June 30	Investment Return 8.00%				Annual Population Increase 1.00%										Ending	
	Valuation Amounts on July 1				Flow Amounts During Following 12 Months										Asset	
	Total	Accrued	Funding	Surplus*	Total	Employer	Employer	Employee	Total	Benefit	Net	Investment	Earnings	Value		
	Assets	Liability	Ratio	(Deficit)	Salaries	Ctb Rate	Contribs	Contribs	Contribs	Payments	Contribs	Earnings				
1994	2,472,957	2,761,409	89.6%	(288,452)	476,098	13.36%	64,538	42,365	106,903	145,156	(38,253)	196,306		2,631,011		
1995	2,631,011	2,931,132	89.8%	(300,121)	490,042	12.48%	62,052	43,556	105,607	154,106	(48,499)	208,541		2,791,053		
1996	2,791,053	3,108,385	89.8%	(317,332)	504,377	14.96%	76,436	44,717	121,153	167,923	(46,771)	221,413		2,965,696		
1997	2,965,696	3,286,373	90.2%	(320,677)	517,718	14.88%	78,070	45,849	123,919	183,469	(59,550)	234,874		3,141,019		
1998	3,141,019	3,462,865	90.7%	(321,845)	531,456	14.66%	78,998	47,040	126,038	199,617	(73,579)	248,338		3,315,778		
1999	3,315,778	3,637,671	91.2%	(321,892)	546,197	14.18%	78,718	48,414	127,132	217,810	(90,678)	261,635		3,486,735		
2000	3,486,735	3,811,162	91.5%	(324,427)	564,209	13.67%	78,383	49,927	128,310	234,409	(106,100)	274,695		3,655,330		
2001	3,655,330	3,978,739	91.9%	(323,409)	582,222	13.04%	77,106	51,437	128,543	252,948	(124,405)	287,450		3,818,376		
2002	3,818,376	4,140,009	92.2%	(321,634)	600,234	12.55%	76,442	52,943	129,385	272,320	(142,935)	299,753		3,975,193		
2003	3,975,193	4,294,779	92.6%	(319,586)	618,247	12.03%	75,463	54,446	129,908	291,699	(161,790)	311,544		4,124,946		
2004	4,124,946	4,443,051	92.8%	(318,105)	636,259	11.53%	74,906	56,301	131,207	310,544	(179,337)	322,822		4,268,432		
2005	4,268,432	4,585,031	93.1%	(316,599)	662,504	11.06%	74,757	58,509	133,267	329,585	(196,318)	333,622		4,405,735		
2006	4,405,735	4,721,121	93.3%	(315,385)	688,750	10.57%	74,213	60,712	134,925	348,308	(213,383)	343,924		4,536,276		
2007	4,536,276	4,851,921	93.5%	(315,645)	714,995	10.21%	74,312	62,982	137,294	365,655	(228,361)	353,768		4,661,683		
2008	4,661,683	4,978,233	93.6%	(316,550)	741,240	9.87%	74,462	65,252	139,714	381,575	(241,861)	363,260		4,783,082		
2009	4,783,082	5,101,055	93.8%	(317,973)	767,486	9.57%	75,228	68,005	143,233	396,968	(253,735)	372,497		4,901,844		
2010	4,901,844	5,221,586	93.9%	(319,742)	804,891	9.30%	76,557	71,241	147,798	411,548	(263,850)	381,594		5,019,588		
2011	5,019,588	5,341,223	94.0%	(321,635)	842,297	8.98%	77,352	74,476	151,828	425,088	(273,260)	390,637		5,136,965		
2012	5,136,965	5,461,562	94.1%	(324,597)	879,702	8.88%	79,804	77,712	157,516	437,510	(279,995)	399,757		5,256,728		
2013	5,256,728	5,584,397	94.1%	(327,669)	917,108	8.79%	82,276	80,948	163,224	449,087	(285,863)	409,104		5,379,969		
2014	5,379,969	5,711,723	94.2%	(331,754)	954,514	8.72%	85,458	84,778	170,236	459,319	(289,083)	418,834		5,509,720		
2015	5,509,720	5,845,733	94.3%	(336,012)	1,005,671	8.65%	89,242	89,203	178,445	468,724	(290,279)	429,166		5,648,608		
2016	5,648,608	5,988,817	94.3%	(340,209)	1,056,829	8.54%	92,440	93,628	186,068	475,692	(289,624)	440,304		5,799,288		
2017	5,799,288	6,143,566	94.4%	(344,278)	1,107,987	8.57%	97,168	98,053	195,221	485,265	(290,043)	452,341		5,961,586		
2018	5,961,586	6,312,771	94.4%	(351,185)	1,159,145	8.60%	101,886	102,479	204,364	495,345	(290,981)	465,288		6,135,893		
2019	6,135,893	6,499,419	94.4%	(363,526)	1,210,303	8.62%	106,685	107,001	213,687	505,904	(292,218)	479,183		6,322,858		

* Surpluses reduce employer contributions over 5 years

* Deficits increase employer contributions over 25 years

1.6 Actuarial Projections (continued)

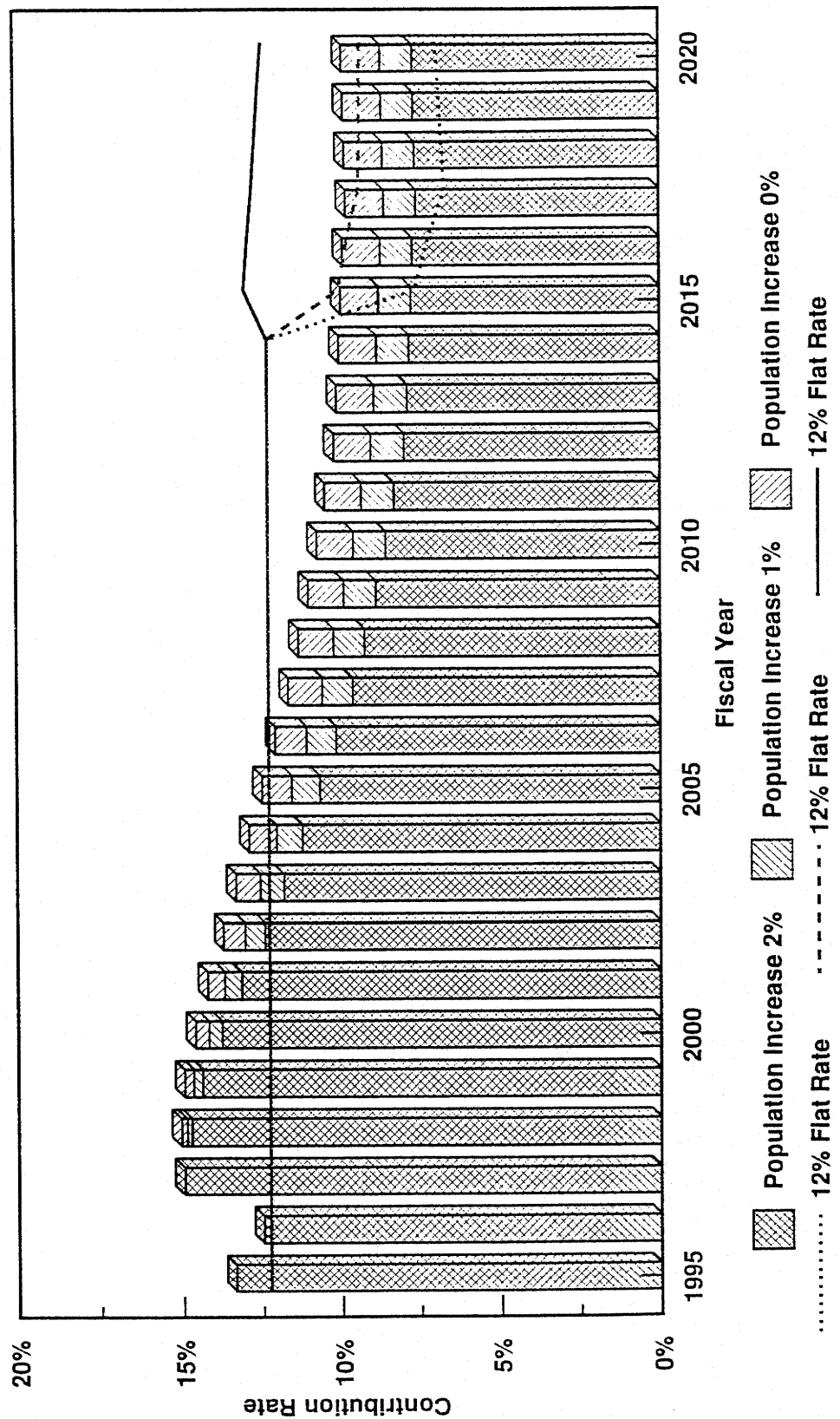
Table 3
State of Alaska TRS
Financial Projections ('000 omitted)

As of June 30	Investment Return 8.00%			Annual Population Increase 2.00%			Flow Amounts During Following 12 Months			Ending		
	Valuation Amounts on July 1			Total			Employer			Net		
	Total	Accrued	Funding	Salaries	Employer	Surplus*	Rate	Contribs	Total	Contribs	Earnings	Asset
	Assets	Liability	Ratio	(Deficit)	Ctb			Employer	Contribs	Benefit		Value
1994	2,472,957	2,761,409	89.6%	(288,452)	476,098	13.36%	64,779	42,523	107,302	145,156	(37,855)	2,631,425
1995	2,631,425	2,931,197	89.8%	(299,772)	493,641	12.48%	62,742	44,040	106,783	154,106	(47,323)	2,792,723
1996	2,792,723	3,108,836	89.8%	(316,113)	511,846	14.96%	77,877	45,559	123,436	167,980	(44,544)	2,969,814
1997	2,969,814	3,287,549	90.3%	(317,735)	529,509	14.72%	79,335	47,090	126,425	183,607	(57,182)	3,147,930
1998	3,147,930	3,465,185	90.8%	(317,255)	548,060	14.38%	80,245	48,722	128,968	199,859	(70,891)	3,326,037
1999	3,326,037	3,641,647	91.3%	(315,610)	568,144	13.77%	79,956	50,643	130,599	218,184	(87,585)	3,501,032
2000	3,501,032	3,817,263	91.7%	(316,232)	593,394	13.15%	79,672	52,784	132,456	234,944	(102,488)	3,674,526
2001	3,674,526	3,987,771	92.1%	(313,245)	618,643	12.40%	78,297	54,920	135,217	253,675	(120,458)	3,843,213
2002	3,843,213	4,152,871	92.5%	(309,659)	643,893	11.81%	77,519	57,051	134,571	273,277	(138,706)	4,006,415
2003	4,006,415	4,312,497	92.9%	(306,082)	669,143	11.21%	76,433	59,177	135,610	292,855	(157,244)	4,163,394
2004	4,163,394	4,466,813	93.2%	(303,419)	694,393	10.65%	75,985	61,836	137,821	311,917	(174,096)	4,315,406
2005	4,315,406	4,616,213	93.5%	(300,807)	732,039	10.14%	76,135	65,025	141,160	331,192	(190,032)	4,463,005
2006	4,463,005	4,761,323	93.7%	(298,318)	769,685	9.60%	75,678	68,206	143,884	350,176	(206,292)	4,605,501
2007	4,605,501	4,903,000	93.9%	(297,499)	807,331	9.21%	76,052	71,462	147,515	367,816	(220,301)	4,744,828
2008	4,744,828	5,042,332	94.1%	(297,504)	844,977	8.85%	76,483	74,719	151,202	384,079	(232,877)	4,882,221
2009	4,882,221	5,180,637	94.2%	(298,415)	882,623	8.54%	77,758	78,720	156,478	399,865	(243,387)	5,019,676
2010	5,019,676	5,319,465	94.4%	(299,789)	937,484	8.27%	79,803	83,465	163,268	414,997	(251,729)	5,159,453
2011	5,159,453	5,460,598	94.5%	(301,146)	992,345	7.94%	81,017	88,211	169,227	428,953	(259,726)	5,302,094
2012	5,302,094	5,606,048	94.6%	(303,954)	1,047,205	7.85%	84,358	92,956	177,314	441,972	(264,659)	5,451,016
2013	5,451,016	5,758,056	94.7%	(307,040)	1,102,066	7.77%	87,711	97,701	185,412	454,255	(268,842)	5,607,502
2014	5,607,502	5,919,097	94.7%	(311,596)	1,156,926	7.70%	92,083	103,417	195,500	465,308	(269,809)	5,775,500
2015	5,775,500	6,091,877	94.8%	(316,376)	1,234,219	7.65%	97,335	110,103	207,438	475,666	(268,228)	5,958,583
2016	5,958,583	6,279,330	94.9%	(320,746)	1,311,511	7.52%	101,590	116,789	218,379	483,728	(265,350)	6,159,307
2017	6,159,307	6,484,624	95.0%	(325,317)	1,388,803	7.56%	107,958	123,474	231,432	494,825	(263,593)	6,378,123
2018	6,378,123	6,711,157	95.0%	(333,034)	1,466,095	7.59%	114,277	130,160	244,437	506,756	(262,319)	6,615,561
2019	6,615,561	6,962,557	95.0%	(346,997)	1,543,388	7.62%	120,764	137,022	257,786	519,520	(261,734)	6,872,602

* Surpluses reduce employer contributions over 5 years
* Deficits increase employer contributions over 25 years

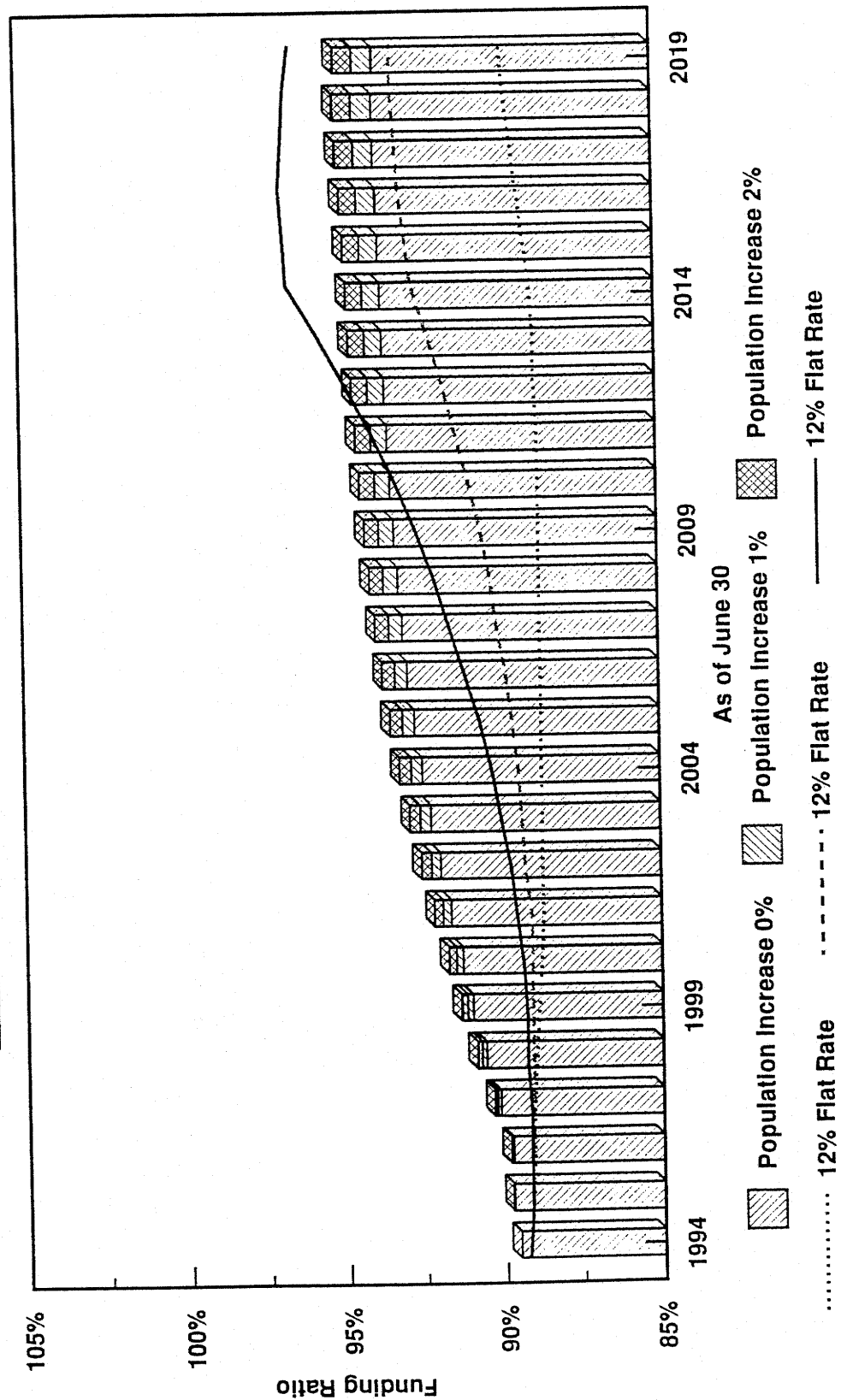
1.6 Actuarial Projections (continued)

State of Alaska TRS Projected Contribution Rates



1.6 Actuarial Projections (continued)

State of Alaska TRS Projected Funding Ratios



1.6 Actuarial Projections (continued)

Table 4

State of Alaska TRS
Financial Projections ('000 omitted)

As of June 30	Investment Return			8.00%			Annual Population Increase										0.00%			Ending Asset Value
	Valuation Amounts on July 1			1-			Flow Amounts During Following 12 Months			Net			Investment							
	Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employee Contribs	Employer Contribs	Total Benefit Payments	Net Contribs	Earnings	Contribs	Contribs	Earnings						
1994	2,472,957	2,761,409	89.6%	(288,452)	476,098	12.00%	57,750	42,205	99,955	145,156	(45,201)	196,029	2,623,784							
1995	2,623,784	2,931,068	89.5%	(307,284)	486,395	12.00%	59,000	43,070	102,069	154,106	(52,037)	207,821	2,779,569							
1996	2,779,569	3,107,937	89.4%	(328,368)	496,931	12.00%	60,182	43,883	104,065	167,865	(63,800)	219,813	2,935,582							
1997	2,935,582	3,285,207	89.4%	(349,625)	506,107	12.00%	61,284	44,635	105,919	183,331	(77,412)	231,750	3,089,920							
1998	3,089,920	3,460,579	89.3%	(370,659)	515,287	12.00%	62,420	45,411	107,831	199,380	(91,550)	243,532	3,241,902							
1999	3,241,902	3,633,780	89.2%	(391,878)	525,046	12.00%	63,701	46,289	109,990	217,446	(107,456)	255,054	3,389,500							
2000	3,389,500	3,805,154	89.1%	(415,654)	536,634	12.00%	65,091	47,245	112,337	233,891	(121,555)	266,298	3,534,243							
2001	3,534,243	3,969,923	89.0%	(435,680)	548,222	12.00%	66,482	48,199	114,681	251,251	(137,569)	277,237	3,673,910							
2002	3,673,910	4,127,589	89.0%	(453,679)	559,810	12.00%	67,873	49,151	117,024	271,408	(154,384)	287,737	3,807,263							
2003	3,807,263	4,277,830	89.0%	(470,567)	571,398	12.00%	69,263	50,100	119,363	290,612	(171,249)	297,731	3,933,746							
2004	3,933,746	4,420,501	89.0%	(486,755)	582,986	12.00%	70,967	51,274	122,241	309,265	(187,024)	307,219	4,053,941							
2005	4,053,941	4,555,635	89.0%	(501,694)	599,801	12.00%	72,985	52,671	125,656	328,106	(202,450)	316,217	4,167,708							
2006	4,167,708	4,683,441	89.0%	(515,733)	616,616	12.00%	75,003	54,065	129,067	346,607	(217,539)	324,715	4,274,884							
2007	4,274,884	4,804,308	89.0%	(529,424)	633,431	12.00%	77,021	55,519	132,540	363,704	(231,164)	332,744	4,376,464							
2008	4,376,464	4,918,798	89.0%	(542,334)	650,246	12.00%	79,038	56,974	136,012	379,336	(243,324)	340,384	4,473,524							
2009	4,473,524	5,027,654	89.0%	(554,130)	667,061	12.00%	81,480	58,733	140,213	394,397	(254,183)	347,715	4,567,055							
2010	4,567,055	5,131,795	89.0%	(564,739)	690,936	12.00%	84,345	60,799	145,143	408,698	(263,555)	354,822	4,658,323							
2011	4,658,323	5,232,316	89.0%	(573,993)	714,811	12.00%	87,210	62,864	150,074	421,707	(271,633)	361,801	4,748,491							
2012	4,748,491	5,330,493	89.1%	(582,002)	738,687	12.00%	90,075	64,929	155,004	433,634	(278,631)	368,734	4,838,594							
2013	4,838,594	5,427,774	89.1%	(589,180)	762,562	12.00%	92,940	66,994	159,934	444,622	(284,688)	375,700	4,929,607							
2014	4,929,607	5,525,788	89.2%	(596,182)	786,437	12.71%	101,962	69,416	171,378	454,167	(282,789)	383,057	5,029,875							
2015	5,029,875	5,626,342	89.4%	(596,467)	818,550	12.60%	105,130	72,193	177,323	462,778	(285,455)	390,972	5,135,392							
2016	5,135,392	5,731,416	89.6%	(596,024)	850,662	12.45%	107,875	74,971	182,846	468,836	(285,990)	399,392	5,248,794							
2017	5,248,794	5,843,171	89.8%	(594,377)	882,774	12.34%	110,891	77,749	188,640	477,101	(288,461)	408,365	5,368,697							
2018	5,368,697	5,963,944	90.0%	(595,246)	914,887	12.23%	113,844	80,527	194,370	485,587	(291,216)	417,847	5,495,328							
2019	5,495,328	6,096,249	90.1%	(600,921)	946,999	12.12%	116,758	83,353	200,111	494,246	(294,135)	427,861	5,629,053							

* Surpluses reduce employer contributions over 5 years
* Deficits increase employer contributions over 25 years

1.6 Actuarial Projections (continued)

Table 5
State of Alaska IRS
Financial Projections ('000 omitted)

As of June 30	Investment Return			8.00%			Annual Population Increase						1.00%			Ending Asset Value
	Valuation Amounts on July 1			Flow Amounts During Following 12 Months			Employee			Net			Investment Earnings			
	Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employee Contribs	Employer Contribs	Total Contribs	Benefit Payments	Contribs	Contribs				
1994	2,472,957	2,761,409	89.6%	(288,452)	476,098	12.00%	57,968	42,365	100,334	145,156	(44,823)	196,044	2,624,178			
1995	2,624,178	2,931,132	89.5%	(306,954)	490,042	12.00%	59,665	43,556	103,221	154,106	(50,885)	207,899	2,781,192			
1996	2,781,192	3,108,385	89.5%	(327,194)	504,377	12.00%	61,326	44,717	106,042	167,923	(61,881)	220,020	2,939,331			
1997	2,939,331	3,286,373	89.4%	(347,042)	517,718	12.00%	62,950	45,849	108,799	183,469	(74,670)	232,160	3,096,821			
1998	3,096,821	3,462,865	89.4%	(366,044)	531,456	12.00%	64,659	47,040	111,699	199,617	(87,919)	244,229	3,253,131			
1999	3,253,131	3,637,671	89.4%	(384,539)	546,197	12.00%	66,624	48,414	115,038	217,810	(102,772)	256,140	3,406,499			
2000	3,406,499	3,811,162	89.4%	(404,663)	564,209	12.00%	68,786	49,927	118,713	234,409	(115,697)	267,892	3,558,694			
2001	3,558,694	3,978,739	89.4%	(420,045)	582,222	12.00%	70,947	51,437	122,384	252,948	(130,564)	279,473	3,707,604			
2002	3,707,604	4,140,009	89.6%	(432,406)	600,234	12.00%	73,109	52,943	126,052	272,320	(146,268)	290,758	3,852,093			
2003	3,852,093	4,294,779	89.7%	(442,685)	618,247	12.00%	75,270	54,446	129,716	291,699	(161,983)	301,688	3,991,798			
2004	3,991,798	4,443,051	89.8%	(451,253)	636,259	12.00%	77,926	56,301	134,227	310,544	(176,317)	312,291	4,127,772			
2005	4,127,772	4,585,031	90.0%	(457,259)	662,504	12.00%	81,075	58,509	139,585	329,585	(190,000)	322,622	4,260,394			
2006	4,260,394	4,721,121	90.2%	(460,727)	688,750	12.00%	84,225	60,712	144,937	348,308	(203,371)	332,697	4,389,719			
2007	4,389,719	4,851,921	90.5%	(462,202)	714,995	12.00%	87,374	62,982	150,356	365,655	(215,299)	342,566	4,516,986			
2008	4,516,986	4,978,233	90.7%	(461,247)	741,240	12.00%	90,524	65,252	155,776	381,575	(225,799)	352,327	4,643,513			
2009	4,643,513	5,101,055	91.0%	(457,542)	767,486	12.00%	94,343	68,005	162,348	396,968	(234,620)	362,096	4,770,990			
2010	4,770,990	5,221,586	91.4%	(450,597)	804,891	12.00%	98,831	71,241	170,072	411,648	(241,576)	372,016	4,901,430			
2011	4,901,430	5,341,223	91.8%	(439,793)	842,297	12.00%	103,320	74,476	177,796	425,088	(247,291)	382,223	5,036,361			
2012	5,036,361	5,461,562	92.2%	(425,200)	879,702	12.00%	107,809	77,712	185,521	437,510	(251,990)	392,829	5,177,201			
2013	5,177,201	5,584,397	92.7%	(407,196)	917,108	12.00%	112,297	80,948	193,245	449,087	(255,842)	403,942	5,325,302			
2014	5,325,302	5,711,723	93.2%	(386,421)	954,514	9.71%	116,180	84,778	179,958	459,319	(279,361)	414,850	5,460,791			
2015	5,460,791	5,845,733	93.4%	(384,942)	1,005,671	9.41%	96,999	89,203	186,202	468,724	(282,522)	425,562	5,603,831			
2016	5,603,831	5,988,817	93.6%	(384,986)	1,056,829	9.04%	97,817	93,628	191,445	475,692	(284,246)	436,937	5,756,521			
2017	5,756,521	6,143,566	93.7%	(387,045)	1,107,987	8.99%	101,952	98,053	200,005	485,265	(285,260)	449,111	5,920,373			
2018	5,920,373	6,312,771	93.8%	(392,398)	1,159,145	8.97%	106,240	102,479	208,718	495,345	(286,627)	462,165	6,095,911			
2019	6,095,911	6,499,419	93.8%	(403,508)	1,210,303	8.96%	110,827	107,001	217,828	505,904	(288,076)	476,150	6,283,985			

* Surpluses reduce employer contributions over 5 years

* Deficits increase employer contributions over 25 years

1.6 Actuarial Projections (continued)

Table 6

State of Alaska TRS
Financial Projections ('000 omitted)

As of June 30	Investment Return			8.00%	Annual Population Increase										2.00%	Ending Asset Value
	Valuation Amounts on July 1			1-	Flow Amounts During Following 12 Months					Net				Investment Earnings		
	Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Contribs	Contribs				
1994	2,472,957	2,761,409	89.6%	(288,452)	476,098	12.00%	58,184	42,523	100,707	145,156	(44,449)	196,059	2,624,567			
1995	2,624,567	2,931,197	89.5%	(306,630)	493,641	12.00%	60,329	44,040	104,370	154,106	(49,736)	207,976	2,782,806			
1996	2,782,806	3,108,836	89.5%	(326,029)	511,846	12.00%	62,481	45,559	108,041	167,980	(59,940)	220,227	2,943,094			
1997	2,943,094	3,287,549	89.5%	(344,455)	529,509	12.00%	64,654	47,090	111,744	183,607	(71,863)	232,573	3,103,804			
1998	3,103,804	3,465,185	89.6%	(361,381)	548,060	12.00%	66,972	48,722	115,694	199,859	(84,165)	244,938	3,264,577			
1999	3,264,577	3,641,647	89.6%	(377,070)	568,144	12.00%	69,692	50,643	120,335	218,184	(97,849)	257,252	3,423,980			
2000	3,423,980	3,817,263	89.7%	(393,283)	593,394	12.00%	72,722	52,784	125,506	234,944	(109,438)	269,541	3,584,083			
2001	3,584,083	3,987,771	89.9%	(403,688)	618,643	12.00%	75,752	54,920	130,673	253,675	(123,002)	281,807	3,742,887			
2002	3,742,887	4,152,871	90.1%	(409,984)	643,893	12.00%	78,782	57,051	135,834	273,277	(137,443)	293,933	3,899,377			
2003	3,899,377	4,312,497	90.4%	(413,120)	669,143	12.00%	81,812	59,177	140,990	292,855	(151,865)	305,876	4,053,387			
2004	4,053,387	4,466,813	90.7%	(413,426)	694,393	12.00%	85,586	61,836	147,422	311,917	(164,495)	317,691	4,206,584			
2005	4,206,584	4,616,213	91.1%	(409,629)	732,039	12.00%	90,103	65,025	155,128	331,192	(176,064)	329,484	4,360,004			
2006	4,360,004	4,761,323	91.6%	(401,319)	769,685	12.00%	94,621	68,206	162,827	350,176	(187,349)	341,306	4,513,960			
2007	4,513,960	4,903,000	92.1%	(389,039)	807,331	12.00%	99,139	71,462	170,601	367,816	(197,215)	353,228	4,669,973			
2008	4,669,973	5,042,332	92.6%	(372,358)	844,977	12.00%	103,656	74,719	178,375	384,079	(205,704)	365,370	4,829,639			
2009	4,829,639	5,180,637	93.2%	(350,998)	882,623	12.00%	109,206	78,720	187,926	399,865	(211,939)	377,894	4,995,593			
2010	4,995,593	5,319,465	93.9%	(323,872)	937,484	12.00%	115,790	83,465	199,255	414,997	(215,742)	391,018	5,170,869			
2011	5,170,869	5,460,598	94.7%	(289,730)	992,345	12.00%	122,373	88,211	210,583	428,953	(218,370)	404,935	5,357,434			
2012	5,357,434	5,606,048	95.6%	(248,614)	1,047,205	12.00%	128,956	92,956	221,912	441,972	(220,060)	419,792	5,557,166			
2013	5,557,166	5,758,056	96.5%	(200,890)	1,102,066	12.00%	135,540	97,701	233,241	454,255	(221,014)	435,733	5,771,884			
2014	5,771,884	5,919,097	97.5%	(147,213)	1,156,926	7.24%	86,602	103,417	190,019	465,308	(275,289)	450,739	5,947,335			
2015	5,947,335	6,091,877	97.6%	(144,542)	1,234,219	6.81%	86,701	110,103	196,804	475,666	(278,862)	464,632	6,133,105			
2016	6,133,105	6,279,330	97.7%	(146,225)	1,311,511	6.29%	84,950	116,789	201,739	483,728	(281,989)	479,369	6,330,484			
2017	6,330,484	6,484,624	97.6%	(154,140)	1,388,803	6.36%	90,720	123,474	214,194	494,825	(280,631)	495,213	6,545,066			
2018	6,545,066	6,711,157	97.5%	(166,090)	1,466,095	6.44%	96,908	130,160	227,069	506,756	(279,687)	512,418	6,777,797			
2019	6,777,797	6,962,557	97.3%	(184,761)	1,543,388	6.55%	103,828	137,022	240,850	519,520	(278,670)	531,077	7,030,204			

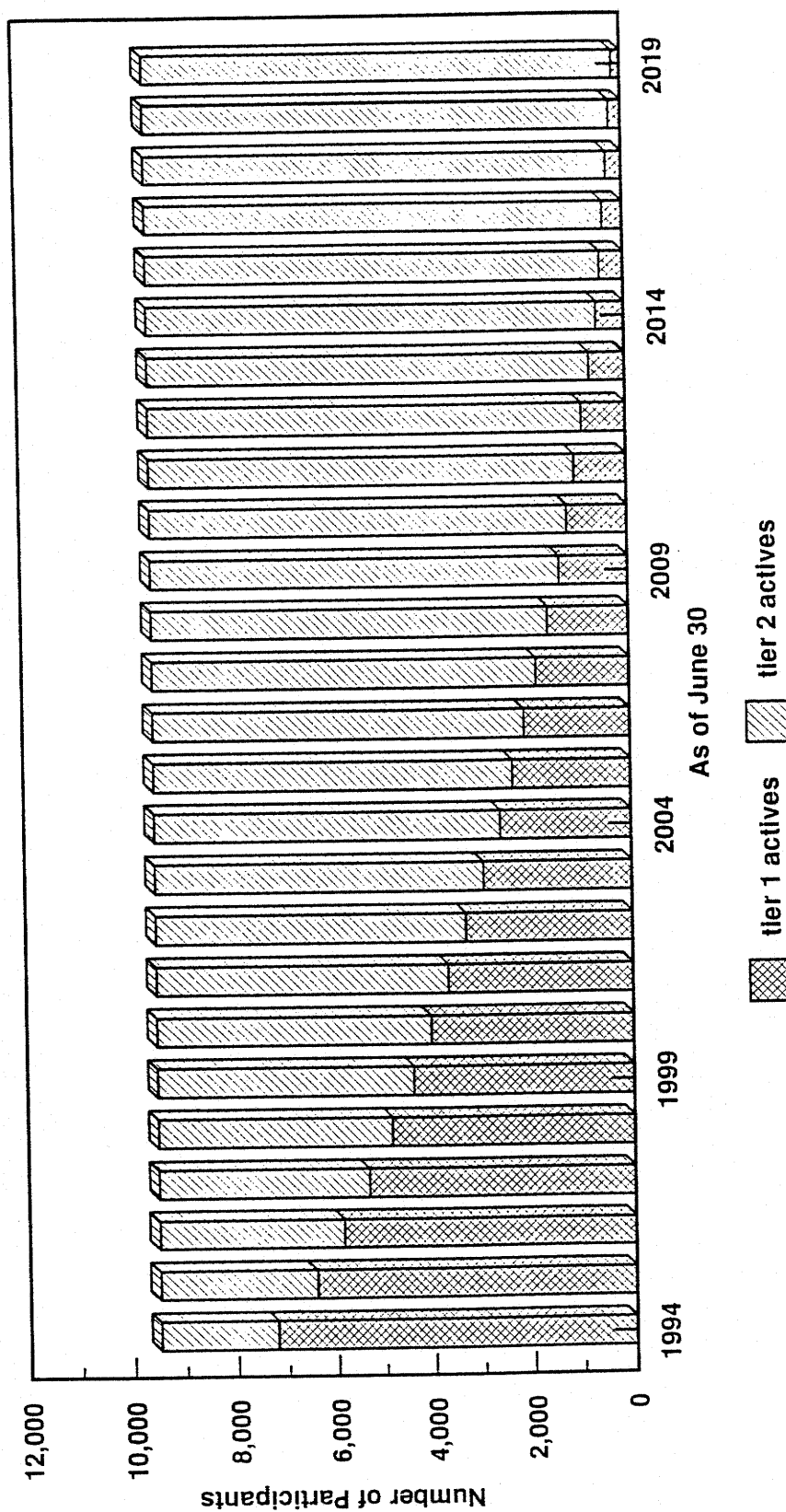
* Surpluses reduce employer contributions over 5 years

* Deficits increase employer contributions over 25 years

1.6 Actuarial Projections (continued)

State of Alaska TRS

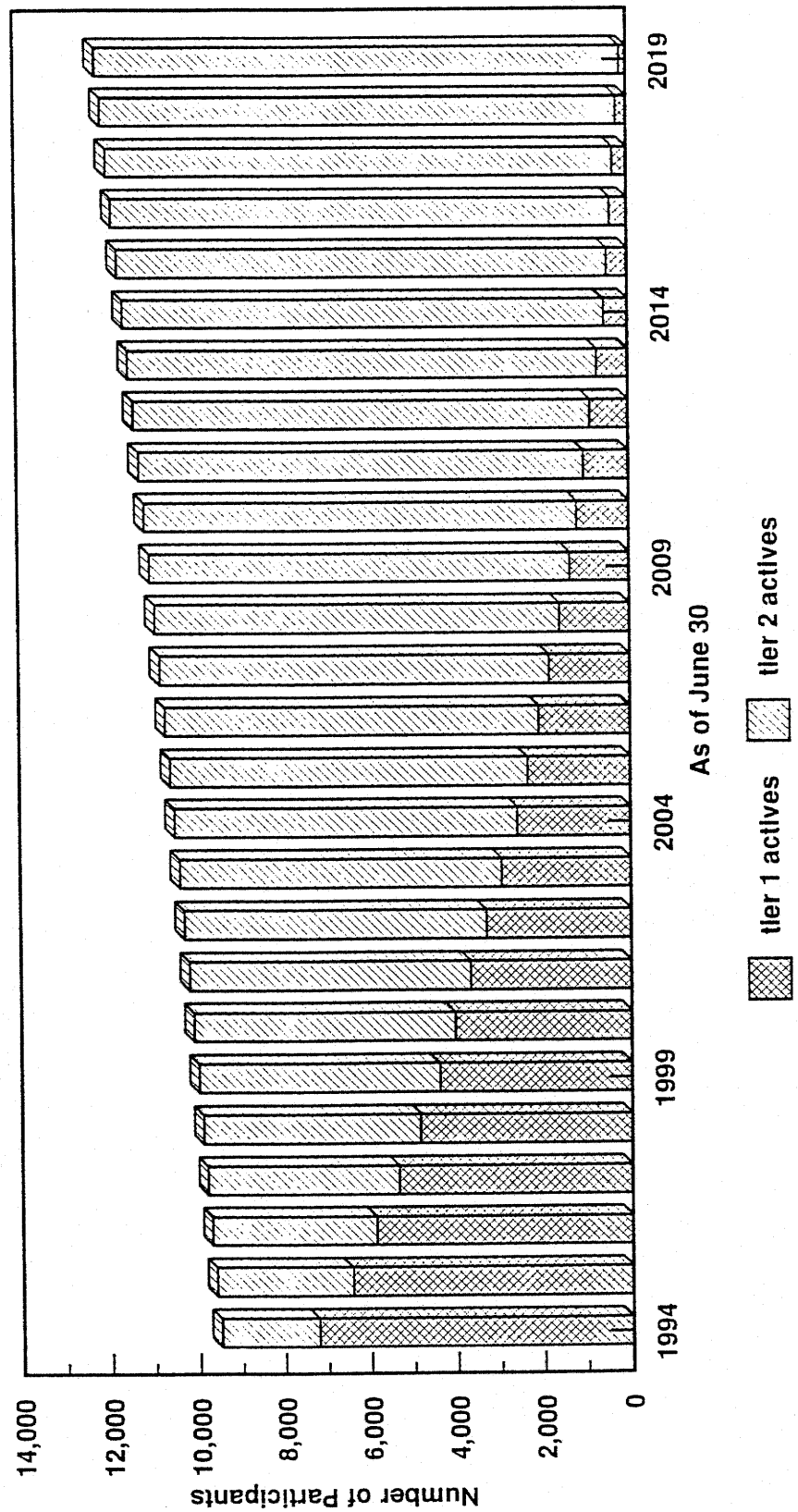
Projected Active Participant Count
Annual Population Increase of 0%



1.6 Actuarial Projections (continued)

State of Alaska TRS

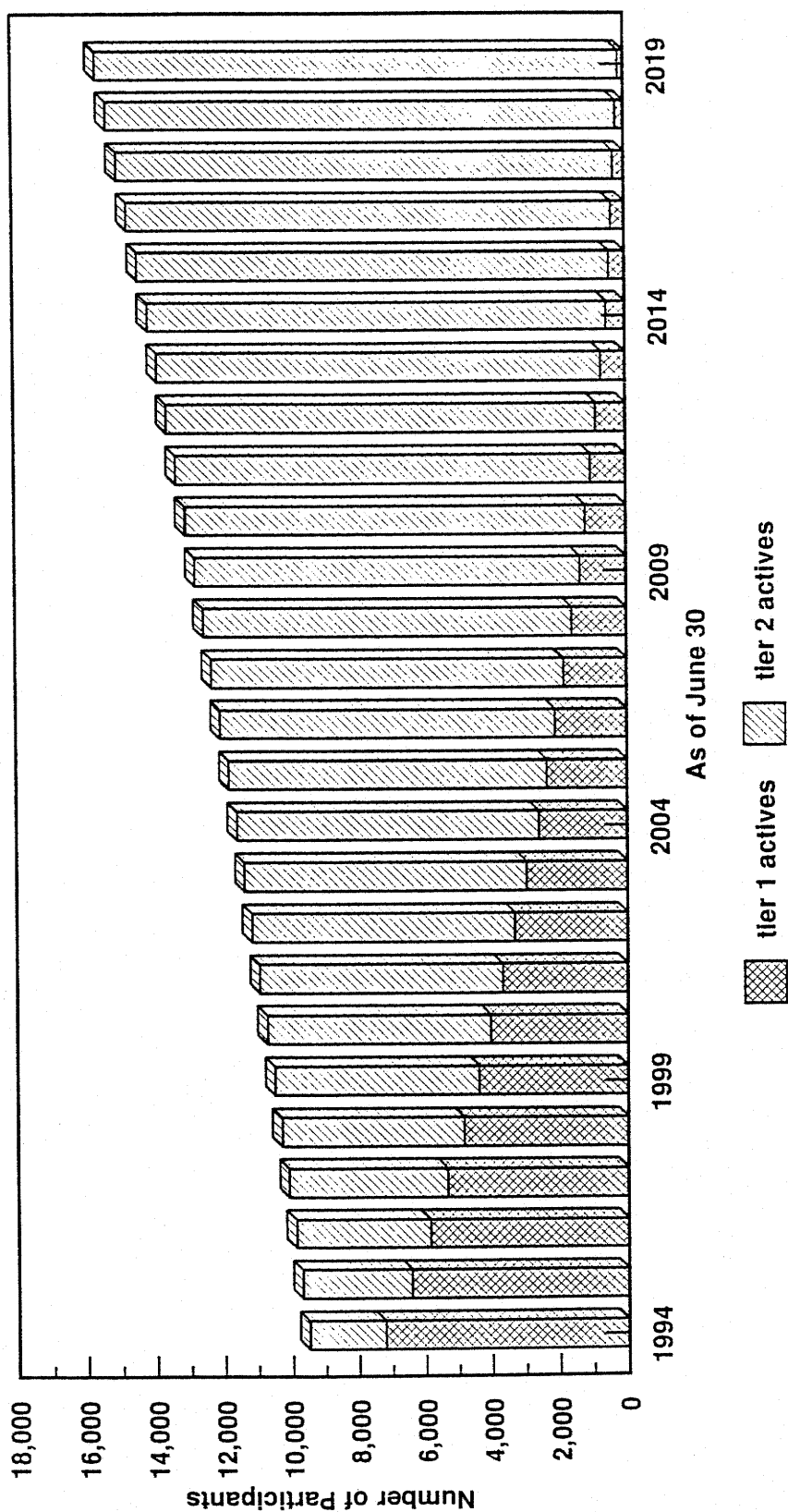
Projected Active Participant Count
Annual Population Increase of 1%



1.6 Actuarial Projections (continued)

State of Alaska TRS

Projected Active Participant Count
Annual Population Increase of 2%

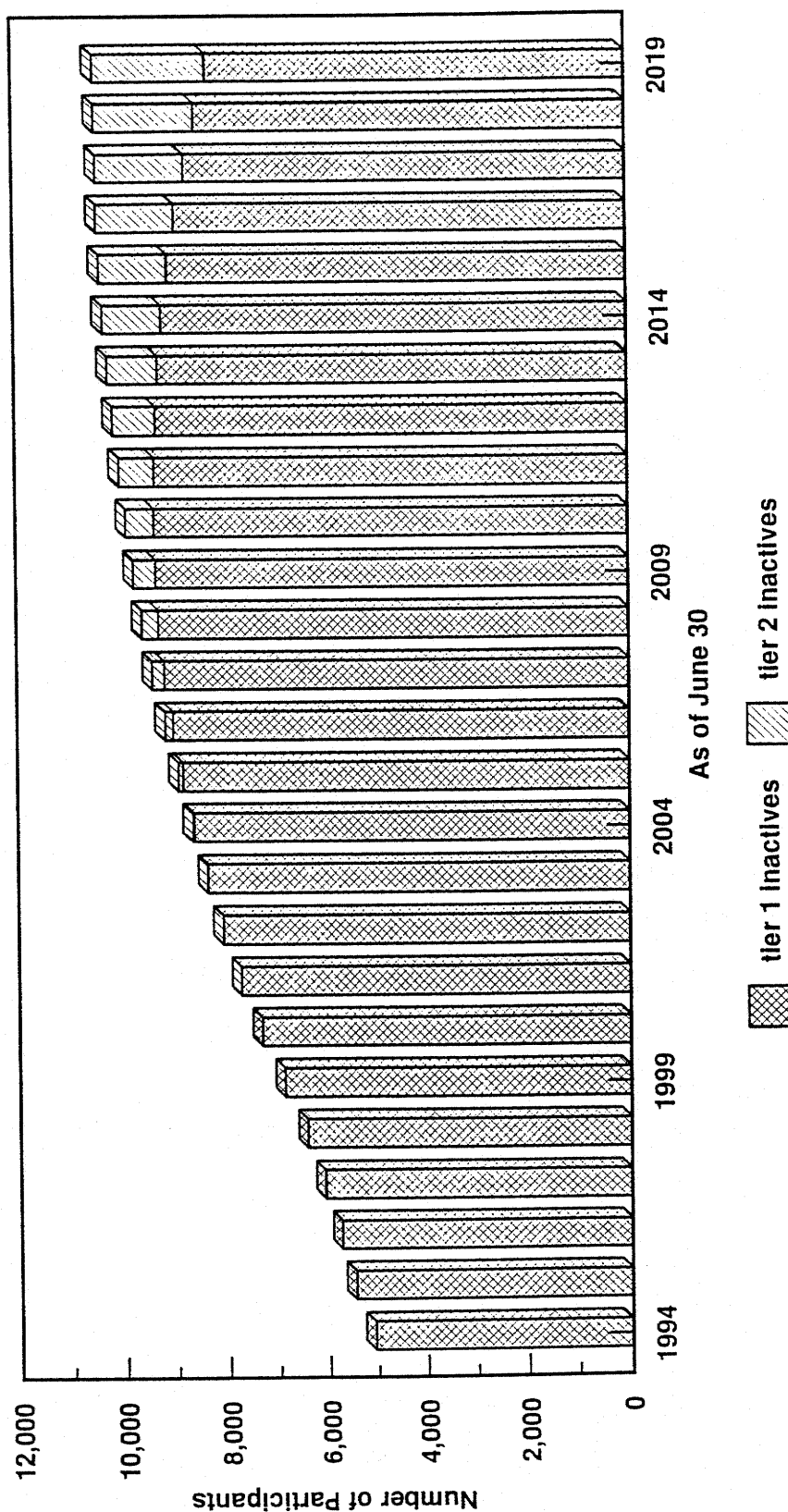


William M. Mercer, Incorporated

1.6 Actuarial Projections (continued)

State of Alaska TRS

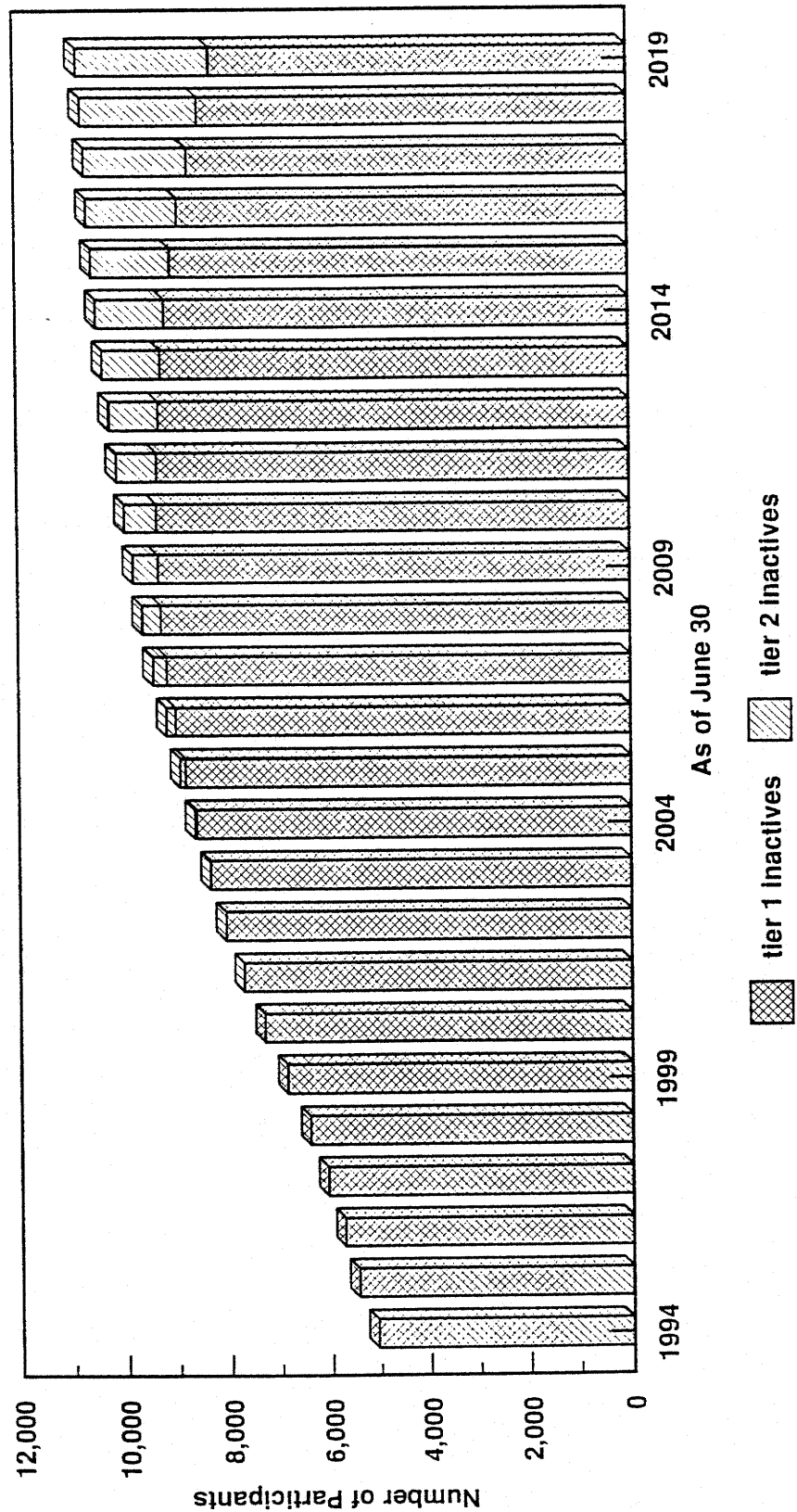
Projected Inactive Participant Count
Annual Population Increase of 0%



William M. Mercer, Incorporated

1.6 Actuarial Projections (continued)

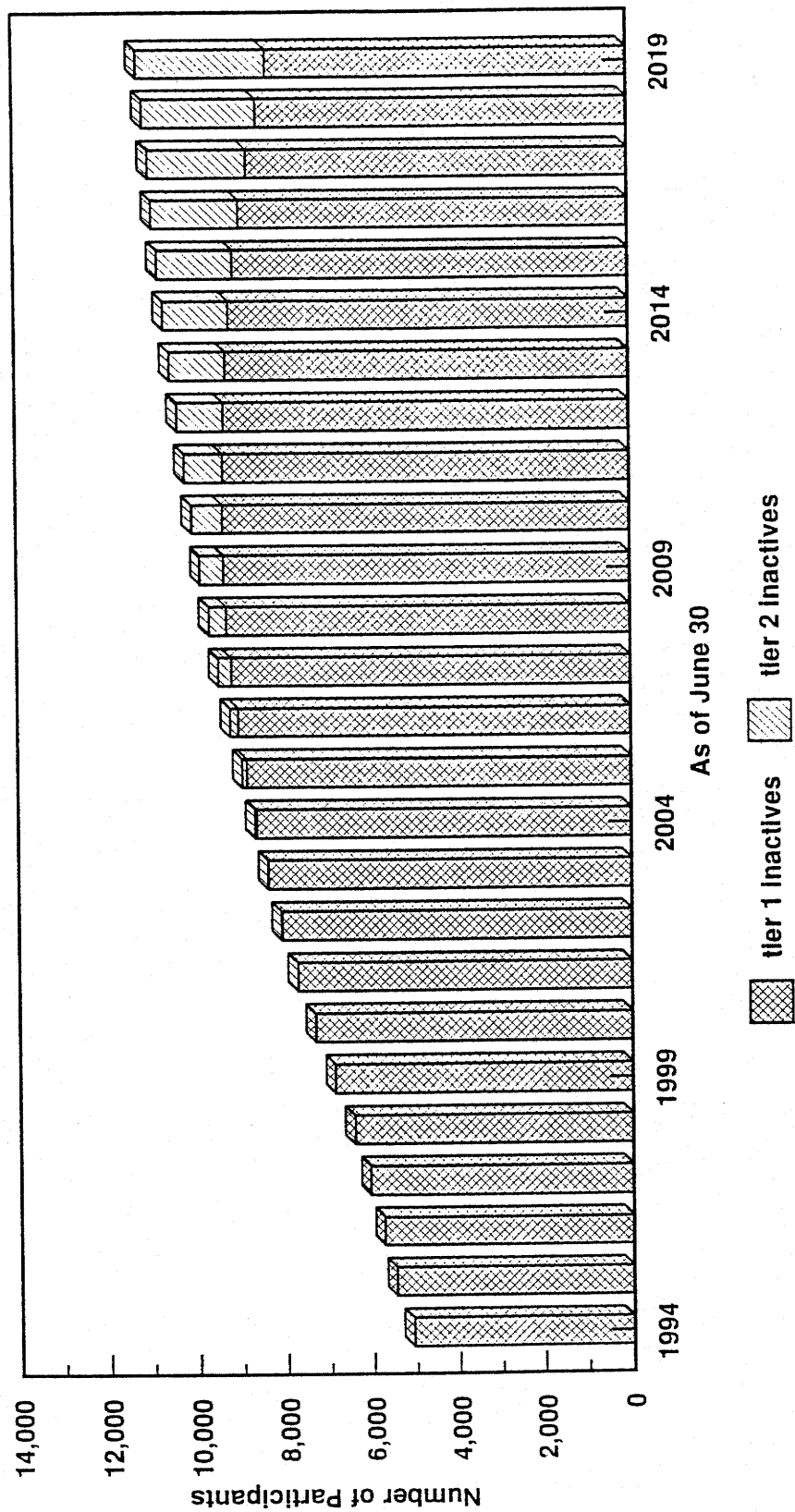
State of Alaska TRS Projected Inactive Participant Count Annual Population Increase of 1%



William M. Mercer, Incorporated

1.6 Actuarial Projections (continued)

State of Alaska TRS Projected Inactive Participant Count Annual Population Increase of 2%



Section 2

Basis of the Valuation

In this section, the basis of the valuation is presented and described. This information--the provisions of the plan and the census of participants--is the foundation of the valuation, since these are the present facts upon which benefit payments will depend.

A summary of plan provisions is provided in Section 2.1 and participant census information is shown in Section 2.2.

The valuation is based upon the premise that the plan will continue in existence, so that future events must also be considered. These future events are assumed to occur in accordance with the actuarial assumptions and concern such events as the earnings of the fund, the number of participants who will retire, die, terminate their services, their ages at such termination and their expected benefits.

The actuarial assumptions and the actuarial cost method, or funding method, which have been adopted to guide the sponsor in funding the plan in a reasonable and acceptable manner, are described in Section 2.3.

2.1 Summary of the Alaska Teachers' Retirement System

(1) Effective Date

July 1, 1955, with amendments through June 30, 1994. Chapter 97, 1990 Session Laws of Alaska, created a two-tier retirement system. Members who were first hired under the TRS before July 1, 1990, are eligible for different benefits than members hired after June 30, 1990.

(2) Administration of Plan

The Commissioner of Administration is responsible for administering the system. The Teachers' Retirement Board prescribes policies and regulations and performs other activities necessary to carry out the provisions of the system. The Alaska State Pension Investment Board, Department of Revenue, Treasury Division is responsible for investing TRS funds. The Attorney General represents the system in legal proceedings.

(3) Membership

Membership in the Alaska TRS is mandatory for the following employees:

- certificated full-time and part-time elementary and secondary teachers, certificated school nurses, and certificated employees in positions requiring teaching certificates;
- the Commissioner of the Alaska Department of Education and certificated supervisors employed by the Department of Education in permanent positions requiring teaching certificates;
- University of Alaska full-time and part-time teachers, and full-time administrative employees in positions requiring academic standing if approved by the TRS administrator;
- certain full-time or part-time teachers of Alaska Native language or culture who have elected to be covered under the TRS;
- members on approved sabbatical leave under AS 14.20.310; and
- certain State legislators who have elected to be covered under the TRS.

Employees participating in the University of Alaska's Optional Retirement Plan or other retirement plans funded by the State are not covered by the TRS.

Employees who work half-time in the TRS and Public Employees' Retirement System (PERS) simultaneously are eligible for half-time TRS and PERS credit.

(4) Credited Service

TRS members receive a year of membership credit if they work a minimum of 172 days during the school year (July 1 through June 30 of the following year). Fractional credit is determined based on the number of days worked. Members receive one-half membership credit for each day of part-time service. Credit is granted for all Alaskan public school service.

Members may claim other types of service, including:

- Outside teaching service in out-of-state schools or Alaska private schools (not more than ten years may be claimed);
- Military service (not more than five years of military service or ten years of combined outside and military service may be claimed);
- Alaska Bureau of Indian Affairs (BIA) service;
- Retroactive Alaskan service that was not creditable at the time it occurred, but later became creditable because of legislative change;
- Unused sick leave credit after members retire; and
- Leave of absence without pay.

Except for retroactive Alaska service that occurred before July 1, 1955, and unused sick leave, contributions are required for all claimed service.

Members receiving TRS disability benefits continue to earn TRS credit while disabled.

(5) Employer Contributions

TRS employers contribute the amounts required, in addition to employees' contributions, to fund the benefits of the system.

(6) Member Contributions

Mandatory Contributions: Members are required to contribute 8.65% of their base salaries. Members' contributions are deducted from gross salaries before federal income taxes are withheld.

Contributions for Claimed Service: Member contributions are also required for most of the claimed service described in (4) above.

1% Supplemental Contributions: Members who joined the system before July 1, 1982, and elected to participate in the supplemental contributions provision, are required to contribute an additional 1% of their salaries. Under the supplemental provision, an eligible spouse or dependent child will receive a survivor's allowance or spouse's pension if the member dies (see (10) below).

Interest: Members' contributions earn 4.5% interest, compounded annually on June 30.

Refund of Contributions: Terminated members may receive refunds of their member contribution accounts, which includes their mandatory contributions, indebtedness payments, and interest earned. Terminated members' accounts may be attached to satisfy claims under Alaska Statute 09.38.065, federal income tax levies, and valid qualified domestic relations orders.

Reinstatement of Contributions: Refunded accounts and the corresponding TRS service may be reinstated upon reemployment in the TRS. Accounts attached to satisfy claims under Alaska Statute 09.38.065 or a federal tax levy may be reinstated at any time. Interest accrues on refunds until paid in full or members retire.

(7) Retirement Benefits

Eligibility:

- (a) Members, including deferred vested members, are eligible for normal retirement at age 60*, or early retirement at age 55, if they have at least:
 - (i) eight years of paid-up membership service;
 - (ii) 15 years of paid-up creditable service, the last five years which are membership service, and they were first hired under the TRS before July 1, 1975;
 - (iii) five years of paid-up membership service and three years of paid-up Alaska Bureau of Indian Affairs service;
 - (iv) 12 years of combined part-time and full-time paid-up membership service; or
 - (v) two years of paid-up membership service if they are vested in the Public Employees' Retirement System (PERS).

* Members participating before July 1, 1990, are eligible for normal retirement at age 55 or early retirement at age 50.

(b) Members may retire at any age when they have:

- (i) 25 years of paid-up creditable service, the last five years which are membership service;
- (ii) 20 years of paid-up membership service;
- (iii) 20 years of combined paid-up membership and Alaska Bureau of Indian Affairs service, the last five years which are membership service; or
- (iv) 20 years of combined paid-up part-time and full-time membership service.

Benefit Type: Lifetime benefits are paid to members. Eligible members may receive normal, unreduced benefits when they (1) reach normal retirement age and complete the service required; or (2) satisfy the minimum service requirements to retire at any age under (b) above. Members may receive early, actuarially reduced benefits when they reach early retirement age and complete the service required.

Members may also select joint and survivor options. Under those options and early retirement, benefits are actuarially adjusted so that members receive the actuarial equivalents of their normal benefit amounts.

Benefit Calculation: Retirement benefits are calculated by multiplying the average base salary (ABS) times the total TRS service times the percentage multiplier. The ABS is determined by averaging the salaries earned during the three highest school years. Members must earn at least 115 days of credit in a school year to include it in the ABS calculation. The TRS pays a minimum benefit of \$25.00 per month for each year of service when the calculated benefit is less.

The percentage multipliers are 2% for the first 20 years and 2.5% for all remaining service. Service before July 1, 1990, is calculated at 2%.

Indebtedness: Members who terminate and refund their TRS contributions are not eligible to retire, unless they return to TRS employment and pay back their refunds, plus interest, or accrue additional service which qualifies them for retirement. TRS refunds must be paid in full if the corresponding service is to count toward the minimum service requirements for retirement. Refunded TRS service is included in total service for the purpose of calculating retirement benefits. However, when refunds are not completely paid before retirement, benefits are actuarially reduced for life.

(8) Reemployment of Retired Members

Retirement benefits are suspended while retired members are reemployed under the TRS. During reemployment, members earn additional TRS service and contributions are withheld from their wages.

Members retired under the Retirement Incentive Programs (RIPs) who return to employment under the TRS, Public Employees' Retirement System (PERS), or the University of Alaska's Optional Retirement Plan will:

- (a) forfeit the three years of incentive credits that they received;
- (b) owe the TRS 110% of the benefits that they received under the RIP, which may include costs for health insurance, excluding amounts that they paid to participate; and
- (c) be charged 7% interest from the date that they are reemployed until their indebtedness is paid in full or they retire again. If the indebtedness is not completely paid, future benefits will be actuarially reduced for life.

(9) Disability Benefits

Monthly disability benefits are paid to permanently disabled members until they die, recover or become eligible for normal retirement. To be eligible, members must have at least five years of paid-up membership service.

Disability benefits are equal to 50% of the member's base salary at the time of disability. The benefit is increased by 10% of the base salary for each minor child, up to a maximum of 40%. Members continue to earn TRS service until eligible for normal retirement.

Members are appointed to normal retirement on the first of the month after they become eligible.

(10) Death Benefits

Monthly death benefits may be paid to a spouse or dependent children upon the death of a member. If monthly benefits are not payable under the supplemental contributions provision or occupational and nonoccupational death provisions, the designated beneficiary receives the lump sum benefit described below.

Occupational Death: When an active member dies from occupational causes, a monthly survivor's pension may be paid to the spouse, unless benefits are payable under the supplemental contributions provision (below). The pension equals 40% of the member's base salary on the date of death or disability, if earlier. If there is no spouse, the pension may be paid to the member's dependent children. On the member's normal retirement date, the benefit converts to a normal retirement benefit. The normal benefit is based on the member's average base salary as existed on the date of death and service, including service accumulated from the date of the member's death to the normal retirement date.

Nonoccupational Death: When a vested member dies from nonoccupational causes, the surviving spouse may elect to receive a monthly 50% joint and survivor benefit or a lump sum benefit, unless benefits are payable under the supplemental contributions provision (below). The monthly benefit is calculated on the member's average base salary and TRS service accrued at the time of death.

Lump Sum Benefit: Upon the death of an active member who has less than one year of service or an inactive member who is not vested, the designated beneficiary receives the member's contribution account, which includes mandatory contributions, indebtedness payments, and interest earned. Any supplemental contributions will also be refunded. If the member has more than one year of TRS service, the beneficiary also receives \$1,000 and \$100 for each year of TRS service, up to a maximum of \$3,000. An additional \$500 may be payable if the member is survived by dependent children.

Supplemental Contributions Provision: Members are eligible for supplemental coverage if they joined the TRS before July 1, 1982, elected to participate in the supplemental provision, and made the required contributions. A survivor's allowance or spouse's pension (below) may be payable if the member made supplemental contributions for at least one year and dies while in membership service or while disabled under the TRS. In addition, the allowance and pension may be payable if the member dies while retired or in deferred vested status if supplemental contributions were made for at least five years.

- (a) Survivor's Allowance: If the member is survived by dependent children, the surviving spouse and dependent children are entitled to a survivor's allowance. The allowance for the spouse is equal to 35% of the member's base salary at the time of death or disability, plus 10% for each dependent child up to a maximum of 40%. The allowance terminates and a spouse's pension becomes payable when there is no longer an eligible dependent child.
- (b) Spouse's Pension: The spouse's pension is equal to 50% of the retirement benefit that the deceased member was receiving or would have received if retired at the time of death. The spouse's pension begins on the first of the month after the member's death or termination of the survivor's allowance.

Death After Retirement: If a joint and survivor option was selected at retirement, the eligible spouse receives continuing, lifetime monthly benefits after the member dies. A survivor's allowance or spouse's pension may be payable if the member participated in the supplemental contributions provision. If a joint and survivor option was not selected and benefits are not payable under the supplemental contributions provision, the designated beneficiary receives the member's contribution account, less any benefits already paid.

(11) Post Retirement Pension Adjustments

Post retirement pension adjustments (PRPAs) are granted annually to eligible benefit recipients when the consumer price index (CPI) increases during the preceding calendar year. PRPAs are calculated by multiplying the recipient's base benefit, including past PRPAs, times:

- (a) 75% of the CPI increase in the preceding calendar year or 9%, whichever is less, if the recipient is at least age 65 or on TRS disability; or
- (b) 50% of the CPI increase in the preceding calendar year or 6%, whichever is less, if the recipient is at least age 60, or under age 60 if the recipient has been receiving benefits for at least eight years.

Ad hoc PRPAs, up to a maximum of 4%, may be granted to eligible recipients who were first hired before July 1, 1990, if the CPI increases and the financial condition of the fund will permit an increase.

(12) Alaska Cost of Living Allowance

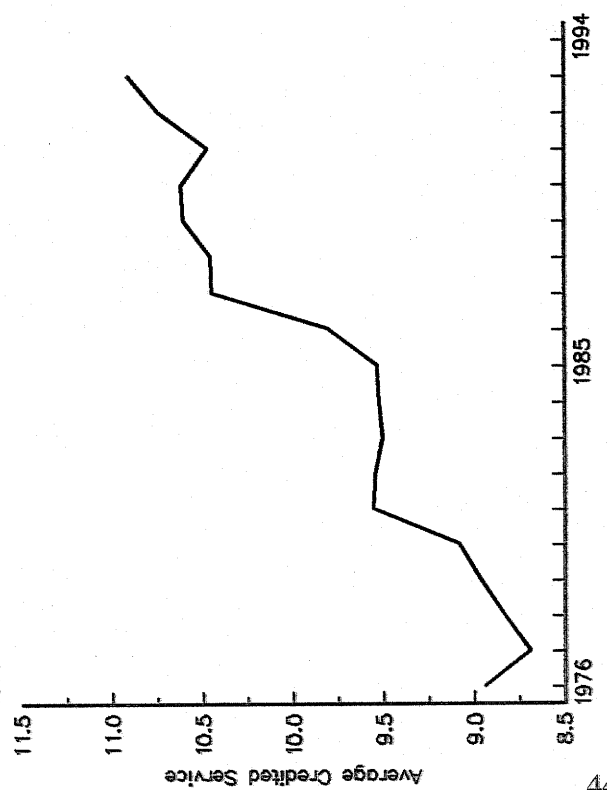
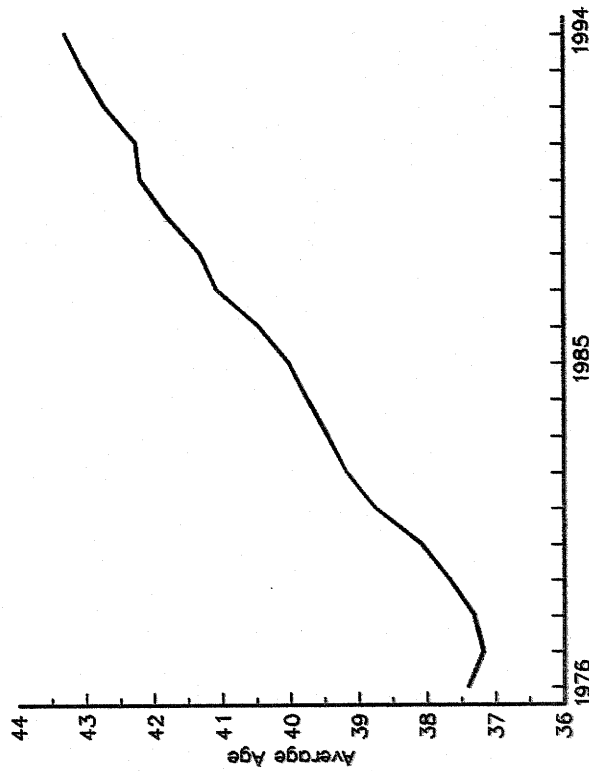
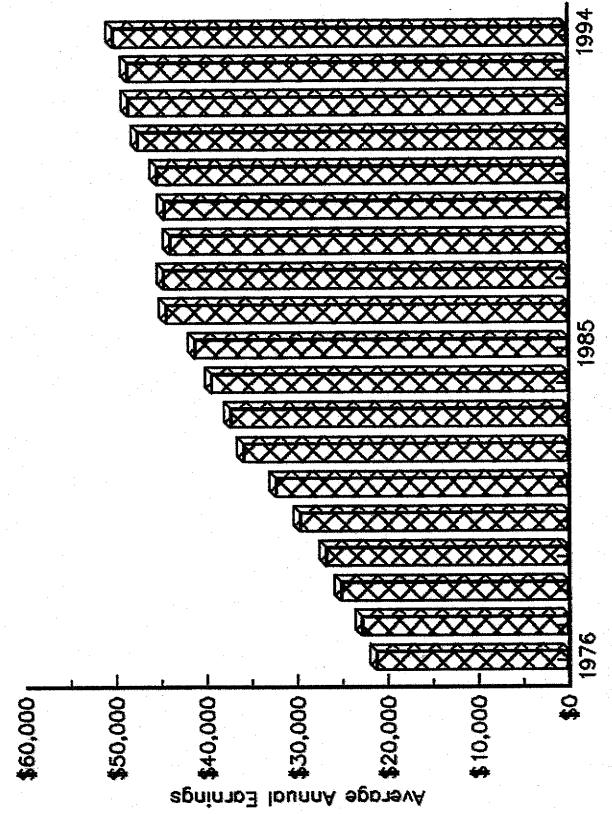
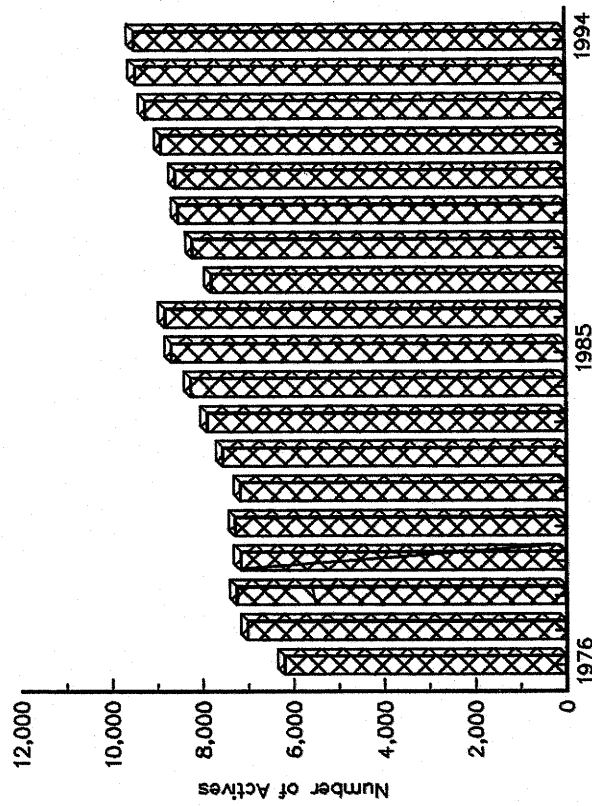
Eligible benefit recipients who reside in Alaska receive an Alaska cost of living allowance (COLA) equal to 10% of their base benefits. The following benefit recipients are eligible:

- (a) members who were first hired under the TRS before July 1, 1990, and their survivors;
- (b) members who were first hired under the TRS after June 30, 1990, and their survivors if they are at least age 65; and
- (c) all disabled members.

2.2(a) Participant Census Information as of June 30

	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Active Members					
(1) Number	8,586	8,903	9,238	9,459	9,489
(2) Average Age	42.21	42.28	42.74	43.06	43.32
(3) Average Credited Service	10.62	10.48	10.75	10.92	11.06
(4) Average Annual Salary	\$ 45,388	\$ 47,473	\$ 48,515	\$ 48,604	\$ 50,174
(5) Number Vested	4,890	5,069	5,422	5,604	5,562
(6) Percent Who Are Vested	57.0%	57.0%	58.7%	59.2%	58.6%
Retirees and Beneficiaries					
(1) Number	3,184	3,544	3,602	3,891	4,134
(2) Average Age	62.45	61.64	61.97	62.47	62.73
(3) Average Monthly Benefit:					
Base	\$ 1,491	\$ 1,587	\$ 1,601	\$ 1,598	\$ 1,643
C.O.L.A.	\$ 100	\$ 105	\$ 102	\$ 98	\$ 102
P.R.P.A.	\$ 262	\$ 238	\$ 297	\$ 280	\$ 283
Adjustment	N/A	N/A	N/A	\$ 0	\$ 0
Total	\$ 1,853	\$ 1,930	\$ 2,000	\$ 1,976	\$ 2,028
Vested Terminations					
(1) Number	816	645	710	823	930
(2) Average Age	46.75	45.57	46.22	47.51	48.10
(3) Average Monthly Benefit	\$ 1,244	\$ 897	\$ 1,087	\$ 1,236	\$ 1,294
Non-Vested Terminations With Account Balances					
(1) Number	985	1,003	1,057	1,013	1,090
(2) Average Account Balance	\$ 10,244	\$ 10,270	\$ 10,411	\$ 11,208	\$ 11,807

State of Alaska - TRS Actives



2.2(b) Distribution of Active Participants

----- Annual Earnings By Age -----

Age Groups	Number of People	Total Annual Earnings	Average Annual Earnings
0-19	0	\$ 0	\$ 0
20-24	58	1,902,801	32,807
25-29	595	21,587,148	36,281
30-34	949	38,811,288	40,897
35-39	1,449	65,718,140	45,354
40-44	2,275	114,745,716	50,438
45-49	2,244	121,633,824	54,204
50-54	1,292	74,379,656	57,569
55-59	446	26,412,790	59,222
60-64	144	8,678,964	60,271
65-69	29	1,789,167	61,695
70-74	6	320,721	53,454
75-79	2	117,534	58,767
80+	0	0	0
Total	9,489	\$ 476,097,749	\$ 50,174

----- Annual Earnings By Credited Service -----

Years of Service	Number of People	Total Annual Earnings	Average Annual Earnings
0	158	\$ 5,820,369	\$ 36,838
1	621	22,729,436	36,601
2	598	22,907,414	38,307
3	601	24,811,028	41,283
4	656	27,982,454	42,656
0- 4	2,634	104,250,701	39,579
5- 9	2,101	100,552,552	47,859
10-14	2,286	124,253,958	54,354
15-19	1,554	90,709,104	58,371
20-24	679	41,243,684	60,742
25-29	207	13,041,323	63,002
30-34	24	1,799,383	74,974
35-39	4	247,044	61,761
40+	0	0	0
Total	9,489	\$ 476,097,749	\$ 50,174

Years of Credited Service By Age

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
0-19	0	0	0	0	0	0	0	0	0	0
20-24	58	0	0	0	0	0	0	0	0	58
25-29	538	57	0	0	0	0	0	0	0	595
30-34	533	341	75	0	0	0	0	0	0	949
35-39	475	461	440	73	0	0	0	0	0	1,449
40-44	468	522	712	498	75	0	0	0	0	2,275
45-49	328	402	590	577	302	45	0	0	0	2,244
50-54	154	202	321	289	220	101	5	0	0	1,292
55-59	56	74	104	91	58	46	14	3	0	446
60-64	23	35	34	18	18	12	4	0	0	144
65-69	0	4	9	6	5	3	1	1	0	29
70-74	0	2	1	2	1	0	0	0	0	6
75-79	1	1	0	0	0	0	0	0	0	2
80+	0	0	0	0	0	0	0	0	0	0
Total	2,634	2,101	2,286	1,554	679	207	24	4	0	9,489

2.2(c) Schedule of Active Member Valuation Data

Valuation Date	Number	Annual Payroll (000's)	Annual Average Pay	Percent Increase In Average Pay
June 30, 1994	9,489	\$ 476,098	\$ 50,174	3.2%
June 30, 1993	9,459	459,746	48,604	.2%
June 30, 1992	9,238	448,186	48,515	2.2%
June 30, 1991	8,903	422,655	47,473	4.6%
June 30, 1990	8,586	389,702	45,388	1.8%
June 30, 1989	8,527	380,267	44,596	1.4%
June 30, 1988	8,218	361,310	43,966	-1.7%
June 30, 1987	7,797	348,606	44,710	.6%
June 30, 1986	8,824	392,136	44,440	7.8%
June 30, 1985	8,684	358,110	41,238	4.6%

2.2(d) Statistics on New Retirees During the Year Ending June 30

		<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Service						
(1)	Number	199	507	110	158	267
(2)	Average Age At Retirement	52.44	51.56	53.04	52.62	54.14
(3)	Average Monthly Benefit	\$ 2,037	\$ 2,133	\$ 1,926	\$ 2,086	\$ 2,349
Disability						
(1)	Number	8	8	8	4	6
(2)	Average Age At Retirement	46.48	45.46	43.81	48.69	48.31
(3)	Average Monthly Benefit	\$ 2,485	\$ 2,448	\$ 3,230	\$ 2,431	\$ 2,870
Surviving Spouses						
(1)	Number	1	4	2	3	7
(2)	Average Age At Retirement	63.96	45.40	49.46	49.37	44.47
(3)	Average Monthly Benefit	\$ 1,203	\$ 435	\$ 620	\$ 930	\$ 2,554
Total						
(1)	Number	208	519	120	165	280
(2)	Average Age At Retirement	52.27	51.42	52.37	52.47	53.77
(3)	Average Monthly Benefit	\$ 2,050	\$ 2,124	\$ 1,991	\$ 2,073	\$ 2,365

2.2(e) Schedule of Average Benefit Payments - New Retirees

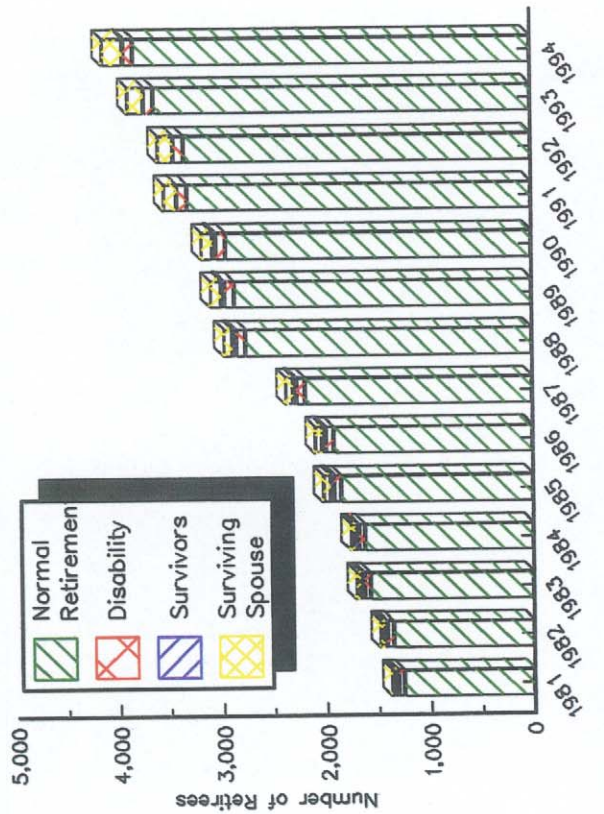
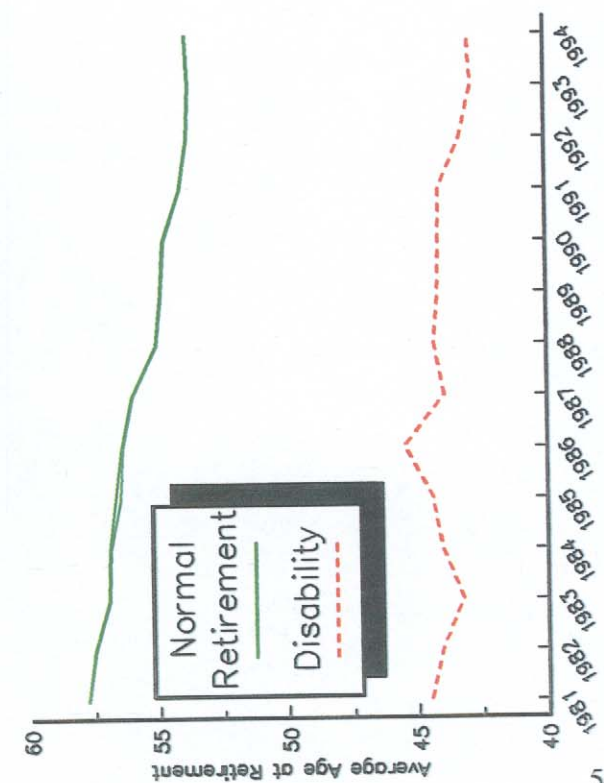
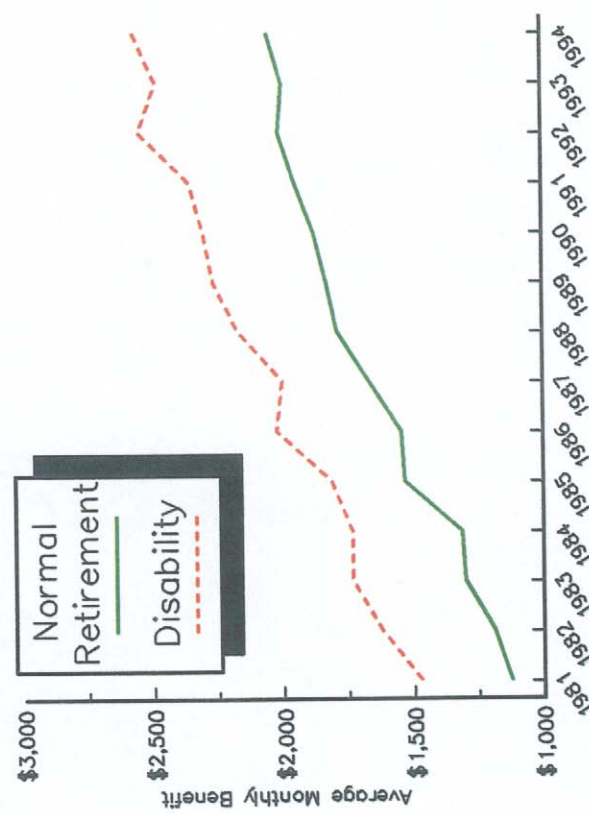
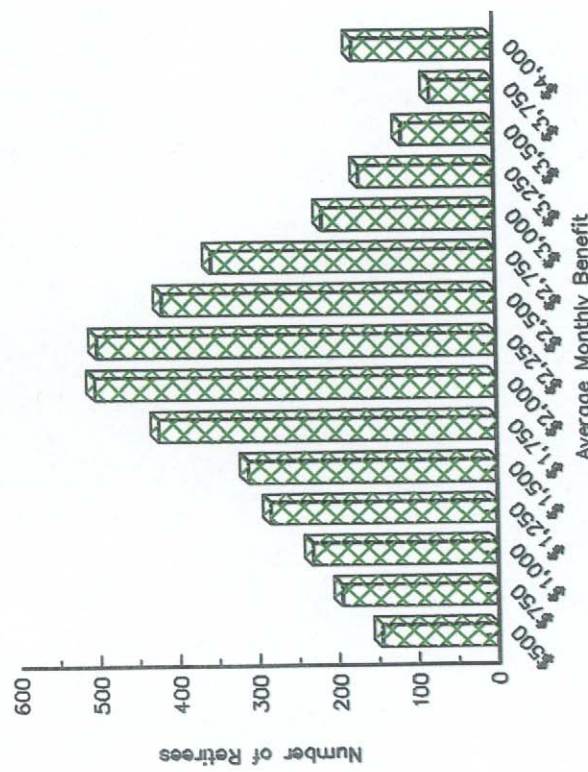
	Years of Credited Service							
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 +	
Period 7/1/93 - 6/30/94:								
Average Monthly Benefit*	\$ 1,161	\$ 576	\$ 1,151	\$ 1,605	\$ 2,354	\$ 3,176	\$ 3,685	
Number of Active Retirants	7	11	35	24	107	72	24	
Period 7/1/92 - 6/30/93:								
Average Monthly Benefit*	\$ 408	\$ 1,002	\$ 1,015	\$ 1,561	\$ 2,258	\$ 3,090	\$ 3,043	
Number of Active Retirants	7	17	23	9	62	37	10	
Period 7/1/91 - 6/30/92:								
Average Monthly Benefit	\$ 819	\$ 1,205	\$ 1,941	\$ 2,256	\$ 2,290	\$ 3,159	\$ 3,930	
Number of Active Retirants	4	27	25	17	38	8	1	
Period 7/1/90 - 6/30/91:								
Average Monthly Benefit	\$ 949	\$ 1,093	\$ 1,689	\$ 2,085	\$ 2,540	\$ 2,944	\$ 4,173	
Number of Active Retirants	14	53	95	155	160	37	5	
Period 7/1/89 - 6/30/90:								
Average Monthly Benefit	\$ 1,161	\$ 1,215	\$ 1,551	\$ 2,295	\$ 2,394	\$ 3,852	\$ 3,733	
Number of Active Retirants	6	36	33	70	55	6	2	
Period 7/1/88 - 6/30/89:								
Average Monthly Benefit	\$ 1,174	\$ 1,327	\$ 1,491	\$ 2,249	\$ 2,312	\$ 2,817	\$ 0	
Number of Active Retirants	3	33	33	61	68	3	0	

* "Average Monthly Benefit" included post-retirement pension adjustments and cost-of-living increases.

2.2(f) Statistics on All Retirees as of June 30

	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Service Retirements					
(1) Number, Fiscal Year Start	2,870	2,948	3,322	3,352	3,636
(2) Net Change During FY	78	374	30	284	195
(3) Number, Fiscal Year End	2,948	3,322	3,352	3,636	3,831
(4) Average Age At Retirement	54.80	54.14	53.83	53.75	53.85
(5) Average Age Now	62.84	61.82	62.15	62.60	63.00
(6) Average Monthly Benefit	\$ 1,879	\$ 1,950	\$ 2,013	\$ 1,998	\$ 2,052
Surviving Spouse's Benefits					
(1) Number, Fiscal Year Start	103	108	125	150	161
(2) Net Change During FY	5	17	25	11	39
(3) Number, Fiscal Year End	108	125	150	161	200
(4) Average Age At Retirement	55.76	54.44	54.04	53.91	51.51
(5) Average Age Now	67.79	65.95	65.90	66.72	64.25
(6) Average Monthly Benefit	\$ 794	\$ 1,093	\$ 1,339	\$ 1,187	\$ 1,299
Survivor's Benefits (other than spouses)					
(1) Number, Fiscal Year Start	31	31	1	2	0
(2) Net Change During FY	0	(30)	1	(2)	9
(3) Number, Fiscal Year End	31	1	2	0	9
(4) Average Age At Retirement	35.42	23.81	50.47	--	37.25
(5) Average Age Now	44.73	41.68	59.01	--	42.87
(6) Average Monthly Benefit	\$ 1,661	\$ 544	\$ 3,013	--	\$ 2,166
Disabilities					
(1) Number, Fiscal Year Start	94	97	96	98	94
(2) Net Change During FY93	3	(1)	2	(4)	0
(3) Number, Fiscal Year End	97	96	98	94	94
(4) Average Age At Retirement	44.18	44.15	43.30	42.85	42.98
(5) Average Age Now	50.14	50.33	49.97	49.97	50.28
(6) Average Monthly Benefit	\$ 2,304	\$ 2,358	\$ 2,552	2,484	\$ 2,569
Total Number of Retirees	3,184	3,544	3,602	3,891	4,134

State of Alaska - TRS Retirees



2.2(g) Distribution of Annual Benefits for Benefit Recipients

----- Annual Benefit By Age -----				--- Annual Benefit By Years Since Retirement ---			
Age Groups	Number of People	Total Annual Benefit	Average Annual Benefit	Years Since Retirement	Number of People	Total Annual Benefit	Average Annual Benefit
0-19	3	\$ 17,181	\$ 5,727	0	280	\$ 7,946,175	\$ 28,379
20-24	2	9,768	4,884	1	168	4,178,806	24,874
25-29	0	0	0	2	125	2,850,576	22,805
30-34	2	29,792	14,896	3	529	13,280,528	25,105
35-39	3	54,989	18,330	4	222	5,398,655	24,318
40-44	29	797,787	27,510	0- 4	1,324	33,654,740	25,419
45-49	251	6,385,175	25,439	5- 9	1,334	35,480,724	26,597
50-54	711	18,434,004	25,927	10-14	689	15,381,354	22,324
55-59	842	21,068,894	25,022	15-19	554	11,554,758	20,857
60-64	746	18,509,658	24,812	20-24	177	3,342,792	18,886
65-69	592	14,370,305	24,274	25-29	44	879,148	19,981
70-74	431	10,031,189	23,274	30-34	11	273,420	24,856
75-79	263	5,628,691	21,402	35-39	0	0	0
80+	259	5,252,479	20,280	40+	1	22,976	22,976
Total	4,134	\$ 100,589,912	\$ 24,332	Total	4,134	\$ 100,589,912	\$ 24,332

Years Since Retirement By Age

Years Since Retirement										
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	1	0	2	0	0	0	0	0	0	3
20-24	0	0	2	0	0	0	0	0	0	2
25-29	0	0	0	0	0	0	0	0	0	0
30-34	2	0	0	0	0	0	0	0	0	2
35-39	1	1	0	0	1	0	0	0	0	3
40-44	23	5	0	1	0	0	0	0	0	29
45-49	195	44	7	4	1	0	0	0	0	251
50-54	458	224	20	8	1	0	0	0	0	711
55-59	387	371	76	6	2	0	0	0	0	842
60-64	169	364	174	35	3	1	0	0	0	746
65-69	70	203	199	111	6	2	1	0	0	592
70-74	15	99	130	177	10	0	0	0	0	431
75-79	2	20	63	145	31	2	0	0	0	263
80+	1	3	16	67	122	39	10	0	1	259
Total	1,324	1,334	689	554	177	44	11	0	1	4,134

2.2(h) Schedule of Retired Members by Type of Retirant and Option Selected - June 30, 1994

Amount of Monthly Benefit	Number of Retirees	Type of Retirement			Option Selected #			
		1	2	3	Opt. 1	Opt. 2	Opt. 3	Opt. 4
\$ 1 - \$ 300	52	36	16	0	39	8	5	0
301 - 600	178	139	39	0	137	28	8	5
601 - 900	244	204	40	0	189	36	11	8
901 - 1200	314	284	26	4	244	46	19	5
1201 - 1500	382	360	22	0	333	27	18	4
1501 - 1800	511	492	13	6	434	43	31	3
1801 - 2100	633	605	15	13	529	68	30	6
2101 - 2400	560	540	7	13	479	48	26	7
2401 - 2700	432	404	7	21	364	49	16	3
2701 - 3000	285	265	5	15	238	32	11	4
over 3000	543	502	19	22	462	54	19	8
Totals	4,134	3,831	209	94	3,448	439	194	53

Type of Retirement

- 1 - Normal retirement
- 2 - Survivor payment
- 3 - Disability retirement

- Option 1 - Whole Life Annuity
- Option 2 - 75% Joint and Contingent Annuity
- Option 3 - 50% Joint and Survivor Annuity
- Option 4 - 66⅔% Joint and Survivor Annuity

2.2(i) Schedule of Retirants and Beneficiaries Added to and Removed from Rolls

Year Ended	Added to Rolls		Removed from Rolls		Rolls - End of Year		Percent Increase in Annual Allowances	Average Annual Allowance
	No. *	Annual Allowances*	No. *	Annual Allowances*	No.	Annual Allowances		
June 30, 1994	280	\$ 8,923,551	37	\$ 616,360	4,134	\$ 100,589,912	9.00%	\$ 24,332
June 30, 1993	344	8,557,344	55	1,044,709	3,891	92,282,721	6.74%	23,717
June 30, 1992	120	5,799,044	62	1,436,106	3,602	86,452,653	5.31%	24,001
June 30, 1991	519	14,827,829	159	3,535,365	3,544	82,089,715	15.95%	23,163
June 30, 1990	208	6,181,779	122	2,648,864	3,184	70,797,251	5.25%	22,235
June 30, 1989	201	5,730,311	75	1,593,075	3,098	67,264,336	6.55%	21,712
June 30, 1988	639	16,668,442	43	856,302	2,972	63,127,100	33.42%	21,241
June 30, 1987	301	8,922,546	23	425,546	2,376	47,314,960	21.89%	19,914
June 30, 1986	189	3,685,188	113	2,079,652	2,098	38,817,960	4.31%	18,502
June 30, 1985	289	9,844,034	31	489,552	2,022	37,212,424	33.58%	18,404
* Numbers are estimated, and include other internal transfers.								

2.3 Actuarial Basis

The demographic assumptions used in this valuation were adopted at the Fall 1991 TRS Board Meeting. Economic assumptions were adopted as a result of a presentation to the Board in October 1994. The funding method used in this valuation was adopted June 30, 1985. The five-year smoothing method used to determine valuation assets was changed effective June 30, 1994.

Valuation of Liabilities

- A. **Actuarial Method** - Projected Unit Credit (no change). Liabilities and contributions shown in the report are computed using the Projected Unit Credit method of funding. The unfunded accrued liability is amortized over a rolling 25 years. Any funded surpluses are amortized over five years.

The objective under this method is to fund each participant's benefits under the plan as they accrue. Thus, each participant's total pension projected to retirement with salary scale is broken down into units, each associated with a year of past or future service. The principle underlying the method is that each unit is funded in the year for which it is credited. Typically, when the method is introduced there will be an initial liability for benefits credited for service prior to that date, and to the extent that this liability is not covered by Assets of the Plan there is an Unfunded Liability to be funded over a chosen period in accordance with an amortization schedule.

An Accrued Liability is calculated at the valuation date as the present value of benefits credited with respect to service to that date.

The Unfunded Liability at the valuation date is the excess of the Accrued Liability over the Assets of the Plan. The level annual payment to be made over a stipulated number of years to amortize the Unfunded Liability is the Past Service Cost.

The Normal Cost is the present value of those benefits which are expected to be credited with respect to service during the year beginning on the valuation date.

Under this method, differences between the actual experience and that assumed in the determination of costs and liabilities will emerge as adjustments in the Unfunded Liability, subject to amortization.

B. **Actuarial Assumptions -**

- | | |
|----------------------|--|
| 1. Investment Return | 8% per year, compounded annually, net of expenses. |
| 2. Salary Scale | Inflation - 4.0% per year
Productivity - 0.5% per year
Merit (first 5 years of employment) - 1.0% per year |

- | | | |
|-----|----------------------|---|
| 3. | Total Inflation | Total inflation as measured by the Consumer Price Index for urban and clerical workers for Anchorage is assumed to increase 4% annually. |
| 4. | Health Cost Trend | FY95 - 9.5%
FY96 - 8.5%
FY97 - 7.5%
FY98 - 6.5%
FY99 and later - 5.5% |
| 5. | Mortality | 1984 Unisex Pension Mortality Table, set forward one year for male members and set backward four years for female members. All deaths are assumed to result from nonoccupational causes. |
| 6. | Turnover | Based upon the 1986-90 actual total turnover experience. (See Table 1). |
| 7. | Disability | Incidence rates based upon the 1986-90 actual experience, in accordance with Table 2. Post-disability mortality in accordance with rates published by the Pension Benefit Guaranty Corporation to reflect mortality of those receiving disability benefits under Social Security. |
| 8. | Retirement Age | Retirement rates based upon the 1986-90 actual experience in accordance with Table 3. |
| 9. | Spouse's Age | Wives are assumed to be four years younger than husbands. |
| 10. | Dependent Children | Benefits to dependent children have been valued assuming members who are not single have one dependent child. |
| 11. | Contribution Refunds | 100% of those terminating after age 35 who are vested will leave their contributions in the fund and thereby retain their deferred vested benefit. All others who terminate are assumed to have their contributions refunded. |

- | | | | | | | | | |
|--------------|--------------|--|--------------|-------------|---------|-------------|-------------|-------------|
| 12. | C.O.L.A. | Of those benefit recipients who are eligible for the C.O.L.A., 66% are assumed to remain in Alaska and receive the C.O.L.A. | | | | | | |
|
 | | | | | | | | |
| 13. | New Entrants | Growth projections are made for the active TRS population under three scenarios:

<table border="0"><tr><td>Pessimistic:</td><td>0% per year</td></tr><tr><td>Median:</td><td>1% per year</td></tr><tr><td>Optimistic:</td><td>2% per year</td></tr></table> | Pessimistic: | 0% per year | Median: | 1% per year | Optimistic: | 2% per year |
| Pessimistic: | 0% per year | | | | | | | |
| Median: | 1% per year | | | | | | | |
| Optimistic: | 2% per year | | | | | | | |
|
 | | | | | | | | |
| 14. | Sick Leave | 4.7 days of unused sick leave for each year of service will be available to be credited once the member is retired. | | | | | | |
|
 | | | | | | | | |
| 15. | Expenses | Expenses are covered in the investment return assumption. | | | | | | |

Valuation of Assets

Effective June 30, 1994, the asset valuation method recognizes 20% of the investment gain or loss in each of the current and preceding four years. All assets are valued at market value. Assets are accounted for on an accrued basis and are taken directly from audited financial statements provided by KPMG Peat Marwick. Valuation assets cannot be outside a range of 80% to 120% of the market value of assets.

Valuation of Medical Benefits

Medical benefits for retirees are provided by the payment of premiums from the fund. A pre-65 cost and lower post-65 cost (due to Medicare) are assumed such that the total rate for all retirees equals the present premium rate assumption. These medical premiums are then increased with the health inflation assumption. The actuarial cost method used for funding retirement benefits is also used to fund health benefits.

For FY96, the pre-65 monthly premium is \$458.17 and the post-65 premium is \$174.54, based on an assumed total blended premium of \$350.50. For FY96, the actual blended premium is \$350.50. The FY96 blended premium was provided by the State of Alaska Division of Retirement and Benefits.

Table 1

Alaska TRS

Total Turnover Assumptions

Select Rates of Turnover During the First 10 Years of Employment

<u>Year of Employment</u>	<u>Rate</u>
1	.26
2	.24
3	.16
4	.12
5	.11
6	.10
7	.09
8	.09
9	.09
10	.09

Ultimate Rates of Turnover After the First 10 Years of Employment

<u>Ages</u>	<u>Rate</u>
20-39	.03
40+	.02

Table 2
Alaska TRS
Disability Rates
Annual Rates Per 1,000 Employees

<u>Age</u>	<u>Rate</u>
20	.14
21	.14
22	.14
23	.15
24	.15
25	.15
26	.15
27	.15
28	.16
29	.16
30	.16
31	.17
32	.17
33	.25
34	.34
35	.44
36	.53
37	.64
38	.75
39	.87
40	.99
41	1.12
42	1.25
43	1.39
44	1.53
45	1.68
46	1.84
47	2.00
48	2.17
49	2.34
50	2.52
51	2.70
52	2.89
53	3.08
54	3.29
55	3.49
56	3.70
57	3.92
58	4.14
59	4.37
60	4.61
61	4.84
62	5.09
63	5.34
64	5.60

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Table 3
Alaska TRS
Retirement Rates

<u>Age at Retirement</u>	<u>Retirement Rate</u>
50	.10
51	.07
52	.07
53	.07
54	.07
55	.16
56	.16
57	.16
58	.16
59	.13
60	.13
61	.13
62	.13
63	.13
64	.10
65	.47
66	.82
67	1.00

For ages less than 50, teachers are assumed to retire two years after the earliest age they are eligible to retire.

Section 3

Other Historical Information

3.1 shows the analysis of financial experience.

3.2 shows the summary of accrued and unfunded accrued liabilities.

3.3 shows the solvency test.

3.4 shows the statement of actuarial present value of accumulated plan benefits.

3.1 Analysis of Financial Experience

Change in Contribution Rate Due to Gains and Losses in Accrued Liabilities During the Last Five Fiscal Years Resulting From Differences Between Assumed Experience and Actual Experience						
Type of Gain or Loss	Change in Contribution Rate During Fiscal Year					
	94	93	92	91	90	
(1) Health Experience	0.25%	0%	0%	-3.01%	-2.28%	
(2) Salary Experience	-0.20%	-.45%	-.34%	-.20%	-.49%	
(3) Investment Experience	0.55%	-1.66%	0%	.70%	-1.04%	
(4) Demographic Experience	0.47%	1.23%	-.59%	.96%	1.10%	
(5) Miscellaneous	0%	0%	0%	0%	.44%	
(6) Gain (or Loss) During Year From Experience, (1)+(2)+(3)+(4)+(5)	1.07%	-.88%	-.93%	-1.55%	-2.27%	
Non-recurring Changes						
(7) Contribution Rate Smoothing Method	0%	0%	0%	1.21%	-3.96%	
(8) Projection Valuation Method	0%	0%	-1.36%	-4.80%	0%	
(9) Asset Valuation Method	-0.89%	0%	-1.30%	0%	0%	
(10) Assumption Changes	2.30%	0%	0%	-2.51%	0%	
(11) Plan Changes	0%	0%	0%	0%	6.76%	
Composite Gain (or Loss) During Year, (6)+(7)+(8)+(9)+(10)+(11)	2.48%	-.88%	-3.59%	-7.65%	.53%	

3.2 Summary of Accrued and Unfunded Accrued Liabilities

Valuation Date	Aggregate Accrued Liability ('000's)	Valuation Assets ('000's)	Assets as a Percent of Accrued Liability	Unfunded Accrued Liabilities (UAL) ('000's)	Annual Active Member Payroll ('000's)	UAL as a Percent of Annual Active Member Payroll
June 30, 1994 ⁽¹⁾⁽²⁾	\$2,761,409	\$ 2,472,957	89.6%	\$288,452	\$ 476,098	60.6%
June 30, 1993	2,429,456	2,261,082	93.1%	168,374	459,746	36.6%
June 30, 1992 ⁽¹⁾	2,231,746	2,001,864	89.7%	229,882	448,186	51.3%
June 30, 1991 ⁽²⁾	2,075,405	1,779,579	85.7%	295,826	422,655	70.0%
June 30, 1990 ⁽³⁾	1,895,030	1,662,242	87.7%	232,788	389,702	59.7%
June 30, 1989 ⁽¹⁾	1,557,643	1,480,389	95.0%	77,254	380,267	20.3%
June 30, 1988 ⁽²⁾	1,347,859	1,331,905	98.8%	15,954	361,310	4.4%
June 30, 1987	1,210,909	1,225,009	101.2%	0	348,606	0%
June 30, 1986	1,115,773	1,040,173	93.2%	75,600	392,136	19.3%
June 30, 1985 ⁽³⁾⁽⁴⁾	1,042,551	833,617	80.0%	208,934	358,110	58.3%
⁽¹⁾ Change in Asset Valuation Method.						
⁽²⁾ Change of Assumptions.						
⁽³⁾ Change in Plan Provisions.						
⁽⁴⁾ Change in Funding Method.						

3.3 Solvency Test

Valuation Date	Aggregate Accrued Liability For:			Valuation Assets ('000's)	Portion of Accrued Liabilities Covered by Assets		
	(1) Active Member Contributions ('000's)	(2) Inactive Members ('000's)	(3) Active Members (Employer-Financed Portion) ('000's)		(1)	(2)	(3)
June 30, 1994 ⁽¹⁾⁽²⁾	\$ 398,990	\$1,419,506	\$942,913	\$ 2,472,957	100%	100%	69.4%
June 30, 1993	370,667	1,223,220	835,569	2,261,082	100%	100%	79.8%
June 30, 1992 ⁽¹⁾	341,204	1,110,981	779,561	2,001,864	100%	100%	70.5%
June 30, 1991 ⁽²⁾	293,136	1,056,453	725,816	1,779,579	100%	100%	59.2%
June 30, 1990 ⁽³⁾	269,491	940,475	685,064	1,662,242	100%	100%	66.0%
June 30, 1989 ⁽¹⁾	253,436	779,296	524,911	1,480,389	100%	100%	85.3%
June 30, 1988 ⁽²⁾	228,217	688,090	431,552	1,331,905	100%	100%	96.3%
June 30, 1987	210,493	578,468	421,948	1,225,009	100%	100%	100%
June 30, 1986	214,192*	426,333	475,248*	1,040,173	100%	100%	84.1%
June 30, 1985 ⁽²⁾⁽⁴⁾	194,215*	419,694	428,642*	833,617	100%	100%	51.3%
* Estimated							
⁽¹⁾ Change in Asset Valuation Method.							
⁽²⁾ Change of Assumptions.							
⁽³⁾ Change in Plan Provisions.							
⁽⁴⁾ Change in Funding Method.							

3.4 Statement of Actuarial Present Value of Accumulated Plan Benefits

Actuarial Present Value of Accumulated Plan Benefits at June 30, 1994 (000's)

Retired participants and beneficiaries of deceased participants	\$ 1,240,360
Terminated participants with deferred benefits	179,146
Active participants - Vested	1,007,778
Active participants - Non-vested	54,175
Total Actuarial Present Value of Accumulated Plan Benefits	2,481,459

Notes to the Statement of Accumulated Plan Benefits.

1. The actuarial present value of accumulated plan benefits presented in this statement was determined using the following assumptions:
 - a. Future salary was 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.
2. Accumulated employee contributions with interest total \$398,990(000).

3.4 Statement of Actuarial Present Value of Accumulated Plan Benefits (continued)

3. As with many of the comparative plan financial relationships otherwise available, an examination, over periods of time, of the relationship between the *value of accumulated plan benefits* and the *value of plan assets* may give an indication of the progress being made toward the funding of plan benefits. However, in the context of a "going concern" environment, a point in time comparison of these two values *should not be construed to be indicative of the expected ability of the plan to pay future benefits when due*. Furthermore, *that comparison is not valid for assessing a plan termination situation*. Consideration of inflation in the assumed return on plan assets while ignoring inflation's effect on future benefit levels *produces a significant understatement of the value of accumulated plan benefits* when applying going concern concepts. *The accumulated plan benefit value presented in this statement should not be confused with information presented elsewhere regarding funding requirements.*

4. The change in the Present Value of Accumulated Plan Benefits during the prior fiscal year is as follows:

A.	Actuarial Present Value of Accumulated Plan Benefits at June 30, 1993, (000's)	\$ 2,166,158
B.	Increase (Decrease) Attributable to:	
i.	Additional Benefits Accumulated, including Actuarial Experience	195,984
ii.	Increase due to Decrease in the Discount Period	189,610
iii.	Benefits Paid to Participants	(118,750)
iv.	Material System Change	0
v.	Change in Assumptions	<u>48,457</u>
C.	Actuarial Present Value of Accumulated Plan Benefits at June 30, 1994 (000's)	\$ 2,481,459