

State of Alaska
Teachers' Retirement System

Actuarial Valuation Report
as of June 30, 1997

Prepared by:

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March 18, 1998

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 annual actuarial valuation required for the State of Alaska Teachers' Retirement System has been prepared as of June 30, 1997 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, 1997;
- (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.

The following schedules that we have prepared are included in this report:

- (1) Summary of actuarial assumptions and methods (Section 2.3)
- (2) Schedule of active member valuation data (Section 2.2(c))
- (3) Schedule of retirants and beneficiaries added to and removed from rolls (Section 2.2(i))
- (4) Solvency test (Section 3.3)
- (5) Analysis of financial experience (Section 3.1)

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, LLP, 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 an experience study presented to the Board in October 1996.

The contribution requirements are determined as a percentage of payroll, and reflect the cost of benefits accruing in FY98 and a rolling amortization of the unfunded accrued liability. The amortization period is set by the Board. Contribution levels are recommended by the

Teachers' Retirement Board
March 18, 1997
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Actuary and adopted by the Board each year. Over time, the contribution rate is expected to remain constant as a percentage of payroll. The ratio of assets to liabilities decreased from 97.2% to 94.0% during the year, primarily due to the net effect of increases in benefit payments to retirees from the granting of Post Retirement Pension Adjustments during FY97 and continued favorable investment experience. Over the years, progress has been made toward achieving the funding objectives of the System.

There were no significant changes in the actuarial assumptions or actuarial methods used in the determination of system liabilities this year. The assumptions and methods, when applied in combination, fairly represent past and anticipated future experience of the System.

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.

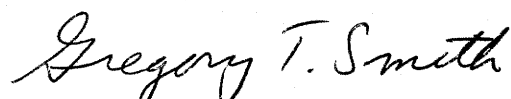
The undersigned are members of the American Academy of Actuaries or the Society of Actuaries and are fully qualified to provide actuarial services to the State of Alaska.

We believe that the assumptions and methods used for funding purposes and for the disclosures presented in this report satisfy the parameter requirements set forth in the Government Accounting Standards Board (GASB) Statement Nos. 25 and 27.

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, MAAA


Gregory T. Smith, ASA, EA

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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, 1997;
- (2) review experience under the plan for the year ended June 30, 1997;
- (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 1997 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 and unfunded liabilities.

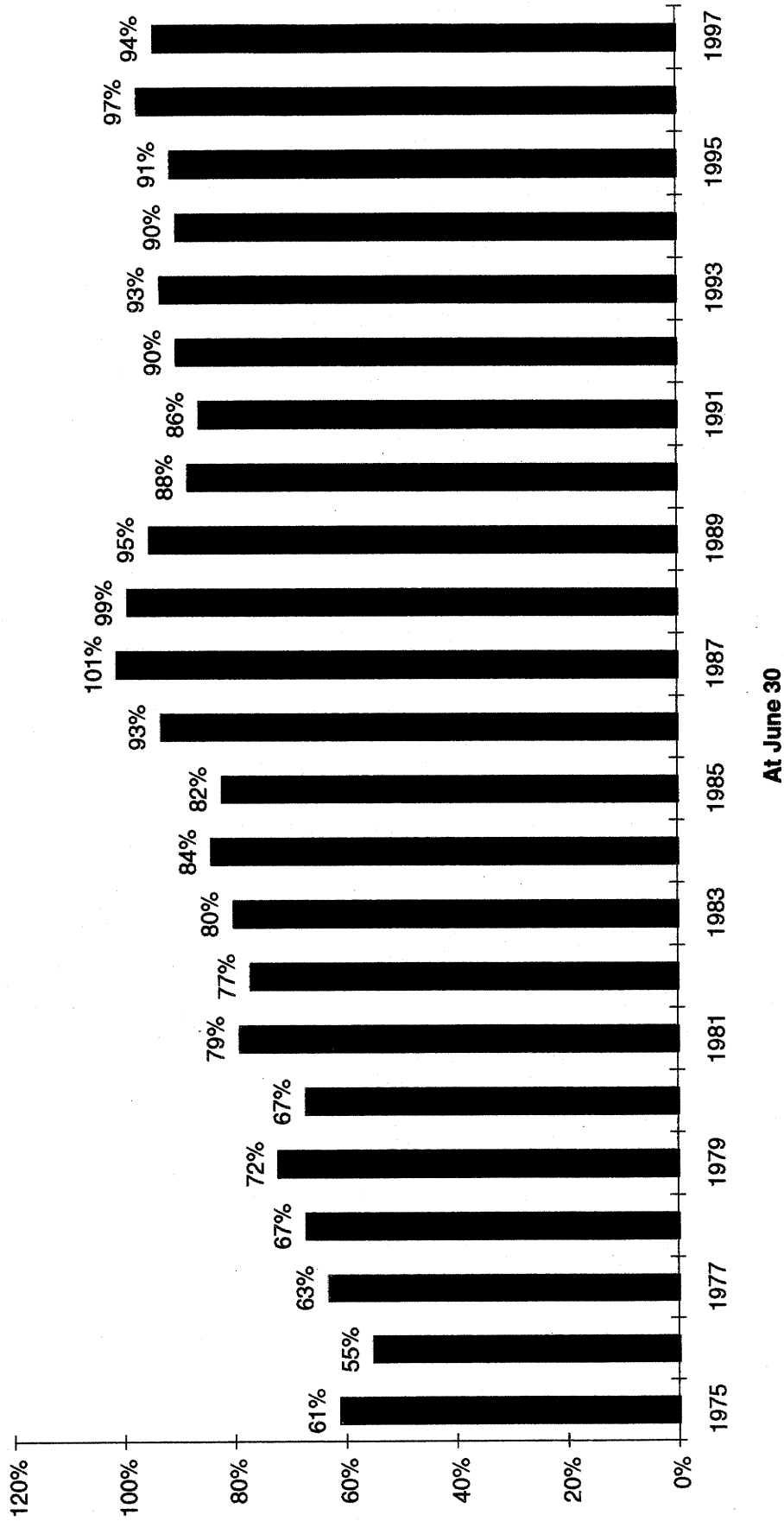
The principle results are as follows:

	<u>1996</u>	<u>1997</u>
Funding Status as of June 30:		
(a) Valuation Assets*	\$ 2,858,756	\$ 3,120,044
(b) Accrued Liability*		
i) Non-Medical Benefits	2,402,020	2,728,050
ii) Total Benefits (including medical)	2,940,437	3,320,069
(c) Funding Ratio, (a) / (b)		
i) Non-Medical Benefits	119.0%	114.4%
ii) Total Benefits (including medical)	97.2%	94.0%

* In thousands.

Highlights (continued)

State of Alaska - TRS Funding Ratio History



Highlights (continued)

Employer Contribution Rates for Fiscal Year:

	<u>1999</u>	<u>2000</u>
(a) Normal Cost Rate	8.97%	9.21%
(b) Past Service Rate	1.55%	3.79%
(c) Total Contribution Rate	10.52%	13.00%
(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, 1997 has decreased from 97.2% to 94.0%, a decrease of 3.2%. The total employer contribution rate has increased from 10.52% of payroll for FY99 to 13.00% for FY00, 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%
1997	350.50	0%	10%
1998	368.00	5%	10%
1999	368.00	0%	9%

As you can see from the above table, the monthly retiree medical premium for the 1999 fiscal year has remained flat at \$368.00. Since FY87, annual premium rate changes have ranged from 51% up to 15% down, but the average annual increase has been about 7%.

Two years ago, 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. The difference between the assumed rate and the actual rate will be tracked annually and reduced if the gap

Analysis of the Valuation

becomes too wide. Also, adjustments will be made, if necessary, to the assumed medical premium rate every four to five years when a formal experience analysis is performed.

Because no adjustments were made to the assumed medical premium rate this year, the total employer contribution rate was unaffected by medical cost experience.

(2) Investment Performance

The approximate FY97 investment return based on market values was 17.63%. The Asset Valuation Method was changed three years ago to smooth over five years the difference between actual and expected investment return. One purpose of this change was to adopt a method which better accomplished the goal of smoothing volatility in investment returns.

The approximate rate of return in FY97 based on valuation assets, after applying the smoothing technique, was 3.37% higher than the 8.25% investment return assumption. This produced a gain of approximately \$95,119,000 to the System from investment performance, which increased the funding ratio by 2.9% and lowered the total employer contribution rate by 1.80% of total payroll.

(3) Salary Increases

Last year, salary increases were slightly less than anticipated in the valuation assumptions. Salary experience resulted in an actuarial gain which increased the funding ratio by 0.3% and lowered the total employer contribution rate by 0.05% of total payroll.

(4) Employee Data

Section 2.2 provides statistics on active and inactive participants. The number of active participants decreased 1.0% from 9,259 at June 30, 1996 to 9,164 at June 30, 1997. This was less than the expected population increase scenario reviewed last year, and produced a moderate loss to the System from fewer Tier 2 actives entering the System than expected. The average age of active participants increased from 43.87 to 43.93 and average credited service decreased from 11.33 to 11.12 years.

The number of retirees and beneficiaries increased 11.2% from 4,803 to 5,343, and their average age decreased from 62.94 to 62.87. Any increase in retirees as a result of the RIP is cost neutral to the System, since the cost is funded by the individual employers. There was a 14.6% increase in the number of vested terminated participants from 1,116 to 1,279. Their average age increased from 49.31 to 49.62.

The overall effect of these participant data changes was an actuarial loss to the System, resulting in an increase in the total employer contribution rate equal to 1.56% of total payroll.

(5) Ad hoc PRPA

Two ad hoc Post-Retirement Pension Adjustment (PRPAs) were granted during FY97, the first ad hoc PRPAs since 1989. This increased benefit payments to many Tier I (hired before July 1, 1990) retirees. This action produced a loss to the System of approximately \$146,273,000.

Analysis of the Valuation

The overall effect of the ad hoc PRPA was an actuarial loss to the System, which lowered the funding ratio by 4.3% and increased the total employer contribution rate by 2.77% 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 1.5, Actuarial Projections, contains the results of this analysis.

This type of information can be especially useful to multi-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. This year, there was an increase in the calculated contribution rate due primarily to the granting of an ad hoc PRPA. However, as you can see in Section 1.5, based on the actuarial assumption and cost method, future contribution rates are expected to decline, and then level out in about 15 years.

Consistent with the Board's long term strategy, sound actuarial principles would support leveling out this contribution pattern. In this way, a more stable contribution pattern could be adopted to help the employers better budget retirement expenses. This enhanced projection technique will be used annually so that a continuous tracking of the contribution rate to the requirements will be made. Appropriate adjustments to the rate will 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 FY00 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, plus the deferred asset gains, 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.
- (c) The large asset gains over the last three years are being partially deferred under the asset smoothing method. As these deferred gains become recognized over the next 5 years the funded status is expected to improve. However, if the long term investment return assumption remains valid, investment losses can be anticipated which would offset these gains.

Analysis of the Valuation

Summary

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

Last year's total employer contribution rate.....	10.52%
Change due to:	
Retiree medical insurance	0.00%
Investment performance	(1.80%)
Salary increases	(0.05%)
Demographic experience.....	1.56%
Ad hoc PRPA.....	2.77%
Total employer contribution rate this year	13.00%
Effect of enhanced Actuarial Projection system	(1.00%)
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, 1997.

Section 1.1(b) shows the transactions of the plan's fund during FY97.

Section 1.1(c) develops the expected valuation assets and investment return as of June 30, 1997.

Section 1.1(d) develops the actual valuation assets as of June 30, 1997.

Section 1.2 shows the actuarial present values as of June 30, 1997.

Section 1.3 calculates the total contribution rate for FY00.

Section 1.4 calculates the actuarial gain or loss for FY97.

Section 1.5 contains the financial projections.

1.1(a) Statement of Net Assets as of June 30, 1997
(in thousands)

	<u>Pension</u>	<u>Postemployment Health</u>	<u>Total Market Value</u>
Cash and Cash Equivalents	\$ 14,155	\$ 3,193	\$ 17,348
Retirement Fixed Income Pool	1,008,110	227,361	1,235,471
United States Common Stocks	1,080,311	261,361	1,341,672
International Stocks	182,818	41,232	224,050
Global Equity Pool	308,418	69,558	377,976
Tactical Asset Allocation Pool	68,081	15,355	83,436
International Fixed Income Pool	58,663	13,231	71,894
Emerging Markets Stocks	42,769	9,645	52,414
Real Estate Equities	67,934	15,321	83,255
Mortgages (net of reserves)	1,164	262	1,426
Net Accrued Receivables	<u>2,553</u>	<u>576</u>	<u>3,129</u>
Total Assets	\$ 2,834,976	\$ 657,095	\$ 3,492,071

**1.1(b) Changes in Net Assets During Fiscal Year 1997
(in thousands)**

	<u>Pension</u>	<u>Postemployment Health</u>	<u>Total Market Value</u>
(1) Net Assets, June 30, 1996, (market value)	\$ 2,468,977	\$ 561,667	\$ 3,030,644
(2) Additions:			
(a) Employee Contributions	39,301	8,863	\$ 48,164
(b) Employer Contributions	50,399	11,367	61,766
(c) Retirement Incentive Program - Employee	1,156	261	1,417
(d) Retirement Incentive Program - Employer	3,738	843	4,581
(e) Interest and Dividend Income	112,876	25,457	138,333
(f) Net Appreciation on Investments	326,331	73,598	399,929
(g) Net Recognized Mortgage Loan Recovery	<u>164</u>	<u>37</u>	<u>201</u>
(h) Total Additions	533,965	120,426	654,391
(3) Deductions:			
(a) Medical Benefits	\$ 0	\$ 22,653	\$ 22,653
(b) Retirement Benefits	157,567	0	157,567
(c) Refunds of Contributions	2,143	483	2,626
(d) Investment Expenses	6,442	1,453	7,895
(e) Administrative Expenses	<u>1,814</u>	<u>409</u>	<u>2,223</u>
(f) Total Deductions	167,966	24,998	192,964
(4) Net Assets, June 30, 1997, (market value)			\$ 3,492,071
Approximate Market Value Investment Return Rate During the Year, Net of Expenses			17.63%

**1.1(c) Development of Expected Valuation Assets as of
June 30, 1997 (in thousands)**

(1)	June 30, 1996 Valuation Assets	\$ 2,858,756
(2)	Total Contributions for FY97, (Item (2a) + (2b) + (2c) + (2d) from 1.1(b))	115,928
(3)	Total Benefit Payments for FY97, (Item (3a) + (3b) + (3c) from 1.1(b))	182,846
(4)	Expected Investment Return, Net of Expenses, for the period July 1, 1996 through June 30, 1997 $((1) + .5 \times [(2) - (3)]) \times 8.25\%$	233,087
(5)	Actual Investment Return, Net of Expenses, for the period July 1, 1996 through June 30, 1997 [Item (2e) + (2f) + (2g) - (3d) - (3e) from 1.1(b)]	528,345
(6)	Total Investment Gain/(Loss) (5) - (4)	295,258
(7)	Expected Valuation Assets, (1) + (2) - (3) + (4)	3,024,925

**1.1(d) Development of Valuation Assets as of June 30, 1997
(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, 1997	\$ 295,258	\$ 0	\$ 59,052
(2) Fiscal Year ending June 30, 1996	166,896	33,379	33,379
(3) Fiscal Year ending June 30, 1995	164,985	65,994	32,997
(4) Fiscal Year ending June 30, 1994	(151,547)	(90,927)	(30,309)
(5) Total Gain/(Loss) Recognized this Fiscal Year			95,119
(6) Expected Valuation Assets, June 30, 1997, (Item (7) from 1.1(c))			\$ 3,024,925
(7) Valuation Assets at June 30, 1997, (5) + (6), but not outside a corridor of 80% to 120% of the market value of assets			\$ 3,120,044
Approximate Valuation Assets Investment Return Rate During the Year, Net of Expenses			11.62%

**1.2 Actuarial Present Values as of June 30, 1997
(in thousands)**

	<u>Normal Cost</u>	<u>Accrued Liabilities</u>
<u>Active Members</u>		
Retirement Benefits	\$ 55,707	\$ 893,834
Termination Benefits	4,660	60,093
Disability Benefits	731	17,648
Death Benefits	1,472	24,760
Return of Contributions	2,884	17,204
Medical Benefits	18,281	248,143
Indebtedness	0	(33,948)
Retirement Incentive Program Receivable	<u>0</u>	<u>(3,508)</u>
Subtotal	\$ 83,735	\$ 1,224,226
<u>Inactive Members</u>		
Not Vested	\$ 0	\$ 18,847
Vested Terminations		
- Retirement Benefits	0	186,447
- Medical Benefits	0	76,975
Retirees & Beneficiaries		
- Retirement Benefits	0	1,546,673
- Medical Benefits	<u>0</u>	<u>266,901</u>
Subtotal	\$ 0	\$ 2,095,843
<u>Totals</u>	\$ 83,735	\$ 3,320,069

1.3 Development of Total Employer Contribution Rate - FY00 (in thousands)

Normal Cost Rate

(1)	Total Normal Cost	\$ 83,735
(2)	Total Salaries	466,455
(3)	Normal Cost Rate, (1) ÷ (2)	17.95%
(4)	Average Member Contribution Rate	8.74%
(5)	Employer Normal Cost Rate, (3) - (4)	9.21%

Past Service Rate

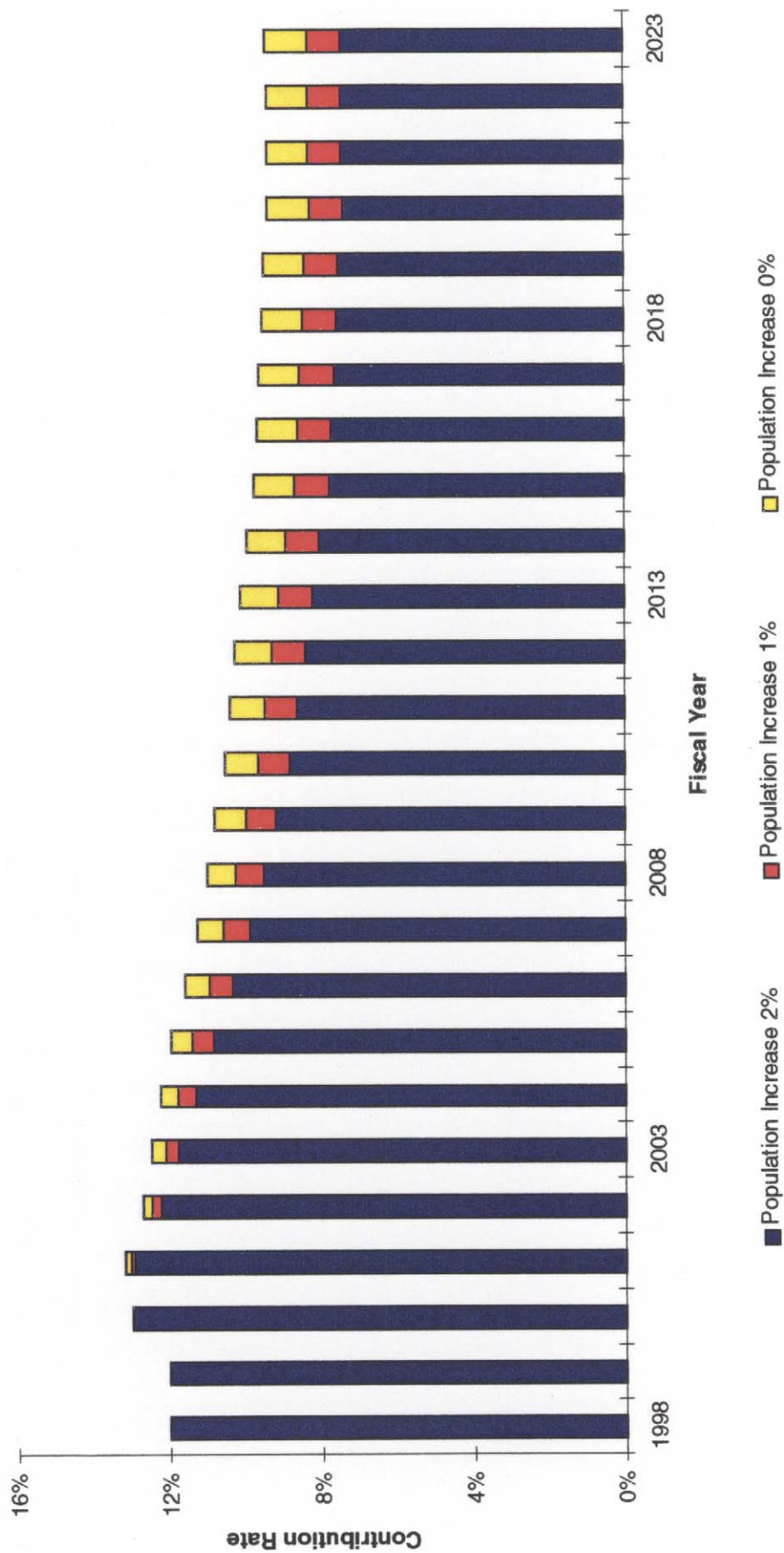
(1)	Accrued Liability	\$ 3,320,069
(2)	Valuation Assets	3,120,044
(3)	Total Unfunded Liability, (1) - (2)	200,025
(4)	Amortization Factor (25 year)	11.312888
(5)	Past Service Cost, (3) ÷ (4)	17,681
(6)	Total Salaries	466,455
(7)	Past Service Rate, (5) ÷ (6)	3.79%
	Total Employer Contribution Rate	13.00%

1.4 Development of Actuarial Gain/(Loss) for FY97 (in thousands)

(1) Unfunded Liability, June 30, 1996	\$ 81,681
(2) Normal Cost for FY97	82,421
(3) Interest on (1) and (2) at 8.25%	13,538
(4) Employee Contributions for FY97	49,581
(5) Employer Contributions for FY97	66,347
(6) Interest on (4) and (5) at 8.25% for one-half year	4,782
(7) Expected Unfunded Liability, June 30, 1997, (1) + (2) + (3) - (4) - (5) - (6)	56,930
(8) Actual Unfunded Liability, June 30, 1997	200,025
(9) Actuarial Gain/(Loss) for the Year, (7) - (8)	\$ (143,095)

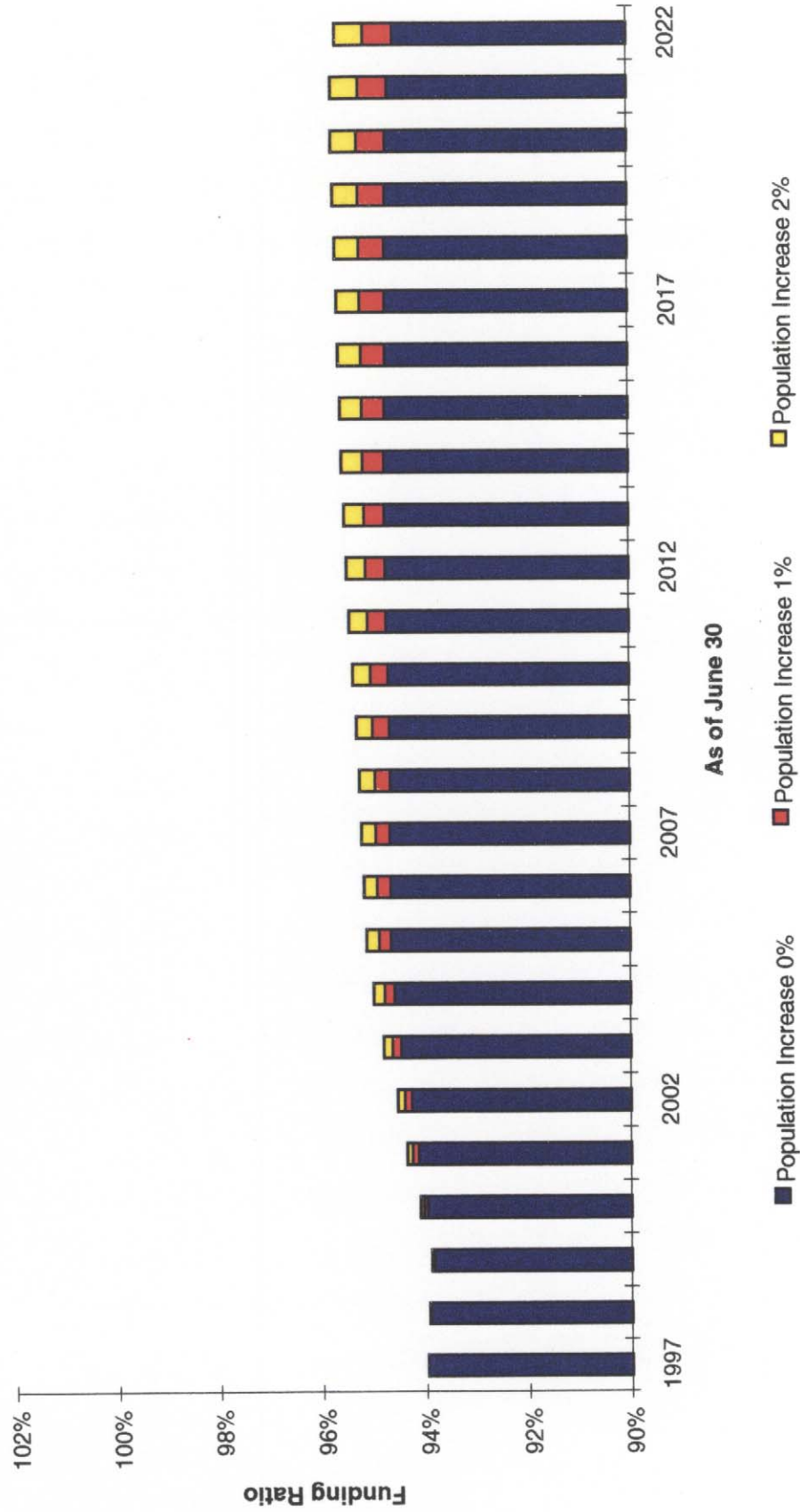
1.5 Actuarial Projections

State of Alaska TRS Projected Contribution Rates



1.5 Actuarial Projections (continued)

State of Alaska TRS Projected Funding Ratios



1.5 Actuarial Projections (continued)

Table 1
State of Alaska TRS
Financial Projections ('000 omitted)

As of June 30	Investment Return		Valuation Amounts on July 1		8.25%		Flow Amounts During Following 12 Months		Annual Population Increase		0.00%		Ending Asset Value
	Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings	
1997	3,120,044	3,320,069	94.0%	(200,025)	466,455	12.00%	56,702	41,298	98,000	200,206	(102,206)	253,188	3,271,025
1998	3,271,025	3,482,826	93.9%	(211,800)	478,579	12.00%	58,176	42,323	100,499	206,877	(106,378)	265,472	3,430,119
1999	3,430,119	3,655,551	93.8%	(225,431)	491,018	13.00%	64,219	43,076	107,296	226,201	(118,905)	278,080	3,589,294
2000	3,589,294	3,819,622	94.0%	(230,328)	496,971	13.19%	66,249	43,742	109,990	240,286	(130,295)	290,742	3,749,741
2001	3,749,741	3,982,906	94.1%	(233,166)	507,427	12.73%	65,283	44,629	109,912	255,895	(145,983)	303,332	3,907,090
2002	3,907,090	4,144,925	94.3%	(237,835)	518,532	12.46%	65,396	45,605	111,001	272,821	(161,820)	315,660	4,060,930
2003	4,060,930	4,298,900	94.5%	(237,970)	531,074	12.22%	65,678	46,641	112,319	291,312	(178,993)	327,643	4,209,581
2004	4,209,581	4,450,654	94.6%	(241,073)	543,615	11.97%	65,822	47,675	113,498	309,394	(195,896)	339,210	4,352,894
2005	4,352,894	4,598,764	94.7%	(245,870)	556,156	11.59%	65,199	48,706	113,905	328,332	(214,427)	350,269	4,488,735
2006	4,488,735	4,742,066	94.7%	(253,330)	568,698	11.28%	64,861	49,735	114,596	344,918	(230,322)	360,820	4,619,233
2007	4,619,233	4,879,649	94.7%	(260,417)	581,239	11.01%	64,928	50,949	115,878	363,069	(247,191)	370,890	4,742,932
2008	4,742,932	5,010,863	94.7%	(267,931)	598,147	10.79%	65,477	52,350	117,827	379,788	(261,962)	380,486	4,861,456
2009	4,861,456	5,135,309	94.7%	(273,852)	615,055	10.55%	65,776	53,746	119,522	396,738	(277,216)	389,635	4,973,876
2010	4,973,876	5,252,847	94.7%	(278,972)	631,963	10.41%	66,663	55,204	121,867	413,705	(291,838)	398,306	5,080,344
2011	5,080,344	5,363,595	94.7%	(283,251)	648,871	10.25%	67,406	56,661	124,068	430,812	(306,744)	406,475	5,180,075
2012	5,180,075	5,467,924	94.7%	(287,849)	665,779	10.09%	68,314	58,376	126,690	446,937	(320,247)	414,146	5,273,973
2013	5,273,973	5,566,463	94.7%	(292,489)	688,654	9.92%	69,432	60,348	129,780	462,634	(332,854)	421,373	5,362,492
2014	5,362,492	5,660,097	94.7%	(297,605)	711,529	9.72%	70,286	62,320	132,606	476,274	(343,668)	428,229	5,447,053
2015	5,447,053	5,749,967	94.7%	(302,914)	734,404	9.64%	71,932	64,292	136,223	488,394	(352,171)	434,855	5,529,737
2016	5,529,737	5,837,471	94.7%	(307,734)	757,279	9.58%	73,625	66,263	139,889	499,178	(359,289)	441,383	5,611,830
2017	5,611,830	5,924,263	94.7%	(312,433)	780,154	9.52%	75,756	68,612	144,369	509,178	(364,809)	447,928	5,694,949
2018	5,694,949	6,012,254	94.7%	(317,305)	811,780	9.46%	78,251	71,338	149,590	518,380	(368,790)	454,621	5,780,780
2019	5,780,780	6,103,609	94.7%	(322,829)	843,406	9.35%	80,311	74,065	154,376	524,510	(370,134)	461,646	5,872,292
2020	5,872,292	6,200,751	94.7%	(328,459)	875,032	9.36%	83,393	76,791	160,184	532,215	(372,031)	469,118	5,969,379
2021	5,969,379	6,306,361	94.7%	(336,982)	906,658	9.38%	86,538	79,517	166,055	539,791	(373,736)	477,057	6,072,699
2022	6,072,699	6,423,372	94.5%	(350,673)	938,284	9.40%	89,743	82,291	172,034	548,143	(376,109)	485,483	6,182,073

* Surpluses reduce employer contributions over 5 years

* Deficits increase employer contributions over 25 years

1.5 Actuarial Projections (continued)

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

As of June 30	Investment Return	Valuation Amounts on July 1				Flow Amounts During Following 12 Months				Annual Population Increase				1.00%				Ending Asset Value
		Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings					
1997		3,120,044	3,320,069	94.0%	(200,025)	466,455	12.00%	56,915	41,453	98,367	200,206	(101,839)	253,203	3,271,408				
1998		3,271,408	3,482,865	93.9%	(211,457)	482,122	12.00%	58,826	42,796	101,622	206,877	(105,254)	265,549	3,431,703				
1999		3,431,703	3,655,980	93.9%	(224,277)	498,315	13.00%	65,436	43,892	109,328	226,239	(116,911)	278,293	3,593,085				
2000		3,593,085	3,820,820	94.0%	(227,735)	508,390	13.05%	67,341	44,933	112,274	240,393	(128,119)	291,145	3,756,111				
2001		3,756,111	3,985,310	94.2%	(229,199)	523,366	12.49%	66,375	46,231	112,606	256,097	(143,491)	303,960	3,916,580				
2002		3,916,580	4,149,042	94.4%	(232,462)	539,414	12.11%	66,470	47,697	114,167	273,138	(158,971)	316,560	4,074,170				
2003		4,074,170	4,305,274	94.6%	(231,104)	558,339	11.77%	66,827	49,285	116,112	291,766	(175,654)	328,873	4,227,389				
2004		4,227,389	4,460,028	94.8%	(232,639)	577,263	11.41%	66,965	50,869	117,834	310,007	(192,173)	340,832	4,376,049				
2005		4,376,049	4,612,005	94.9%	(235,956)	596,187	10.95%	66,338	52,449	118,787	329,135	(210,348)	352,347	4,518,048				
2006		4,518,048	4,760,182	94.9%	(242,134)	615,112	10.57%	66,006	54,026	120,031	345,854	(225,823)	363,424	4,655,650				
2007		4,655,650	4,903,815	94.9%	(248,166)	634,036	10.23%	66,235	55,916	122,152	364,157	(242,006)	374,108	4,787,753				
2008		4,787,753	5,042,436	94.9%	(254,684)	660,321	9.96%	67,098	58,120	125,218	381,043	(255,825)	384,437	4,916,364				
2009		4,916,364	5,175,853	95.0%	(259,489)	686,605	9.66%	67,571	60,318	127,889	398,181	(270,292)	394,451	5,040,523				
2010		5,040,523	5,304,153	95.0%	(263,630)	712,890	9.47%	68,786	62,584	131,370	415,372	(284,002)	404,128	5,160,649				
2011		5,160,649	5,427,698	95.1%	(267,049)	739,174	9.28%	69,851	64,850	134,700	432,743	(298,042)	413,459	5,276,066				
2012		5,276,066	5,547,129	95.1%	(271,062)	765,459	9.09%	71,242	67,547	138,789	449,176	(310,387)	422,472	5,388,152				
2013		5,388,152	5,663,361	95.1%	(275,209)	801,758	8.90%	73,000	70,676	143,676	465,227	(321,551)	431,259	5,497,859				
2014		5,497,859	5,777,590	95.2%	(279,731)	838,058	8.68%	74,308	73,805	148,113	479,277	(331,165)	439,913	5,606,607				
2015		5,606,607	5,891,285	95.2%	(284,678)	874,357	8.59%	76,705	76,934	153,639	491,887	(338,248)	448,592	5,716,952				
2016		5,716,952	6,006,195	95.2%	(289,243)	910,657	8.52%	79,146	80,063	159,209	503,283	(344,075)	457,455	5,830,333				
2017		5,830,333	6,124,345	95.2%	(294,012)	946,956	8.46%	82,234	83,804	166,037	513,996	(347,959)	466,649	5,949,023				
2018		5,949,023	6,248,036	95.2%	(299,012)	997,446	8.40%	85,876	88,156	174,032	524,017	(349,985)	476,358	6,075,396				
2019		6,075,396	6,379,847	95.2%	(304,451)	1,047,937	8.28%	88,834	92,508	181,343	531,092	(349,750)	486,793	6,212,439				
2020		6,212,439	6,522,634	95.2%	(310,195)	1,098,427	8.29%	93,140	96,861	190,001	540,277	(350,276)	498,077	6,360,240				
2021		6,360,240	6,679,529	95.2%	(319,289)	1,148,917	8.30%	97,488	101,213	198,701	549,661	(350,960)	510,243	6,519,523				
2022		6,519,523	6,853,943	95.1%	(334,420)	1,199,408	8.32%	101,957	105,661	207,617	560,119	(352,501)	523,320	6,690,341				

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

1.5 Actuarial Projections (continued)

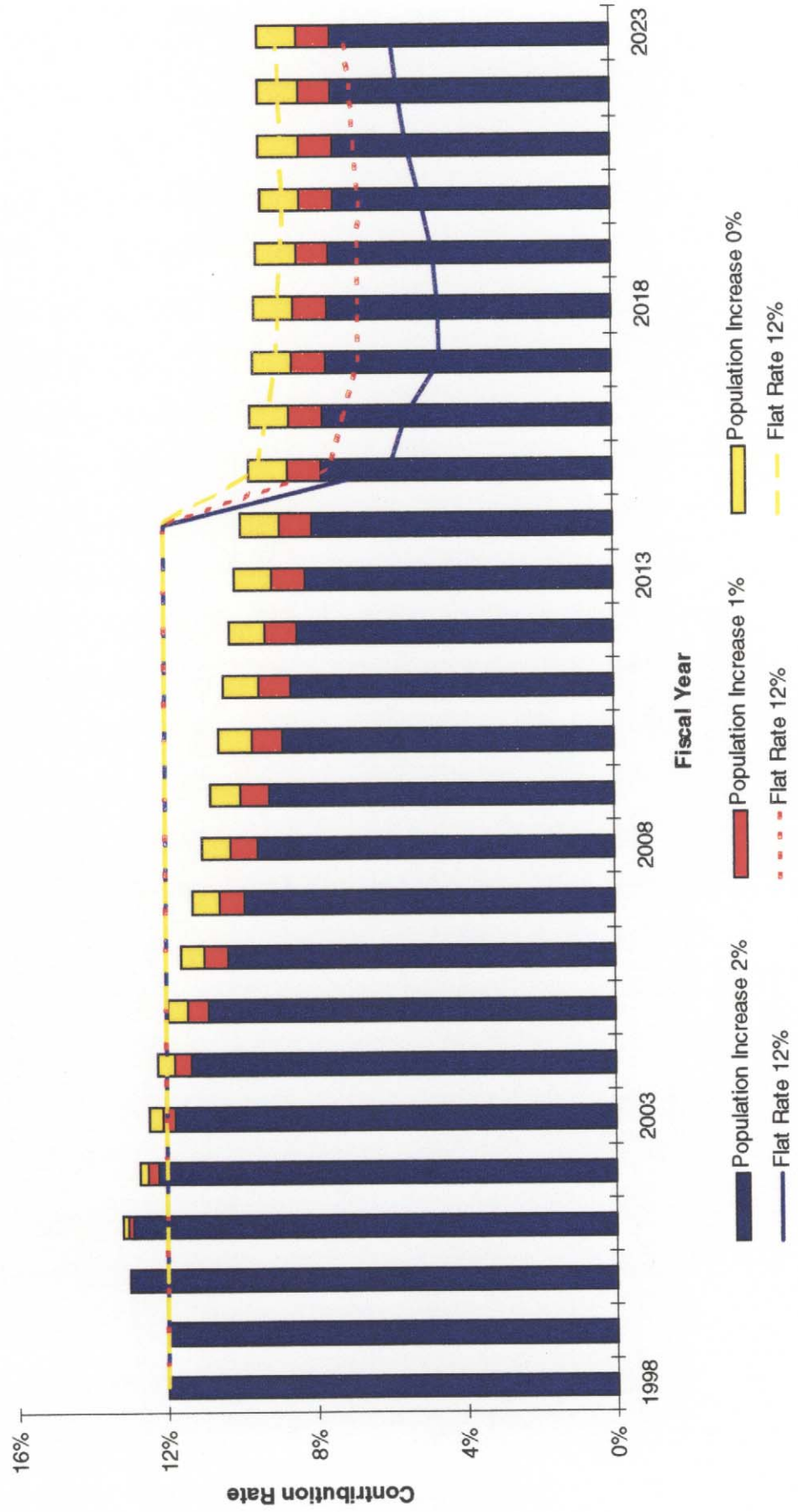
Table 3
State of Alaska TRS
Financial Projections ('000 omitted)

As of June 30	Investment Return		8.25%		Flow Amounts During Following 12 Months										Annual Population Increase		2.00%		Ending Asset Value
	Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings			
1997	3,120,044	3,320,069	94.0%	(200,025)	466,455	12.00%	57,128	41,608	98,737	200,206	(101,469)	253,218	98,737	200,206	(101,469)	253,218	3,271,793		
1998	3,271,793	3,482,910	93.9%	(211,117)	485,683	12.00%	59,483	43,274	102,757	206,877	(104,119)	265,628	102,757	206,877	(104,119)	265,628	3,433,301		
1999	3,433,301	3,656,414	93.9%	(223,113)	505,703	13.00%	66,674	44,723	111,398	226,278	(114,880)	278,509	111,398	226,278	(114,880)	278,509	3,596,930		
2000	3,596,930	3,822,027	94.1%	(225,098)	520,057	12.92%	68,448	46,157	114,605	240,500	(125,895)	291,554	114,605	240,500	(125,895)	291,554	3,762,588		
2001	3,762,588	3,987,748	94.4%	(225,160)	539,806	12.26%	67,482	47,892	115,374	256,303	(140,929)	304,600	115,374	256,303	(140,929)	304,600	3,926,259		
2002	3,926,259	4,153,245	94.5%	(226,986)	561,158	11.77%	67,564	49,899	117,463	273,463	(156,000)	317,481	117,463	273,463	(156,000)	317,481	4,087,741		
2003	4,087,741	4,311,746	94.8%	(224,005)	587,272	11.33%	68,007	52,109	120,116	292,236	(172,120)	330,139	120,116	292,236	(172,120)	330,139	4,245,760		
2004	4,245,760	4,469,632	95.0%	(223,872)	613,387	10.87%	68,121	54,313	122,433	310,645	(188,211)	342,511	122,433	310,645	(188,211)	342,511	4,400,060		
2005	4,400,060	4,625,715	95.1%	(225,656)	639,502	10.34%	67,460	56,512	123,972	329,978	(206,006)	354,507	123,972	329,978	(206,006)	354,507	4,548,561		
2006	4,548,561	4,779,119	95.2%	(230,558)	665,617	9.89%	67,114	58,705	125,819	346,850	(221,030)	366,139	125,819	346,850	(221,030)	366,139	4,693,669		
2007	4,693,669	4,929,273	95.2%	(235,604)	691,732	9.50%	67,531	61,391	128,921	365,326	(236,404)	377,476	128,921	365,326	(236,404)	377,476	4,834,741		
2008	4,834,741	5,075,917	95.2%	(241,176)	729,351	9.19%	68,768	64,566	133,335	382,406	(249,071)	388,592	133,335	382,406	(249,071)	388,592	4,974,262		
2009	4,974,262	5,219,099	95.3%	(244,837)	766,971	8.83%	69,412	67,734	137,147	399,767	(262,620)	399,544	137,147	399,767	(262,620)	399,544	5,111,186		
2010	5,111,186	5,359,176	95.4%	(247,990)	804,591	8.62%	71,005	70,977	141,982	417,218	(275,236)	410,319	141,982	417,218	(275,236)	410,319	5,246,269		
2011	5,246,269	5,496,813	95.4%	(250,544)	842,211	8.41%	72,437	74,220	146,657	434,899	(288,243)	420,927	146,657	434,899	(288,243)	420,927	5,378,954		
2012	5,378,954	5,632,986	95.5%	(254,032)	879,830	8.21%	74,410	78,153	152,562	451,695	(299,133)	431,424	152,562	451,695	(299,133)	431,424	5,511,246		
2013	5,511,246	5,768,976	95.5%	(257,731)	933,455	8.01%	76,951	82,775	159,726	468,165	(308,438)	441,955	159,726	468,165	(308,438)	441,955	5,644,762		
2014	5,644,762	5,906,377	95.6%	(261,615)	987,080	7.77%	78,753	87,398	166,151	482,698	(316,547)	452,635	166,151	482,698	(316,547)	452,635	5,780,850		
2015	5,780,850	6,047,087	95.6%	(266,237)	1,040,705	7.69%	82,071	92,020	174,091	495,887	(321,797)	463,646	174,091	495,887	(321,797)	463,646	5,922,699		
2016	5,922,699	6,193,317	95.6%	(270,618)	1,094,330	7.62%	85,418	96,642	182,060	507,997	(325,937)	475,178	182,060	507,997	(325,937)	475,178	6,071,940		
2017	6,071,940	6,347,585	95.7%	(275,645)	1,147,955	7.56%	89,710	102,246	191,956	519,546	(327,589)	487,422	191,956	519,546	(327,589)	487,422	6,231,773		
2018	6,231,773	6,512,718	95.7%	(280,944)	1,224,352	7.51%	94,828	108,832	203,660	530,534	(326,874)	500,638	203,660	530,534	(326,874)	500,638	6,405,537		
2019	6,405,537	6,691,850	95.7%	(286,313)	1,300,749	7.38%	98,854	115,417	214,272	538,725	(324,453)	515,073	214,272	538,725	(324,453)	515,073	6,596,157		
2020	6,596,157	6,888,426	95.8%	(292,269)	1,377,146	7.40%	104,770	122,003	226,772	549,591	(322,819)	530,867	226,772	549,591	(322,819)	530,867	6,804,204		
2021	6,804,204	7,106,199	95.8%	(301,995)	1,453,543	7.42%	110,688	128,588	239,276	561,030	(321,754)	548,075	239,276	561,030	(321,754)	548,075	7,030,525		
2022	7,030,525	7,349,231	95.7%	(318,706)	1,529,941	7.44%	116,811	135,347	252,157	573,892	(321,735)	566,747	252,157	573,892	(321,735)	566,747	7,275,537		

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

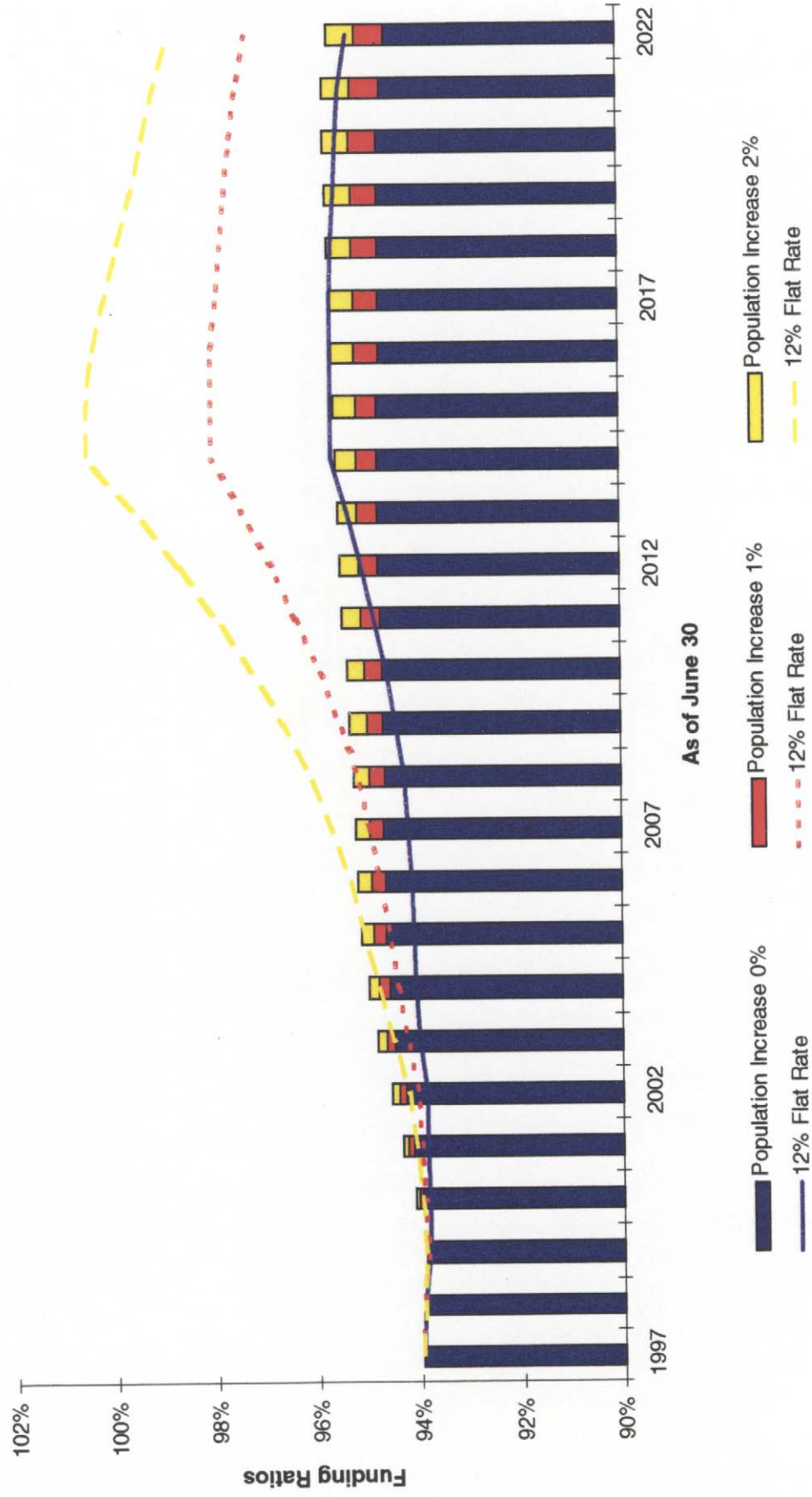
1.5 Actuarial Projections (continued)

State of Alaska TRS Projected Contribution Rates



1.5 Actuarial Projections (continued)

State of Alaska TRS Projected Funding Ratios



1.5 Actuarial Projections (continued)

Table 4
State of Alaska TRS
Financial Projections ('000 omitted)

As of June 30	Investment Return		8.25%		Flow Amounts During Following 12 Months										Annual Population Increase		0.00%		Ending Asset Value				
	Valuation Amounts on July 1		Funding		Surplus*		Total		Employer		Employer		Employee		Total		Benefit			Net		Investment	
	Total Assets	Accrued Liability	Ratio	Ratio	Surplus* (Deficit)	Salaries	Ctb Rate	Contribs	Contribs	Contribs	Contribs	Contribs	Contribs	Contribs	Contribs	Contribs	Contribs	Contribs		Contribs	Contribs	Earnings	Earnings
1997	3,120,044	3,320,069	94.0%	94.0%	(200,025)	466,455	12.00%	56,702	41,298	98,000	200,206	(102,206)	253,188	3,271,025									
1998	3,271,025	3,482,826	93.9%	93.9%	(211,800)	478,579	12.00%	58,176	42,323	100,499	206,877	(106,378)	265,472	3,430,119									
1999	3,430,119	3,655,551	93.8%	93.8%	(225,411)	491,018	12.00%	59,279	43,076	102,356	226,201	(123,845)	277,876	3,584,150									
2000	3,584,150	3,819,622	93.8%	93.8%	(235,471)	496,971	12.00%	60,264	43,742	104,005	240,286	(136,280)	290,071	3,737,941									
2001	3,737,941	3,982,906	93.8%	93.8%	(244,966)	507,427	12.00%	61,558	44,629	106,187	255,895	(149,708)	302,205	3,890,438									
2002	3,890,438	4,144,925	93.9%	93.9%	(254,487)	518,532	12.00%	62,976	45,605	108,582	272,821	(164,239)	314,186	4,040,385									
2003	4,040,385	4,298,900	94.0%	94.0%	(258,515)	531,074	12.00%	64,481	46,641	111,123	291,312	(180,189)	325,899	4,186,095									
2004	4,186,095	4,450,654	94.1%	94.1%	(264,559)	543,615	12.00%	65,986	47,675	113,661	309,394	(195,733)	337,279	4,327,641									
2005	4,327,641	4,598,764	94.1%	94.1%	(271,123)	556,156	12.00%	67,491	48,706	116,197	328,332	(212,135)	348,280	4,463,786									
2006	4,463,786	4,742,066	94.1%	94.1%	(278,280)	568,698	12.00%	68,996	49,735	118,731	344,918	(226,187)	358,932	4,596,531									
2007	4,596,531	4,879,649	94.2%	94.2%	(283,118)	581,239	12.00%	70,763	50,949	121,713	363,069	(241,356)	369,258	4,724,433									
2008	4,724,433	5,010,863	94.3%	94.3%	(286,430)	598,147	12.00%	72,792	52,350	125,142	379,788	(254,647)	379,262	4,849,048									
2009	4,849,048	5,135,309	94.4%	94.4%	(286,261)	615,055	12.00%	74,821	53,746	128,568	396,738	(268,170)	388,984	4,969,862									
2010	4,969,862	5,252,847	94.6%	94.6%	(282,985)	631,963	12.00%	76,850	55,204	132,054	413,705	(281,651)	398,396	5,086,607									
2011	5,086,607	5,363,595	94.8%	94.8%	(276,988)	648,871	12.00%	78,879	56,661	135,540	430,812	(295,272)	407,465	5,198,800									
2012	5,198,800	5,467,924	95.1%	95.1%	(269,124)	665,779	12.00%	81,266	58,376	139,642	446,937	(307,295)	416,225	5,307,730									
2013	5,307,730	5,566,463	95.4%	95.4%	(258,733)	688,654	12.00%	84,011	60,348	144,359	462,634	(318,275)	424,759	5,414,213									
2014	5,414,213	5,660,097	95.7%	95.7%	(245,883)	711,529	9.47%	88,489	62,320	130,808	476,274	(345,465)	432,422	5,501,170									
2015	5,501,170	5,749,967	95.7%	95.7%	(248,797)	734,404	9.21%	88,700	64,292	132,992	488,394	(355,402)	439,186	5,584,954									
2016	5,584,954	5,837,471	95.7%	95.7%	(252,517)	757,279	8.94%	88,686	66,263	134,949	499,178	(364,229)	445,734	5,666,459									
2017	5,666,459	5,924,263	95.6%	95.6%	(257,804)	780,154	8.87%	90,933	68,612	139,184	509,178	(369,994)	452,221	5,748,686									
2018	5,748,686	6,012,254	95.6%	95.6%	(263,568)	811,780	8.81%	92,917	71,338	144,256	518,380	(374,124)	458,834	5,833,396									
2019	5,833,396	6,103,609	95.6%	95.6%	(270,212)	843,406	8.73%	94,993	74,065	149,057	524,510	(375,452)	465,768	5,923,712									
2020	5,923,712	6,200,751	95.5%	95.5%	(277,040)	875,032	8.78%	96,180	76,791	154,971	532,215	(377,244)	473,145	6,019,613									
2021	6,019,613	6,306,361	95.5%	95.5%	(286,748)	906,658	8.83%	98,451	79,517	160,967	539,791	(378,823)	480,992	6,121,781									
2022	6,121,781	6,423,372	95.3%	95.3%	(301,591)	938,284	8.88%	98,478	82,291	167,075	548,143	(381,068)	489,328	6,230,041									

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

1.5 Actuarial Projections (continued)

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

As of June 30	Investment Return	Valuation Amounts on July 1					Flow Amounts During Following 12 Months					Annual Population Increase				Ending Asset Value
		Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings			
1997		3,120,044	3,320,069	94.0%	(200,025)	466,455	12.00%	56,915	41,500	98,415	200,206	(101,791)	253,205	3,271,457		
1998		3,271,457	3,482,865	93.9%	(211,407)	482,122	12.00%	58,826	42,845	101,671	206,877	(105,205)	265,556	3,431,808		
1999		3,431,808	3,655,980	93.9%	(224,173)	498,315	12.00%	60,402	43,943	104,345	226,239	(121,894)	278,096	3,588,010		
2000		3,588,010	3,820,820	93.9%	(232,810)	508,390	12.00%	61,905	44,985	106,890	240,393	(133,503)	290,504	3,745,011		
2001		3,745,011	3,985,310	94.0%	(240,299)	523,366	12.00%	63,767	46,284	110,051	256,097	(146,046)	302,939	3,901,904		
2002		3,901,904	4,149,042	94.0%	(247,138)	539,414	12.00%	65,865	47,752	113,617	273,138	(159,520)	315,327	4,057,711		
2003		4,057,711	4,305,274	94.2%	(247,564)	558,339	12.00%	68,136	49,342	117,478	291,766	(174,288)	327,572	4,210,994		
2004		4,210,994	4,460,028	94.4%	(249,034)	577,263	12.00%	70,407	50,928	121,335	310,007	(188,672)	339,624	4,361,946		
2005		4,361,946	4,612,005	94.6%	(250,058)	596,187	12.00%	72,678	52,510	125,188	329,135	(203,947)	351,448	4,509,447		
2006		4,509,447	4,760,182	94.7%	(250,736)	615,112	12.00%	74,949	54,088	129,037	345,854	(216,817)	363,086	4,655,716		
2007		4,655,716	4,903,815	94.9%	(248,100)	634,036	12.00%	77,661	55,981	133,642	364,157	(230,515)	374,588	4,799,789		
2008		4,799,789	5,042,436	95.2%	(242,648)	660,321	12.00%	80,816	58,187	139,003	381,043	(242,040)	385,998	4,943,747		
2009		4,943,747	5,175,853	95.5%	(232,107)	686,605	12.00%	83,970	60,388	144,358	398,181	(253,823)	397,389	5,087,312		
2010		5,087,312	5,304,153	95.9%	(216,841)	712,890	12.00%	87,124	62,657	149,780	415,372	(265,591)	408,748	5,230,469		
2011		5,230,469	5,427,698	96.4%	(197,230)	739,174	12.00%	90,278	64,925	155,203	432,743	(277,540)	420,065	5,372,994		
2012		5,372,994	5,547,129	96.9%	(174,135)	765,459	12.00%	94,033	67,625	161,658	449,176	(287,517)	431,412	5,516,889		
2013		5,516,889	5,663,361	97.4%	(146,473)	801,758	12.00%	98,389	70,758	169,147	465,227	(296,080)	442,930	5,663,738		
2014		5,663,738	5,777,590	98.0%	(113,851)	838,058	7.55%	64,636	73,891	138,527	479,277	(340,750)	453,202	5,776,191		
2015		5,776,191	5,891,285	98.0%	(115,094)	874,357	7.16%	63,946	77,023	140,970	491,887	(350,917)	462,060	5,887,334		
2016		5,887,334	6,006,195	98.0%	(118,861)	910,657	6.76%	62,800	80,156	142,956	503,283	(360,327)	470,842	5,997,848		
2017		5,997,848	6,124,345	97.9%	(126,497)	946,956	6.73%	65,467	83,901	149,368	513,996	(364,628)	479,782	6,113,001		
2018		6,113,001	6,248,036	97.8%	(135,034)	997,446	6.73%	68,858	88,258	157,116	524,017	(366,901)	489,188	6,235,288		
2019		6,235,288	6,379,847	97.7%	(144,559)	1,047,937	6.70%	71,943	92,616	164,558	531,092	(366,534)	499,292	6,368,046		
2020		6,368,046	6,522,634	97.6%	(154,588)	1,098,427	6.83%	76,696	96,973	173,669	540,277	(366,608)	510,241	6,511,679		
2021		6,511,679	6,679,529	97.5%	(167,850)	1,148,917	6.94%	81,532	101,330	182,862	549,661	(366,799)	522,083	6,666,963		
2022		6,666,963	6,853,943	97.3%	(186,980)	1,199,408	7.06%	86,482	105,783	192,265	560,119	(367,853)	534,851	6,833,960		

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

Table 6

1.5 Actuarial Projections (continued)

State of Alaska TRS
Financial Projections ('000 omitted)

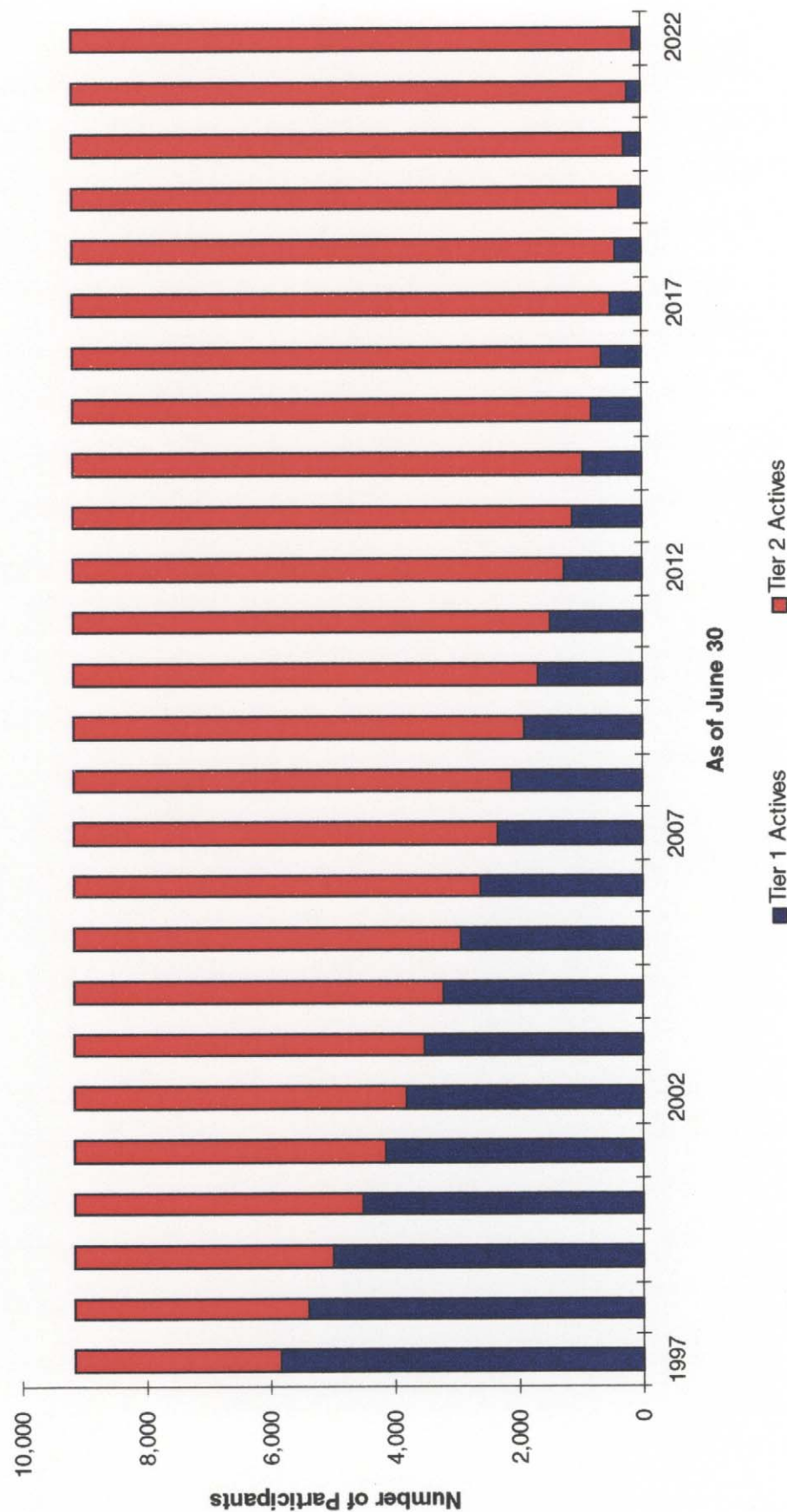
As of June 30	Investment Return			Flow Amounts During Following 12 Months				Annual Population Increase				2.00%	
	Total Assets	Accrued Liability	Funding Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments	Net Contribs	Investment Earnings	Ending Asset Value
1997	3,120,044	3,320,069	94.0%	(200,025)	466,455	12.00%	57,128	41,608	98,737	200,206	(101,469)	253,218	3,271,793
1998	3,271,793	3,482,910	93.9%	(211,117)	485,683	12.00%	59,483	43,274	102,757	206,877	(104,119)	265,628	3,433,301
1999	3,433,301	3,656,414	93.9%	(223,113)	505,703	12.00%	61,546	44,723	106,269	226,278	(120,009)	278,297	3,591,589
2000	3,591,589	3,822,027	94.0%	(230,438)	520,057	12.00%	63,592	46,157	109,749	240,500	(130,751)	290,913	3,751,751
2001	3,751,751	3,987,748	94.1%	(235,997)	539,806	12.00%	66,058	47,892	113,950	256,303	(142,353)	303,647	3,913,045
2002	3,913,045	4,153,245	94.2%	(240,200)	561,158	12.00%	68,906	49,899	118,805	273,463	(154,658)	316,447	4,074,834
2003	4,074,834	4,311,746	94.5%	(236,912)	587,272	12.00%	72,040	52,109	124,148	292,236	(168,088)	329,240	4,235,987
2004	4,235,987	4,469,632	94.8%	(233,645)	613,387	12.00%	75,173	54,313	129,486	310,645	(181,159)	341,996	4,396,824
2005	4,396,824	4,625,715	95.1%	(228,891)	639,502	12.00%	78,307	56,512	134,819	329,978	(195,159)	354,688	4,556,352
2006	4,556,352	4,779,119	95.3%	(222,766)	665,617	12.00%	81,441	58,705	140,146	346,850	(206,703)	367,373	4,717,022
2007	4,717,022	4,929,273	95.7%	(212,251)	691,732	12.00%	85,265	61,391	146,656	365,326	(218,670)	380,134	4,878,486
2008	4,878,486	5,075,917	96.1%	(197,431)	729,351	12.00%	89,779	64,566	154,346	382,406	(228,060)	393,068	5,043,494
2009	5,043,494	5,219,099	96.6%	(175,605)	766,971	12.00%	94,294	67,734	162,028	399,767	(237,739)	406,282	5,212,037
2010	5,212,037	5,359,176	97.3%	(147,139)	804,591	12.00%	98,808	70,977	169,785	417,218	(247,433)	419,786	5,384,390
2011	5,384,390	5,496,813	98.0%	(112,424)	842,211	12.00%	103,322	74,220	177,542	434,899	(257,357)	433,596	5,560,629
2012	5,560,629	5,632,986	98.7%	(72,357)	879,830	12.00%	108,797	78,153	186,950	451,695	(264,745)	447,831	5,743,716
2013	5,743,716	5,768,976	99.6%	(25,261)	933,455	12.00%	115,232	82,775	198,007	468,165	(270,158)	462,713	5,936,271
2014	5,936,271	5,906,377	100.5%	29,894	987,080	5.94%	60,247	87,398	147,645	482,698	(335,053)	475,921	6,077,139
2015	6,077,139	6,047,087	100.5%	30,051	1,040,705	5.49%	58,570	92,020	150,590	495,887	(345,297)	487,120	6,218,962
2016	6,218,962	6,193,317	100.4%	25,645	1,094,330	4.57%	51,244	96,642	147,887	507,997	(360,111)	498,210	6,357,061
2017	6,357,061	6,347,585	100.1%	9,476	1,147,955	4.63%	54,910	102,246	157,156	519,546	(362,389)	509,509	6,504,181
2018	6,504,181	6,512,718	99.9%	(8,537)	1,224,352	4.78%	60,339	108,832	169,171	530,534	(361,363)	521,689	6,664,507
2019	6,664,507	6,691,850	99.6%	(27,343)	1,300,749	5.07%	67,861	115,417	183,278	538,725	(355,447)	535,160	6,844,219
2020	6,844,219	6,888,426	99.4%	(44,206)	1,377,146	5.44%	76,934	122,003	198,937	549,591	(350,655)	550,184	7,043,748
2021	7,043,748	7,106,199	99.1%	(62,451)	1,453,543	5.66%	84,435	128,588	213,023	561,030	(348,007)	566,754	7,262,495
2022	7,262,495	7,349,231	98.8%	(86,736)	1,529,941	5.85%	91,810	135,347	227,157	573,892	(346,735)	584,853	7,500,613

* Surpluses reduce employer contributions over 5 years

* Deficits increase employer contributions over 25 years

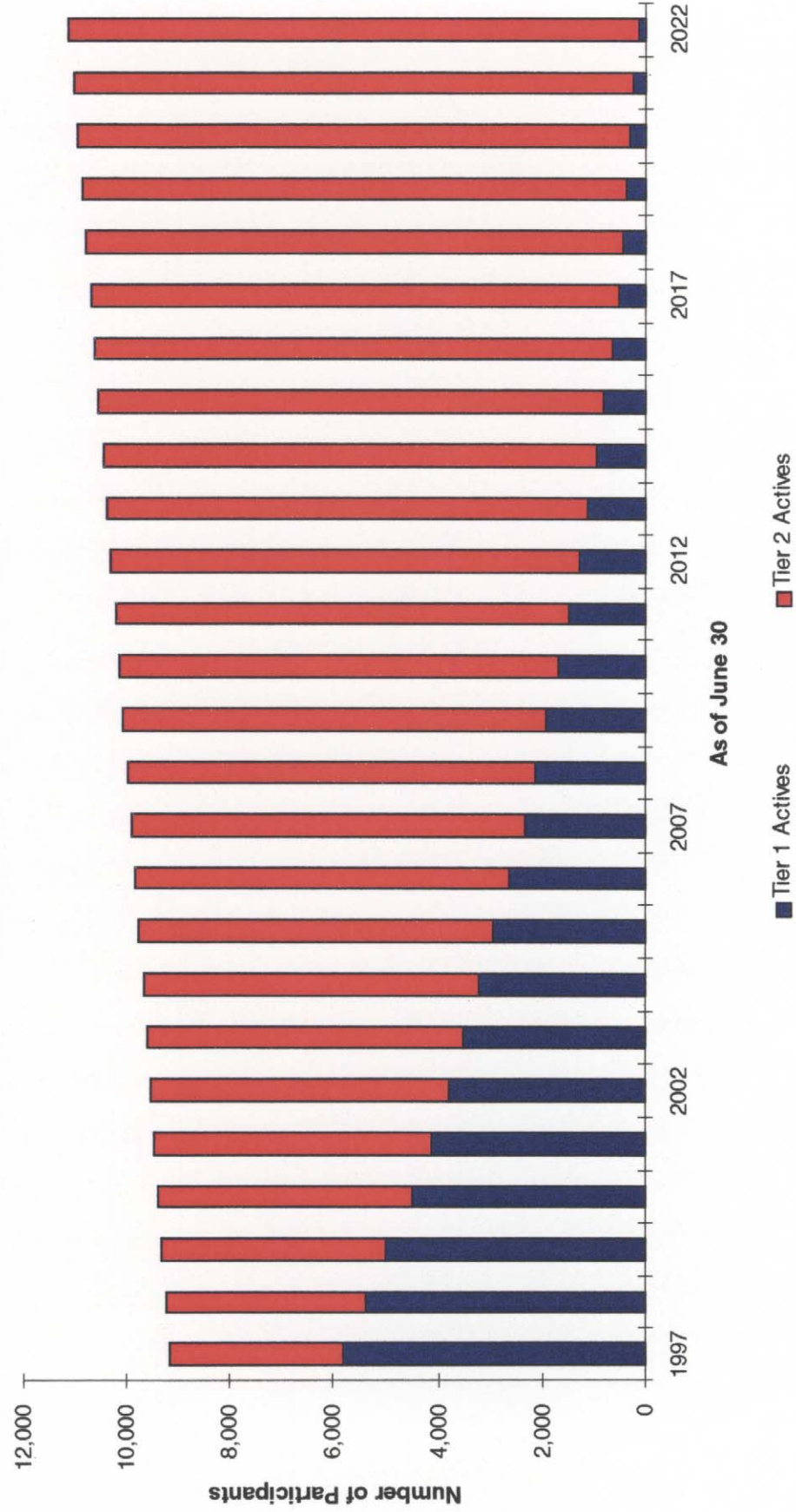
1.5 Actuarial Projections (continued)

**State of Alaska TRS Projected Active Participant Count Annual
Population Increase 0%**



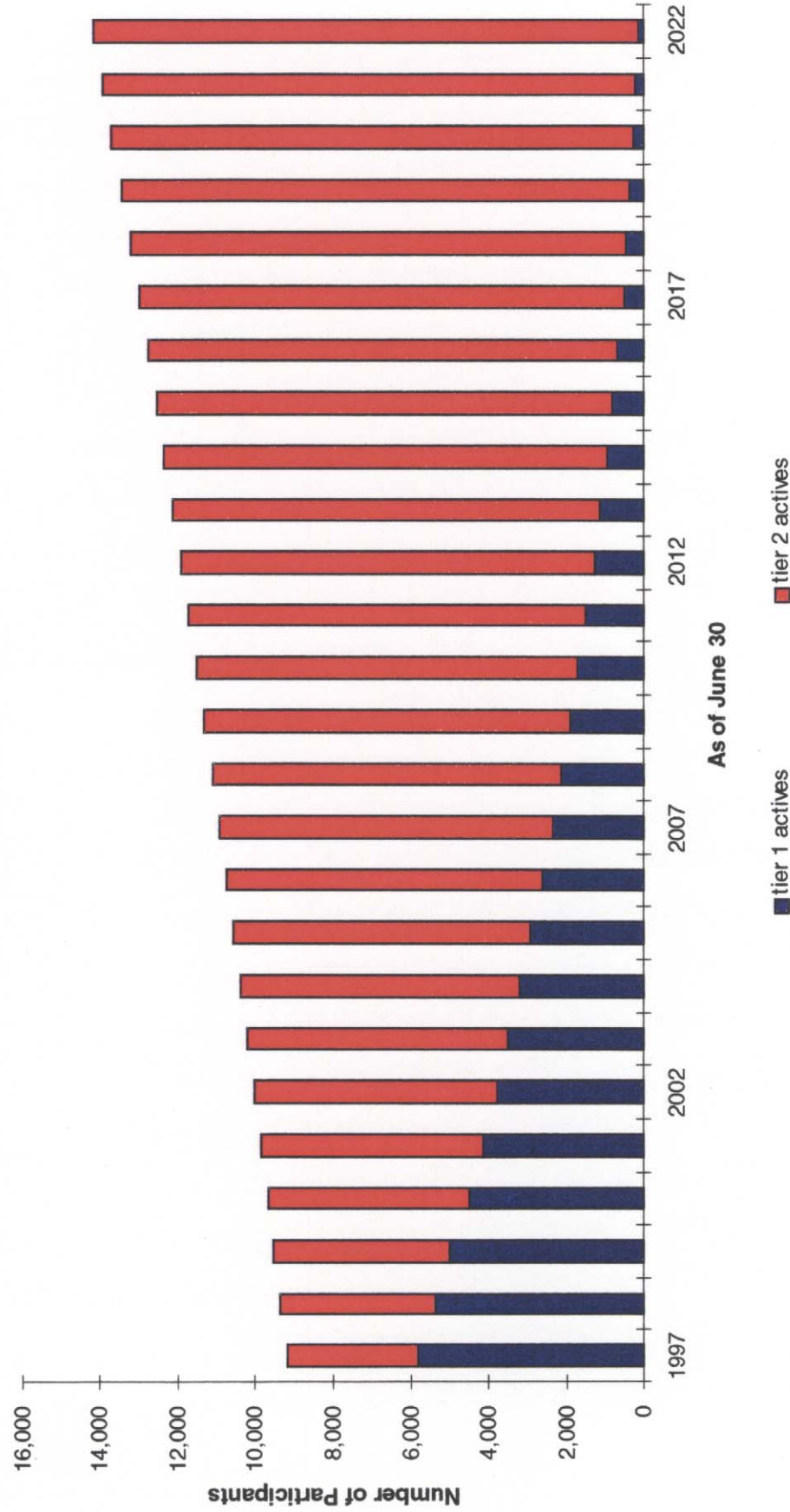
1.5 Actuarial Projections (continued)

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



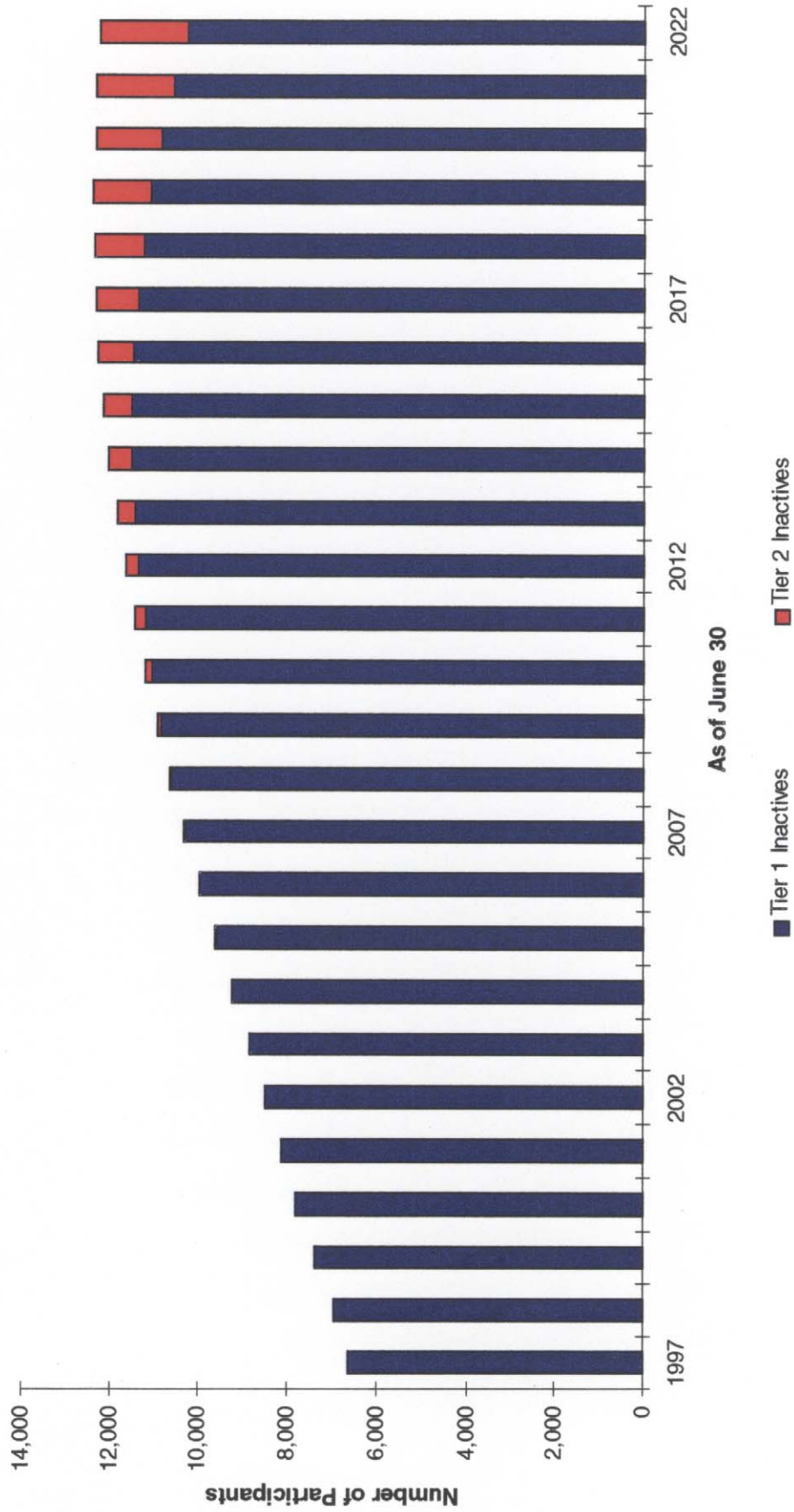
1.5 Actuarial Projections (continued)

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



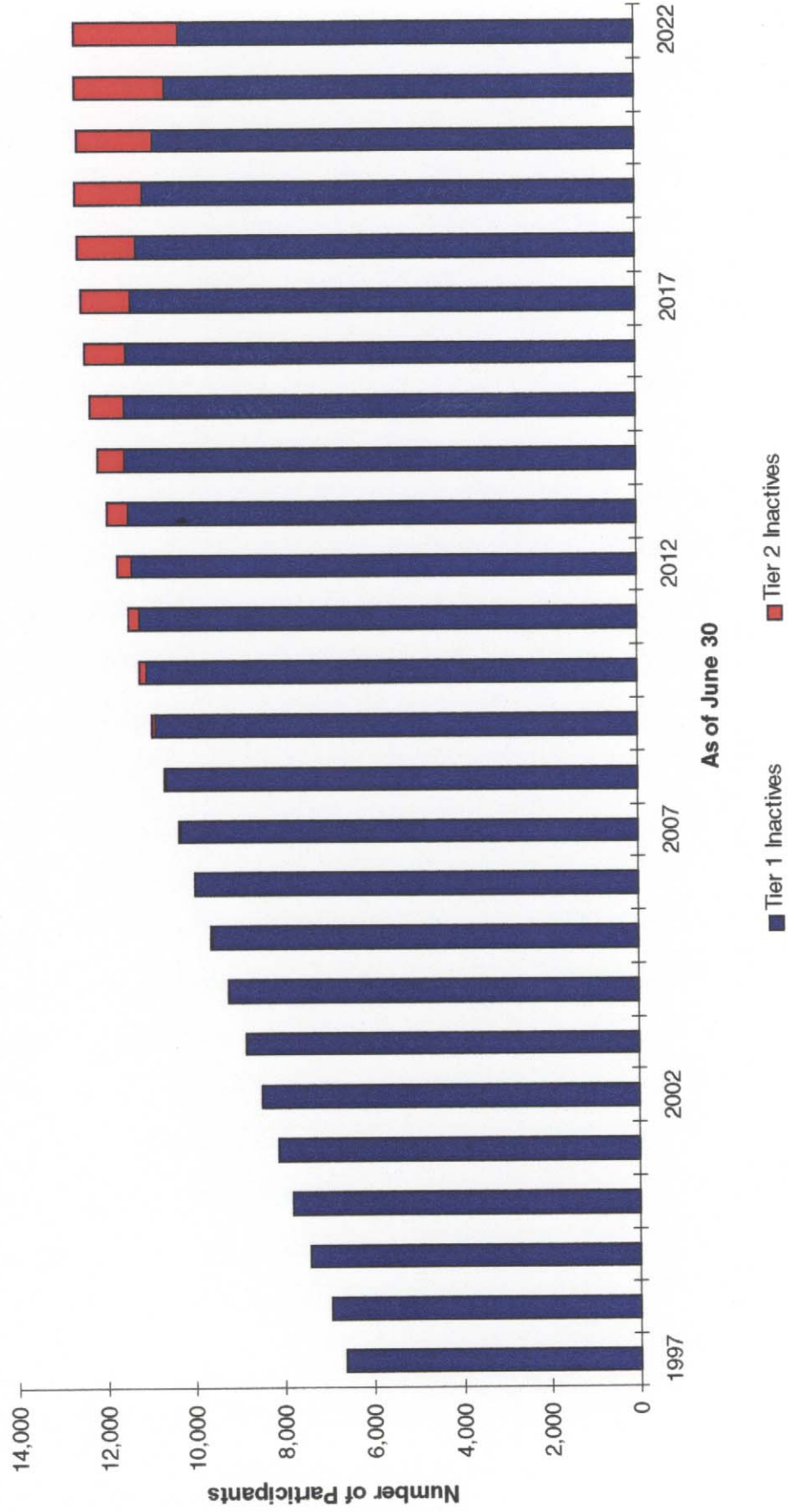
1.5 Actuarial Projections (continued)

**State of Alaska TRS Projected Inactive Participant Count Annual
Population Increase 0%**



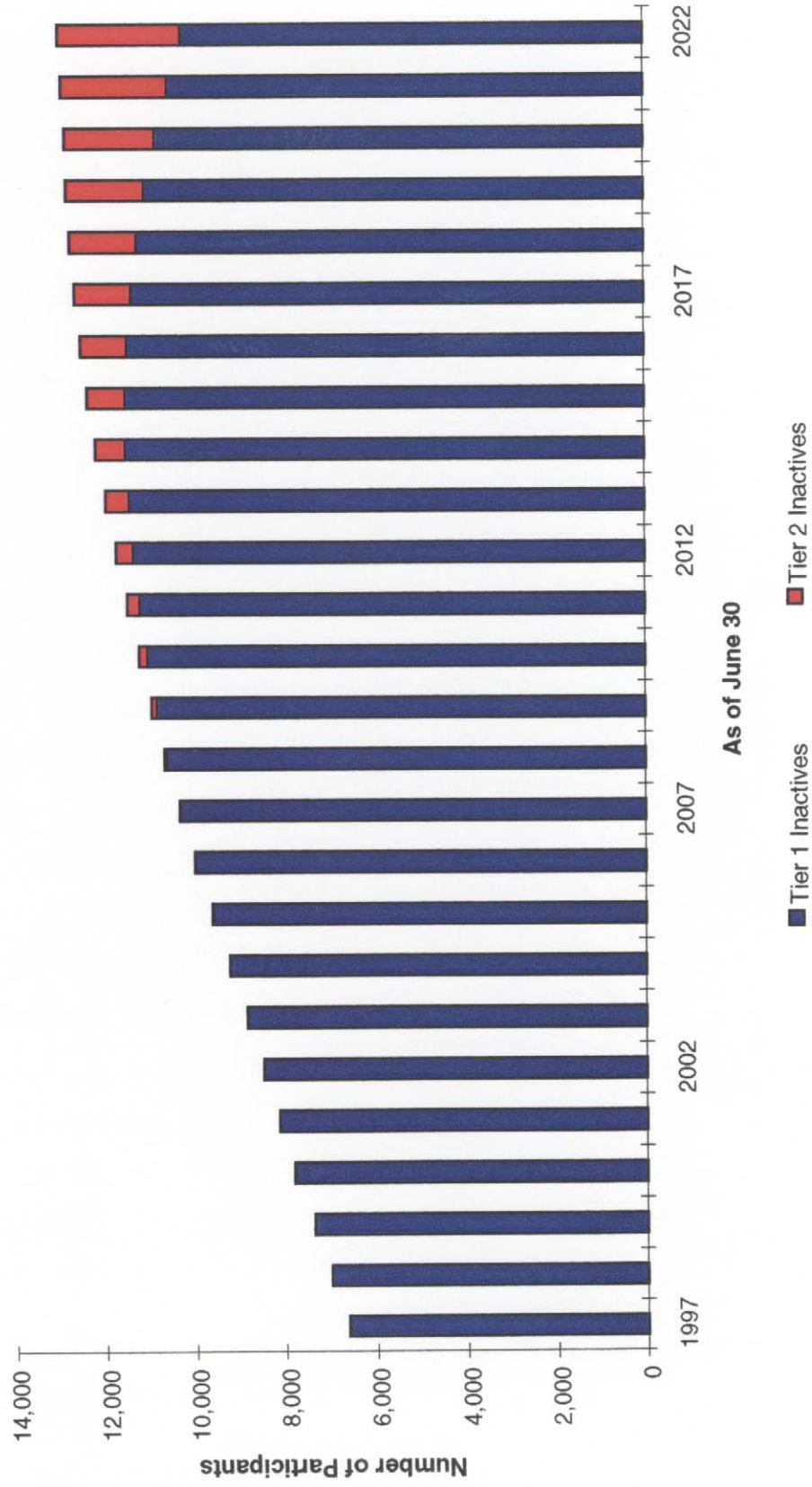
1.5 Actuarial Projections (continued)

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



1.5 Actuarial Projections (continued)

**State of Alaska TRS Projected Inactive Participant Count
Annual Population Increase 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, 1996. 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. Members who were first hired after June 30, 1996 are eligible for different health benefits than members from the other tiers.

(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.

2.1 Summary of the Alaska Teachers' Retirement System (continued)

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

2.1 Summary of the Alaska Teachers' Retirement System *(continued)*

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 60¹, 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).
- (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

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

2.1 Summary of the Alaska Teachers' Retirement System (continued)

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 are refunded 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

2.1 Summary of the Alaska Teachers' Retirement System *(continued)*

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.

2.1 Summary of the Alaska Teachers' Retirement System *(continued)*

(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

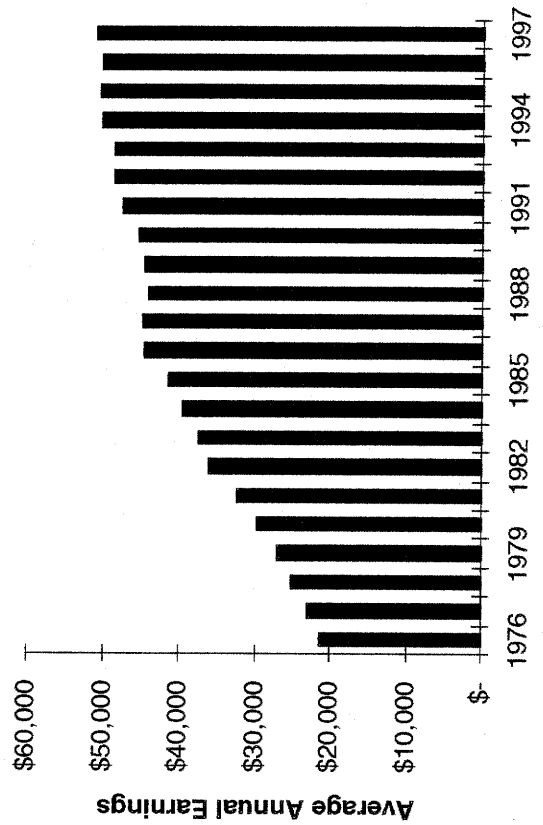
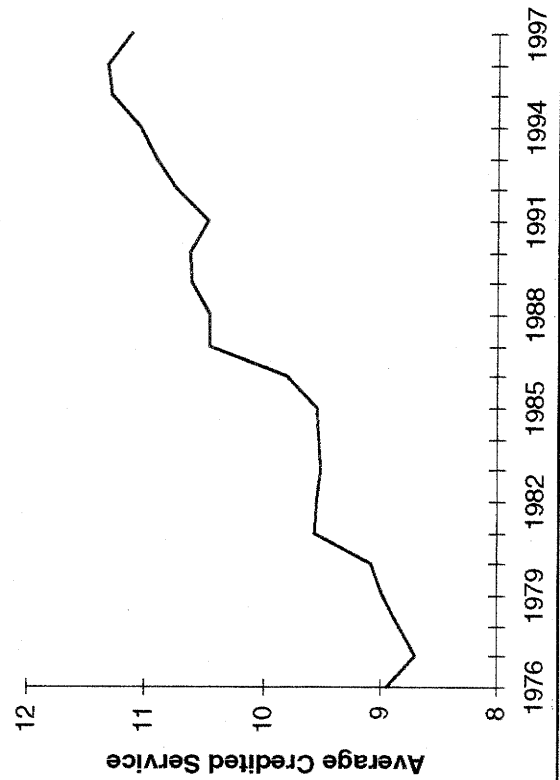
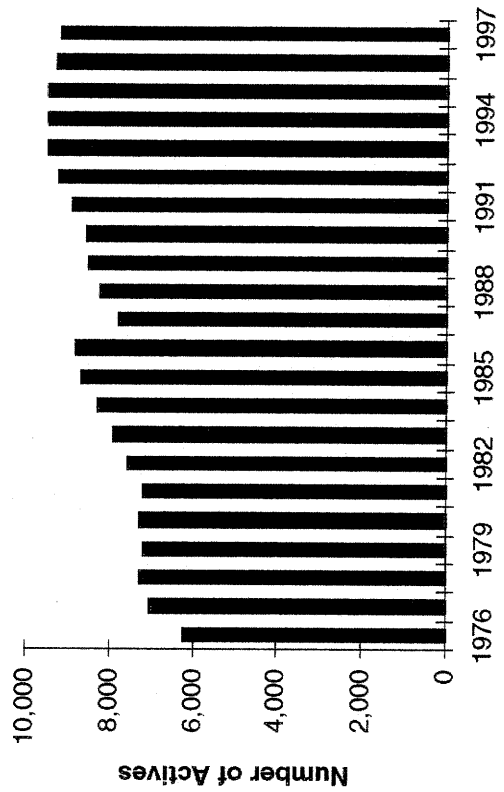
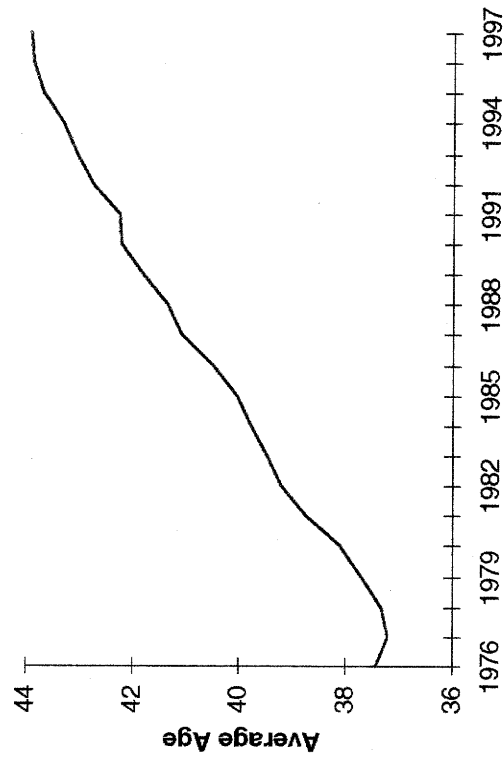
Eligible benefit recipients who reside in Alaska receive an Alaska cost of living allowance (COLA) equal to 10% of their base benefits. The following benefit recipients are eligible:

- (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>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Active Members					
(1) Number	9,459	9,489	9,452	9,259	9,164
(2) Average Age	43.06	43.32	43.68	43.87	43.93
(3) Average Credited Service	10.92	11.06	11.30	11.33	11.12
(4) Average Annual Salary	\$ 48,604	\$ 50,174	\$ 50,487	\$ 50,241	\$ 50,901
(5) Number Vested	5,604	5,562	5,578	5,491	5,366
(6) Percent Who Are Vested	59.2%	58.6%	59.0%	59.3%	58.6%
Retirees and Beneficiaries					
(1) Number	3,891	4,134	4,459	4,803	5,343
(2) Average Age	62.47	62.73	62.83	62.94	62.87
(3) Average Monthly Benefit:					
Base	\$ 1,598	\$ 1,643	\$ 1,694	\$ 1,703	\$ 1,750
C.O.L.A.	\$ 98	\$ 102	\$ 105	\$ 105	\$ 110
P.R.P.A.	\$ 280	\$ 283	\$ 274	\$ 258	\$ 441
Adjustment	\$ 0	\$ 0	\$ -1	\$ -4	\$ -15
Total	\$ 1,976	\$ 2,028	\$ 2,072	\$ 2,062	\$ 2,286
Vested Terminations					
(1) Number	823	930	859	1,116	1,279
(2) Average Age	47.51	48.10	48.08	49.31	49.62
(3) Average Monthly Benefit	\$ 1,236	\$ 1,294	\$ 1,233	\$ 1,431	\$ 1,471
Non-Vested Terminations With Account Balances					
(1) Number	1,013	1,090	1,140	1,195	1,310
(2) Average Account Balance	\$ 11,208	\$ 11,807	\$ 12,165	\$ 12,782	\$ 14,387

State of Alaska - TRS Actives



2.2(b) Distribution of Active Participants

----- Annual Earnings By Age -----				----- Annual Earnings By Credited Service -----			
Age Groups	Number of People	Total Annual Earnings	Average Annual Earnings	Years of Service	Number of People	Total Annual Earnings	Average Annual Earnings
0-19	0	\$ 0	\$ 0	0	137	\$ 5,099,267	\$ 37,221
20-24	44	1,468,977	33,386	1	651	23,317,229	35,818
25-29	570	20,771,826	36,442	2	492	19,225,554	39,076
30-34	916	37,408,910	40,839	3	449	18,956,071	42,218
35-39	1,261	57,662,392	45,728	4	471	19,746,207	41,924
40-44	1,919	97,229,213	50,667	0- 4	2,200	86,344,328	39,247
45-49	2,248	122,336,353	54,420	5- 9	2,322	109,968,890	47,360
50-54	1,475	85,060,130	57,668	10-14	1,765	96,122,245	54,460
55-59	558	33,624,029	60,258	15-19	1,568	91,416,918	58,302
60-64	137	8,657,038	63,190	20-24	806	49,449,058	61,351
65-69	28	1,759,794	62,850	25-29	408	26,424,087	64,765
70-74	7	428,206	61,172	30-34	83	5,802,581	69,911
75+	1	47,929	47,929	35-39	10	810,957	81,096
				40+	2	115,733	57,867
Total	9,164	\$ 466,454,797	\$ 50,901	Total	9,164	\$ 466,454,767	\$ 50,901

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	44	0	0	0	0	0	0	0	0	44
25-29	498	72	0	0	0	0	0	0	0	570
30-34	446	429	41	0	0	0	0	0	0	916
35-39	359	484	339	79	0	0	0	0	0	1,261
40-44	366	518	484	462	89	0	0	0	0	1,919
45-49	268	453	457	569	393	108	0	0	0	2,248
50-54	151	243	291	328	222	205	35	0	0	1,475
55-59	60	80	119	104	82	73	36	3	1	558
60-64	7	31	27	22	17	18	9	5	1	137
65-69	1	10	6	2	2	3	2	2	0	28
70-74	0	1	1	2	1	1	1	0	0	7
75+	0	1	0	0	0	0	0	0	0	1
Total	2,200	2,322	1,765	1,568	806	408	83	10	2	9,164

2.2(c) Schedule of Active Member Valuation Data

Valuation Date	Number	Annual Payroll (000's)	Annual Average Pay	Percent Increase In Average Pay	Number of Participating Employers
June 30, 1997	9,164	\$ 466,455	\$ 50,901	1.3%	61
June 30, 1996	9,259	465,182	50,241	-.5%	61
June 30, 1995	9,452	477,205	50,487	.6%	61
June 30, 1994	9,489	476,098	50,174	3.2%	61
June 30, 1993	9,459	459,746	48,604	.2%	61
June 30, 1992	9,238	448,186	48,515	2.2%	62
June 30, 1991	8,903	422,655	47,473	4.6%	62
June 30, 1990	8,586	389,702	45,388	1.8%	60
June 30, 1989	8,527	380,267	44,596	1.4%	61
June 30, 1988	8,218	361,310	43,966	-1.7%	63

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

		<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Service						
(1)	Number	158	267	359	308	510
(2)	Average Age At Retirement	52.62	54.14	53.88	53.77	53.68
(3)	Average Monthly Benefit	\$ 2,086	\$ 2,349	\$ 2,358	\$ 2,349	\$ 2,488
Disability						
(1)	Number	4	6	3	13	8
(2)	Average Age At Retirement	48.69	48.31	48.58	52.98	44.02
(3)	Average Monthly Benefit	\$ 2,431	\$ 2,870	\$ 3,353	\$ 2,542	\$ 2,409
Survivor (including surviving spouse and ODROs)						
(1)	Number	3	7	6	20	47
(2)	Average Age At Retirement	49.37	44.47	52.86	53.14	60.37
(3)	Average Monthly Benefit	\$ 930	\$ 2,554	\$ 1,522	\$ 1,038	\$ 1,226
Total						
(1)	Number	165	280	368	341	565
(2)	Average Age At Retirement	52.47	53.77	53.82	53.70	54.10
(3)	Average Monthly Benefit	\$ 2,073	\$ 2,365	\$ 2,352	\$ 2,279	\$ 2,382

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

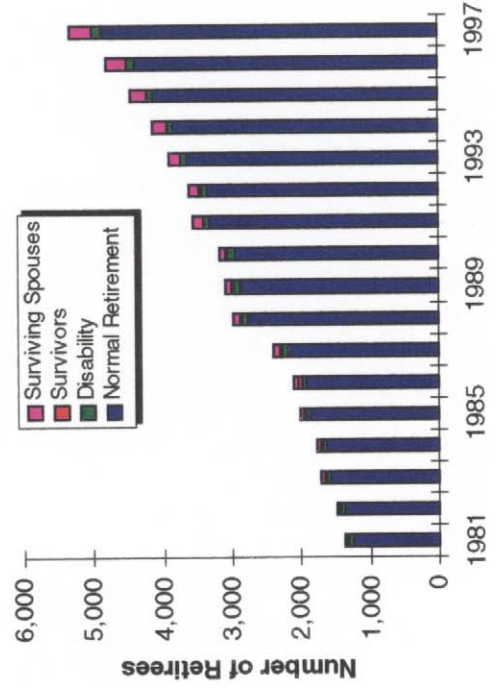
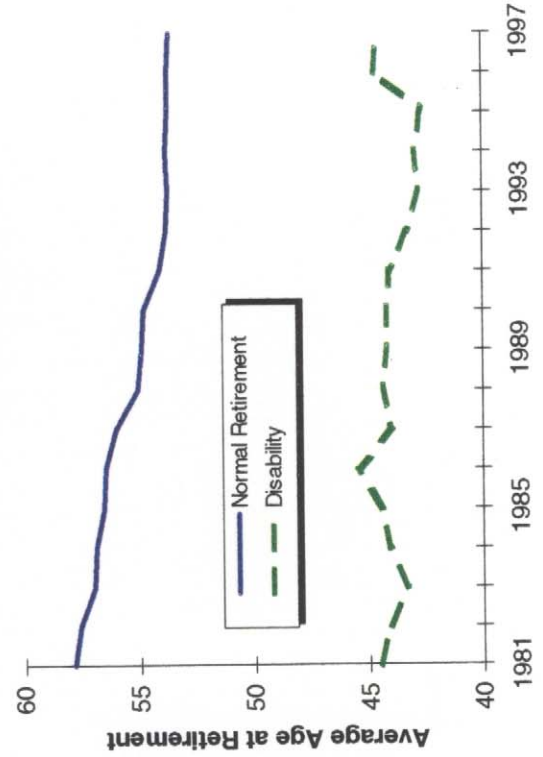
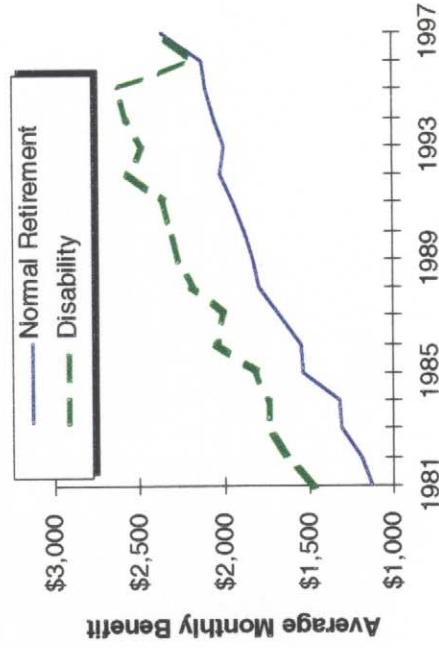
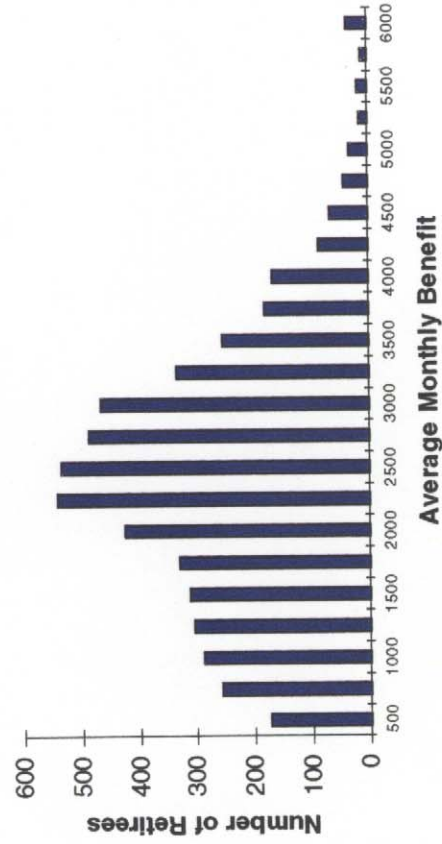
	Years of Credited Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+
Period 7/1/96 - 6/30/97: Average Monthly Benefit Number of Active Retirees	\$ 996 19	\$ 828 42	\$ 1,042 71	\$ 1,692 77	\$ 2,493 151	\$ 3,353 153	\$ 3,812 52
Period 7/1/95 - 6/30/96: Average Monthly Benefit Number of Active Retirees	\$ 952 15	\$ 836 24	\$ 1,145 40	\$ 1,731 31	\$ 2,389 115	\$ 3,138 86	\$ 3,317 30
Period 7/1/94 - 6/30/95: Average Monthly Benefit Number of Active Retirees	\$ 1,204 7	\$ 748 22	\$ 1,033 47	\$ 1,716 36	\$ 2,398 129	\$ 3,041 89	\$ 3,958 38
Period 7/1/93 - 6/30/94: Average Monthly Benefit Number of Active Retirees	\$ 1,161 7	\$ 576 11	\$ 1,151 35	\$ 1,605 24	\$ 2,354 107	\$ 3,176 72	\$ 3,685 24
Period 7/1/92 - 6/30/93: Average Monthly Benefit Number of Active Retirees	\$ 408 7	\$ 1,002 17	\$ 1,015 23	\$ 1,561 9	\$ 2,258 62	\$ 3,090 37	\$ 3,043 10
Period 7/1/91 - 6/30/92: Average Monthly Benefit Number of Active Retirees	\$ 819 4	\$ 1,205 27	\$ 1,941 25	\$ 2,256 17	\$ 2,290 38	\$ 3,159 8	\$ 3,930 1
Period 7/1/90 - 6/30/91: Average Monthly Benefit Number of Active Retirees	\$ 949 14	\$ 1,093 53	\$ 1,689 95	\$ 2,085 155	\$ 2,540 160	\$ 2,944 37	\$ 4,173 5

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

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

	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Service Retirements					
(1) Number, Fiscal Year Start	3,352	3,636	3,831	4,130	4,395
(2) Net Change During FY	284	195	299	265	478
(3) Number, Fiscal Year End	3,636	3,831	4,130	4,395	4,873
(4) Average Age At Retirement	53.75	53.85	53.78	53.78	53.70
(5) Average Age Now	62.60	63.00	63.04	63.20	63.07
(6) Average Monthly Benefit \$	1,998	\$ 2,052	\$ 2,099	\$ 2,126	\$ 2,365
Surviving Spouse's Benefits					
(1) Number, Fiscal Year Start	150	161	200	229	279
(2) Net Change During FY	11	39	29	50	55
(3) Number, Fiscal Year End	161	200	229	279	334
(4) Average Age At Retirement	53.91	51.51	52.04	54.59	55.37
(5) Average Age Now	66.72	64.25	65.06	64.56	64.61
(6) Average Monthly Benefit \$	1,187	\$ 1,299	\$ 1,373	\$ 1,016	\$ 1,132
Survivor's Benefits (other than spouses)					
(1) Number, Fiscal Year Start	2	0	9	8	3
(2) Net Change During FY	(2)	9	(1)	(5)	0
(3) Number, Fiscal Year End	0	9	8	3	3
(4) Average Age At Retirement	--	37.25	28.14	15.12	30.75
(5) Average Age Now	--	42.87	36.03	26.08	40.16
(6) Average Monthly Benefit	--	\$ 2,166	\$ 1,822	\$ 466	\$ 537
Disabilities					
(1) Number, Fiscal Year Start	98	94	94	92	126
(2) Net Change During FY93	(4)	0	(2)	34	7
(3) Number, Fiscal Year End	94	94	92	126	133
(4) Average Age At Retirement	42.85	42.98	42.71	44.74	44.60
(5) Average Age Now	49.97	50.28	50.36	51.31	51.66
(6) Average Monthly Benefit \$	2,484	\$ 2,569	\$ 2,637	\$ 2,185	\$ 2,370
Total Number of Retirees	3,891	4,134	4,459	4,803	5,343

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	2	\$ 9,156	\$ 4,578	0	565	\$ 16,148,462	\$ 28,581
20-24	0	0	0	1	354	9,443,480	26,676
25-29	0	0	0	2	390	10,817,740	27,738
30-34	2	33,458	16,729	3	292	8,213,828	28,130
35-39	5	121,349	24,270	4	186	4,547,494	24,449
40-44	29	653,210	22,524	0- 4	1,787	49,171,004	27,516
45-49	266	7,471,209	28,087	5- 9	1,611	46,549,193	28,895
50-54	865	25,626,556	29,626	10-14	907	26,344,302	29,046
55-59	1,245	34,858,461	27,999	15-19	584	13,947,958	23,883
60-64	988	28,081,569	28,423	20-24	361	8,299,587	22,991
65-69	746	20,337,102	27,262	25-29	75	1,831,797	24,424
70-74	495	12,497,145	25,247	30-34	16	423,871	26,492
75+	700	16,938,745	24,198	35-39	2	60,248	30,124
				40+	0	0	0
Total	5,343	\$ 146,627,960	\$ 27,443	Total	5,343	\$ 146,627,960	\$ 27,443

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	0	1	0	0	0	0	0	2
20-24	0	0	0	0	0	0	0	0	0	0
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	3	2	0	0	0	0	0	0	0	5
40-44	23	4	1	0	0	1	0	0	0	29
45-49	199	60	3	2	2	0	0	0	0	266
50-54	551	276	28	7	1	2	0	0	0	865
55-59	594	502	125	18	4	1	1	0	0	1,245
60-64	267	408	259	47	5	2	0	0	0	988
65-69	99	232	252	145	16	2	0	0	0	746
70-74	34	90	143	172	53	2	1	0	0	495
75+	14	37	96	192	280	65	14	2	0	700
Total	1,787	1,611	907	584	361	75	16	2	0	5,343

2.2(h) Schedule of Retired Members by Type of Retirant and Option Selected - June 30, 1997

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	60	45	14	1	47	8	5	0
301 - 600	206	141	55	10	167	23	9	7
601 - 900	334	248	78	8	271	34	21	8
901 - 1200	359	284	68	7	293	39	20	7
1201 - 1500	376	329	46	1	306	36	28	6
1501 - 1800	403	375	26	2	358	23	17	5
1801 - 2100	565	535	21	9	468	51	40	6
2101 - 2400	638	606	8	24	533	57	40	8
2401 - 2700	617	593	8	16	537	45	29	6
2701 - 3000	550	523	7	20	486	35	26	3
3001 - 3300	388	372	3	13	353	19	14	2
3301 - 3600	281	270	1	10	256	8	13	4
3601 - 3900	214	206	1	7	190	13	6	5
over 3900	352	346	1	5	321	19	9	3
Totals	5,343	4,873	337	133	4,586	410	277	70

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 Contingent Annuity
- Option 4 - 66 2/3% 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, 1997	583	\$29,988,351 ⁽¹⁾	43	\$ 2,211,834 ⁽¹⁾	5,343	\$146,627,960	23.37%	\$ 27,443
June 30, 1996	376	8,410,895	32	441,353	4,803	118,851,443	7.19%	24,745
June 30, 1995	368	10,386,432	43	94,443	4,459	110,881,901	10.23%	24,867
June 30, 1994	280	8,923,551	37	616,360	4,134	100,589,912	9.00%	24,332
June 30, 1993	344	6,874,777	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
* Numbers are estimated, and include other internal transfers.								

⁽¹⁾ Includes additional benefits to current retirees from ad hoc Post-Retirement Pension Adjustments

2.3 Actuarial Basis

The demographic and economic assumptions used in this valuation were recommended by William M. Mercer, Incorporated and were adopted at the Fall 1996 TRS Board Meeting. These assumptions were the result of an experience study performed in the Fall of 1996. 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. Any unfunded accrued liability is amortized over a rolling 25 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 8.25% per year, compounded annually, net of expenses.

2.3 Actuarial Basis *(continued)*

- | | | |
|-----|--------------------|---|
| 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 | 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 1991-95 actual total turnover experience. (See Table 1). |
| 7. | Disability | Incidence rates based upon the 1991-95 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 1991-95 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. |

2.3 Actuarial Basis *(continued)*

- | | | |
|-----|------------------------------------|---|
| 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., 62% 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:

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. | Post-Retirement Pension Adjustment | 50% and 75% of assumed inflation is valued for the automatic Post-Retirement Pension Adjustment (PRPA) as specified in the statute. |
| 16. | 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, LLP. 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 FY97, the pre-65 monthly premium is \$569.14 and the post-65 premium is \$216.80, based on an assumed total blended premium of \$435.38. For FY98, the actual blended premium is \$368.00. The FY98 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 8 Years
of Employment**

<u>Year of Employment</u>	<u>Rate</u>
1	.15
2	.14
3	.12
4	.11
5	.09
6	.08
7	.07
8	.07

**Ultimate Rates of Turnover
After the First 8 Years
of Employment**

<u>Ages</u>	<u>Rate</u>
20+	.04

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

<u>Age</u>	<u>Rate</u>
20	.28
21	.28
22	.29
23	.29
24	.30
25	.30
26	.30
27	.31
28	.32
29	.33
30	.34
31	.34
32	.35
33	.36
34	.37
35	.38
36	.40
37	.41
38	.43
39	.44
40	.46
41	.48
42	.51
43	.54
44	.59
45	.65
46	.70
47	.76
48	.83
49	.89
50	.96
51	1.04
52	1.14
53	1.27
54	1.42
55	1.60
56	1.84
57	2.14
58	2.44
59	2.88
60	3.37
61	3.90
62	4.52
63	5.22
64	5.96

Table 3

Alaska TRS

Retirement Rates

<u>Age at Retirement</u>	<u>Retirement Rate</u>
50	.05
51	.05
52	.05
53	.05
54	.05
55	.15
56	.13
57	.10
58	.10
59	.10
60	.10
61	.10
62	.10
63	.17
64	.17
65	.50
66	1.00

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