

**State of Alaska**

**Public Employees' Retirement System**

**Actuarial Valuation Report  
as of June 30, 1991**

**Prepared by:**

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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 Public Employees' Retirement System as of June 30, 1991;
- (2) review experience under the plan for the year ended June 30, 1991;
- (3) determine the appropriate contribution rates for the State and for each political subdivision in the system;
- (4) provide reporting and disclosure information for financial statements, governmental agencies, and other interested parties.

The report is divided into two sections. Section 1 contains the results of the valuation. It includes the experience of the plan during the 1990-91 plan 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.

The principle results are as follows:

	<u>1990</u>	<u>1991</u>
Funding Status as of June 30:		
(a) Valuation Assets*	\$ 2,677,486	\$ 2,942,121
(b) Accrued Liability*	2,753,518	3,339,145
(c) Funding Ratio, (a) / (b)	97.2%	88.1%

\* In thousands.

Employer Contribution Rates  
for Fiscal Year:

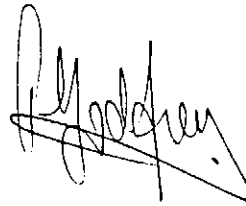
	<u>1993</u>	<u>1994</u>
(a) Consolidated Rate	12.83%	10.18%
(b) Average Past Service Rate	.75%	3.54%
(c) Average Total Contribution Rate	13.58%	13.72%

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions, in conjunction with employee data provided to us by the plan sponsor and financial information provided by Coopers & Lybrand, to determine a sound value for the plan liabilities. We believe that this value and the method suggested for funding it are in full compliance with the Governmental Accounting Standards Board, the Internal Revenue Code, and all applicable regulations.

Respectfully submitted,



Brian R. McGee, FSA  
Principal



Peter L. Godfrey, FIA  
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BRM/PLG/jls

April 29, 1992

## Analysis of the Valuation

As shown in the Highlights section of the report, the funding ratio as of June 30, 1991 has decreased from 97.2% to 88.1%, a reduction of 9.1%. The average employer contribution rate has increased from 13.58% of payroll for FY93 to 13.72% for FY94, an increase of 0.14% of payroll. The reasons for the change in the funded status and contribution rate are explained below.

### 1. Retiree Medical Insurance

As you are aware, retiree medical premium experience has, in recent years, caused large fluctuations in the employer contribution rate. 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	24%	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	--	11%
1993	226.90	- 7%	10%

As you can see from the above table, the monthly retiree medical premium remained unchanged during the year, at \$243.98. The premium for the 1993 fiscal year has reduced to \$226.90, a decrease of 7%.

In years prior to FY92, the post-65 premium rates were increasing faster than pre-65 rates. The FY92 rates remained unchanged and the trend reversed in FY93. The post-65 FY93 rate reduced by 10.8% while the pre-65 FY93 rate reduced by 2.6%. The combined effects of a reduction in the FY93 rate and the FY92 rate remaining unchanged resulted in an actuarial gain to the System from retiree medical premiums.

Fluctuations in the health premium affect not only the past service contribution rate (due to actuarial gains and losses) but also the normal cost rate. Last year's medical premium experience resulted in a reduction in the consolidated rate of 1.87% and a reduction in the past service rate of 1.30%.

## **2. Investment Performance**

Investment return was less than expected during the year resulting in an actuarial loss to the System. The approximate rate of return based on market values was 7.08%. The effect of the five-year smoothing technique was a rate of return based on valuation assets of 7.03%. As this rate was lower than the assumed rate of return of 9%, the System experienced an actuarial loss from investment performance equal to \$53,425,000 which had the effect of increasing the average employer contribution rate by 0.48%.

## **3. Salary Increases**

Last year, salary increases were slightly higher than anticipated in the valuation assumptions. Salary experience resulted in a small actuarial loss which generated an increase in the average employer contribution rate equal to 0.26%.

## **4. Employee Data**

Section 2.2 provides statistics on active and inactive participants. The number of active participants increased 2.6% from 29,086 at June 30, 1990 to 29,840 at June 30, 1991. The average age of active participants increased from 40.37 to 40.68 and average credited service increased from 6.82 to 6.91 years.

The number of retirees and beneficiaries increased 13.5% from 7,365 to 8,358, and their average age decreased from 63.62 to 63.15. There was a 9.8% increase in the number of vested terminated participants from 2,745 to 3,015. Their average age increased from 42.96 to 43.20.

The overall effect of these participant data changes was an actuarial loss to the System, resulting in an increase in the past service rate equal to 1.33%. These demographic changes also had the effect of increasing the consolidated rate by 0.69%.

## **5. Retirement Incentive Program**

The second Retirement Incentive Program has been available to University of Alaska participants since June 30, 1989 and to other participants since October 1, 1989. University of Alaska participants had until August 1, 1990 to retire and other PERS participants had to retire by November 1, 1990 to qualify for the RIP. The retirement deadline was later extended to November 1, 1991 for all PERS participants except State and University of Alaska employees. The effects of the RIP can be seen in the increase in the number of new service retirees between June 30, 1989 and June 30, 1991. There were 456 new retirees during the year ending June 30, 1990 and 925 new retirees during the year ending June 30, 1991. Furthermore, the average age of all retirees decreased from 63.62 to 63.15 during the year ending June 30, 1991 reflecting the younger average age of members retiring under the RIP.

As with the first RIP, the cost is being borne by employers based on the actuarial value of the extra benefits, calculated individually for each employee electing to retire under the program. This cost is being paid over a three-year period. If the assumptions underlying the calculated cost of the RIP are met, the total cost to the System will be equal to the employers' payments.

## **6. Change in Actuarial Assumptions**

The report on the Study of Actuarial Assumptions in October 1991 proposed a revised set of valuation assumptions using the actual experience of the System during the five-year period 1986-90. The analysis resulted in revisions to the assumptions for the investment return, the future health premium trend, mortality, turnover, disability, retirement and the percentage of benefit recipients expected to remain in Alaska. All assumptions are described in detail in Section 2.3 of the report.

You will note that the mortality table used in this report for police/fire members is the same as the table used for "other" male members. This is different from the Study of Actuarial Assumptions, where we proposed using the 1984 Unisex Pension Mortality Table, set forward 19 years, for police/fire members. Upon further review of the data, we believe that number of exposures was insufficient to support this conclusion, and we recommend that the Board retain the "others" mortality table for police/fire members until more data emerges to support a change. This will add approximately .76% to the total contribution rate.

The overall effect on the financial status of the System due to the revised assumptions is no change in the funding ratio and a 0.55% of payroll increase in the contribution rate.



## 7. Actuarial Projections

At the Spring 1991 Board Meetings, the PERS 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 two-tiered systems, such as PERS. 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 1.5, based on the actuarial assumptions and cost method, future contribution rates are expected to increase slightly over the next 15 years and then decline. This reflects the fact that many of the second tier employees are already in PERS and affecting the rate. Also, health premiums are expected to increase faster than salaries, putting upward pressure on the costs.

Sometimes, when second tiers are phasing in to a system, sound actuarial principles would support leveling out this contribution pattern to more quickly anticipate the second tier provisions coming into effect. In this way, a more stable contribution pattern could be adopted to help the State and political subdivisions 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 some seen in the past.

For your information, we have included in Section 1.5 graphs and charts showing the effect of a smoothed 13.25% rate over 20 years. This rate includes a degree of conservatism for the following reasons:

1. 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.
2. 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.

The effect of the second tier is already being felt in PERS because second tier participants began entering the System in 1986. Over 50% of current active participants are already second tier. For this reason, contribution rates are already reflecting some of the cost savings provisions of tier 2 and are not expected to decline in the short run. Another factor which retards the expected decline in contribution rates is the anticipated increases in future health premiums.

As contribution rates are not expected to decline significantly for about 20 years, we recommend the Board adopt the calculated rate of 13.72%, instead of the smoothed rate of 13.25%, for FY94. We will continue to monitor the expected pattern of future rates to take into account actual tier 2 patterns, System experience and changes in the Statute. Some smoothing of the contribution rate may be appropriate in the future, depending on how these factors affect projected contribution rates.

### Summary

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

(1) Last year's average employer contribution rate .....	13.58%
(2) Decrease in past service rate due to retiree medical insurance .....	(1.30%)
(3) Decrease in consolidated rate due to retiree medical insurance .....	(1.87%)
(4) Increase due to investment performance .....	0.48%
(5) Increase due to salary increases .....	0.26%
(6) Increase in past service rate due to employee data .....	1.33%
(7) Increase in consolidated rate due to employee data .....	0.69%
(8) Increase in average employer contribution rate due to change in actuarial assumptions .....	0.55%
(9) Average employer contribution rate this year .....	13.72%

# **Section 1**

## **Valuation Results**

This section sets forth the results of the actuarial valuation.

Section 1.1(a) shows the distribution of net assets as of June 30, 1991.

Section 1.1(b) shows the transactions of the plan's fund during FY91.

Section 1.1(c) develops the valuation assets as of June 30, 1991.

Section 1.2(a) shows the actuarial present values for Police and Fire members as of June 30, 1991.

Section 1.2(b) shows the actuarial present values for "Other" members as of June 30, 1991.

Section 1.3(a) develops the average employer contribution rate for Police and Fire members - FY94.

Section 1.3(b) develops the average employer contribution rate for "Other" members - FY94.

Section 1.3(c) develops the average employer contribution rate for all members - FY94.

Section 1.4 calculates the actuarial gain or loss for FY91.

### 1.1(a) Statement of Net Assets as of June 30, 1991 (in thousands)

	<u>Book Value</u>	<u>Actuarial Value*</u>
Cash and Cash Equivalents	\$ 29,533	\$ 29,533
United States Government Bonds	712,544	712,544
Corporate Bonds	581,707	581,707
United States Common Stocks	1,028,345	1,165,967
Foreign Stocks	185,214	176,812
Real Estate Equities	146,681	134,468
Mortgages (Net of Reserves)	89,065	89,065
Accrued Receivables	<u>52,025</u>	<u>52,025</u>
Total Assets	\$ 2,825,114	\$ 2,942,121

\* The actuarial value of assets is the fair market value of equities and the book value of fixed income investments, as provided in the audited financial statements.

## 1.1(b) Changes in Net Assets During Fiscal Year 1991 (in thousands)

Net Assets, June 30, 1990, (market value) \$ 2,746,555

### Additions:

Employee Contributions	\$ 75,767	
Employer Contributions	116,404	
Contributions for Retirement Incentive Program:		
Employee Contributions	719	
Employer Contributions	15,998	
Interest Income and Realized Gain (Loss)	152,127	
Dividend Income	49,422	
Unrealized Gain (Loss) on Investments	<u>516</u>	410,953

### Deductions:

Medical Benefits	\$ 23,332	
Retirement Benefits	99,651	
Refunds of Contributions	11,965	
Administrative Expenses	<u>5,019</u>	139,967

Net Assets, June 30, 1991, (market value) \$ 3,017,541

### Approximate Investment Return Rate During the Year, Net of Administrative Expenses:

Based on Market Values	7.08%
Based on Valuation Assets	7.03%

### 1.1(c) Development of Valuation Assets as of June 30, 1991 (in thousands)

	A	B	C
	<u>Actuarial Value</u>	<u>Book Value</u>	<u>Ratio (A/B)</u>
(1) June 30, 1991	\$ 2,942,121	\$ 2,825,114	1.0414
(2) June 30, 1990	2,677,486	2,553,305	1.0486
(3) June 30, 1989	2,348,423	2,277,181	1.0313
(4) June 30, 1988	2,088,428	1,999,221	1.0446
(5) June 30, 1987	1,961,836	1,774,732	1.1054
(6) Average Ratio			1.0543
(7) Book Value at June 30, 1991			\$ 2,825,114
(8) Valuation Assets at June 30, 1991, (6) x (7) but not outside the range of book and actuarial values			\$ 2,942,121

**1.2(a) Actuarial Present Values as of June 30, 1991  
Police and Fire Members (in thousands)**

	<u>Normal Cost</u>	<u>Accrued Liability</u>
<u>Active Members</u>		
Retirement Benefits	\$ 14,571	\$ 212,804
Termination Benefits	605	6,136
Disability Benefits	704	13,555
Death Benefits	452	8,987
Return of Contributions	295	1,940
Medical Benefits	5,292	60,474
Indebtedness	0	(7,277)
Retirement Incentive Program Receivables	<u>0</u>	<u>(1,733)</u>
Subtotal	\$ 21,919	\$ 294,886
<u>Inactive Members</u>		
Not Vested		\$ 340
Vested Terminations	- Retirement Benefits	4,863
	- Medical Benefits	6,684
Retirees & Beneficiaries	- Retirement Benefits	187,145
	- Medical Benefits	<u>29,408</u>
Subtotal		\$ 228,440
<u>Totals</u>		\$ 523,326

**1.2(b) Actuarial Present Values as of June 30, 1991**  
**"Other" Members (in thousands)**

	<u>Normal Cost</u>	<u>Accrued Liability</u>
<u>Active Members</u>		
Retirement Benefits	\$ 65,729	\$ 748,979
Termination Benefits	17,977	168,263
Disability Benefits	3,191	42,594
Death Benefits	3,605	53,280
Return of Contributions	5,729	25,564
Medical Benefits	56,767	431,888
Indebtedness	0	(33,085)
Retirement Incentive Program Receivables	<u>0</u>	<u>(14,814)</u>
Subtotal	\$152,998	\$ 1,422,669
<u>Inactive Members</u>		
Not Vested		\$ 8,385
Vested Terminations	- Retirement Benefits	102,097
	- Medical Benefits	155,347
Retirees & Beneficiaries	- Retirement Benefits	909,532
	- Medical Benefits	<u>217,789</u>
Subtotal		\$ 1,393,150
<u>Totals</u>		\$ 2,815,819



**1.3(a) Development of Average Employer Contribution Rate - FY94  
For Police and Fire Members (in thousands)**

Consolidated Rate

(1) Total Normal Cost	\$ 21,919
(2) Total Salaries	120,240
(3) Normal Cost Rate for Police & Fire Members, (1) / (2)	18.23%
(4) Member Contribution Rate (Police & Fire)	7.50%
(5) Consolidated Employer Normal Cost Rate For Police & Fire Members, (3) - (4)	10.73%

Past Service Rate

(1) Accrued Liability	\$ 523,326
(2) Valuation Assets	461,103*
(3) Total Unfunded Liability, (1) - (2)	62,223
(4) Amortization Factor (25 years)	10.902097
(5) Past Service Cost, (3) / (4)	5,707
(6) Total Salaries	120,240
(7) Past Service Rate, (5) / (6)	4.75%

Total Employer Contribution Rate

15.48%

\* Allocated in proportion to Accrued Liability.

**1.3(b) Development of Average Employer Contribution Rate - FY94  
For "Other" Members (in thousands)**

Consolidated Rate

(1)	Total Normal Cost	\$ 152,998
(2)	Total Salaries	907,567
(3)	Normal Cost Rate for "Other" Members, (1) / (2)	16.86%
(4)	Member Contribution Rate ("Others")	6.75%
(5)	Consolidated Employer Normal Cost Rate For Other Members, (3) - (4)	10.11%

Past Service Rate

(1)	Accrued Liability	\$ 2,815,819
(2)	Valuation Assets	2,481,018*
(3)	Total Unfunded Liability, (1) - (2)	334,801
(4)	Amortization Factor (25 years)	10.902097
(5)	Past Service Cost, (3) / (4)	\$ 30,710
(6)	Total Salaries	\$ 907,567
(7)	Past Service Rate, (5) / (6)	3.38%

Total Employer Contribution Rate 13.49%

\* Allocated in proportion to Accrued Liability.

### 1.3(c) Development of Average Employer Contribution Rate - FY94 All Members (in thousands)

#### Consolidated Rate

(1)	Total Normal Cost	\$ 174,917
(2)	Total Salaries	1,027,807
(3)	Normal Cost Rate for All Members, (1) / (2)	17.02%
(4)	Average Member Contribution Rate	6.84%
(5)	Consolidated Employer Normal Cost Rate for All Members, (3) - (4)	10.18%

#### Past Service Rate

(1)	Accrued Liability	\$ 3,339,145
(2)	Valuation Assets	2,942,121
(3)	Total Unfunded Liability, (1) - (2)	397,024
(4)	25-Year Amortization Factor	10.902097
(5)	Past Service Cost, (3) / (4)	36,417
(6)	Total Salaries	1,027,807
(7)	Past Service Rate, (5) / (6)	3.54%

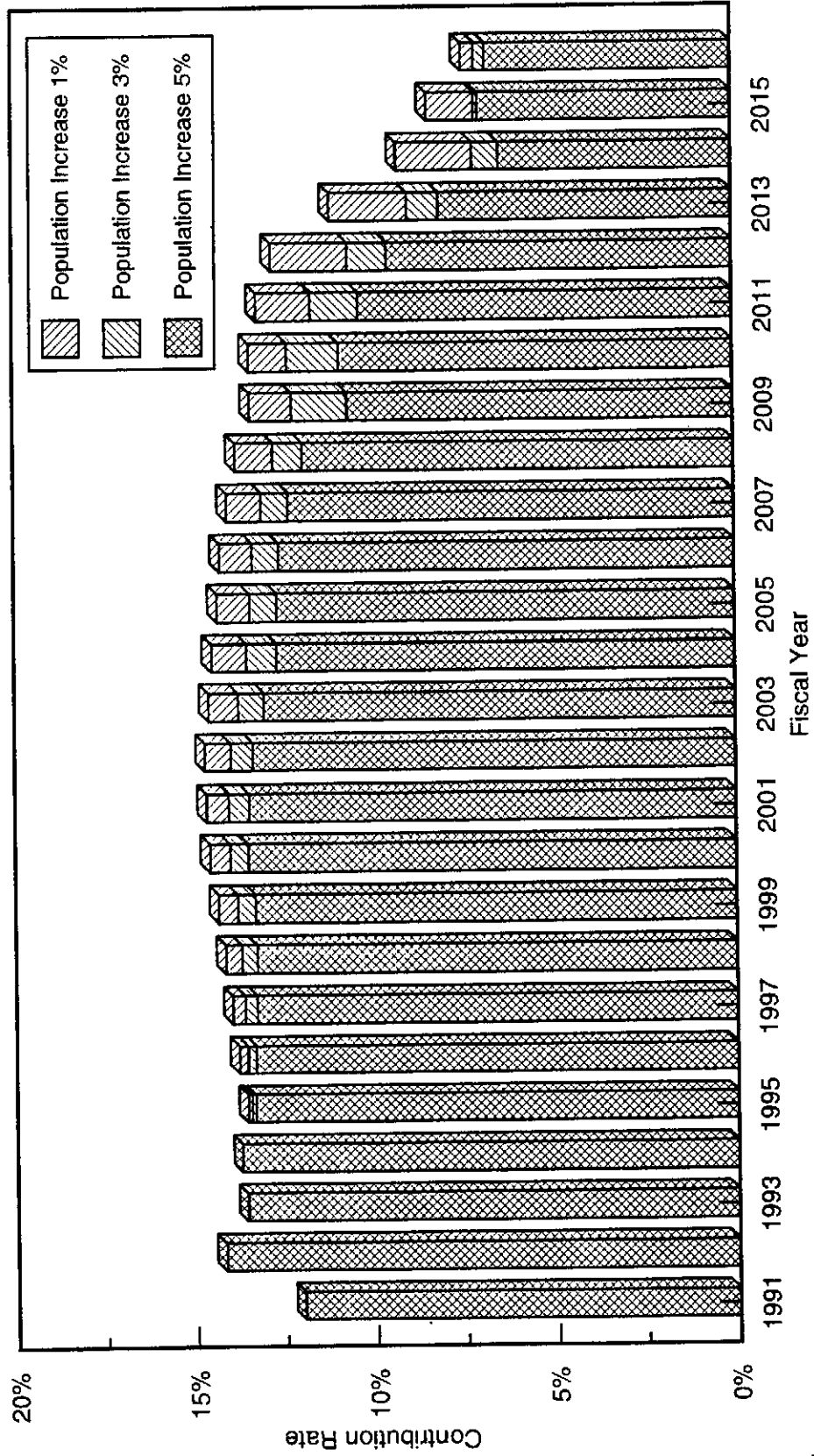
Total Employer Contribution Rate 13.72%

#### 1.4 Development of Actuarial Gain/(Loss) for FY91 (in thousands)

(1) Unfunded Liability, June 30, 1990	\$ 76,032
(2) Normal Cost for FY91	187,205
(3) Interest on (1) and (2) at 9%	23,691
(4) Employee Contributions for FY91	76,486
(5) Employer Contributions for FY91	132,402
(6) Interest on (4) and (5) at 9% for one-half year	9,400
(7) Expected Unfunded Liability, June 30, 1991, (1) + (2) + (3) - (4) - (5) - (6)	68,640
(8) Reduction in Unfunded Liability due to Change in Valuation Assumptions	5,084
(9) Expected Unfunded Liability after Change in Assumptions, (7) - (8)	63,556
(10) Actual Unfunded Liability, June 30, 1991	397,024
(11) Actuarial Gain/(Loss) for the Year, (9) - (10)	\$ (333,468)

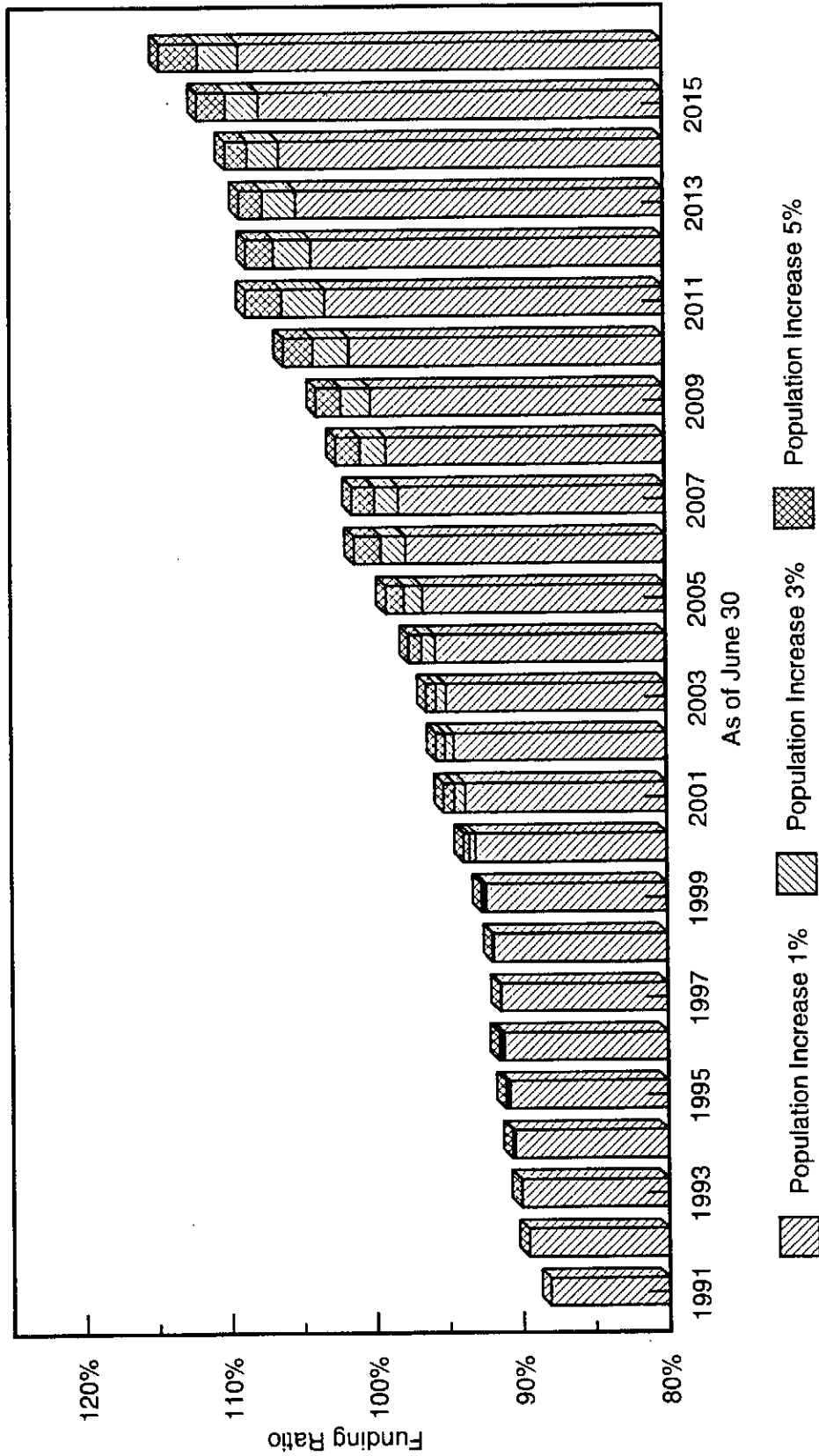
# 1.5 Actuarial Projections

## State of Alaska PERS Projected Contribution Rates



1.5 Actuarial Projections (continued)

**State of Alaska PERS  
Projected Funding Ratios**



# 1.5 Actuarial Projections (continued)

Table 1

State of Alaska PERS  
Financial Projections ('000 omitted)

As of June 30	Investment Return 8.75%		Valuation Amounts on July 1		Surplus* (Deficit)	Total Salaries	Flow Amounts During Following 12 Months		Annual Population Increase		Ending Asset Value		
	Total Assets	Accrued Liability	Funding Ratio	Employer Ctb Rate			Employee Contribs	Total Contribs	Benefit Payments	Net Contribs		Investment Earnings	
1991	2,942,121	3,339,424	88.1%	14.20%	(397,303)	1,027,807	145,949	70,302	216,251	155,194	61,057	260,107	3,263,285
1992	3,263,285	3,643,417	89.6%	13.58%	(380,132)	1,056,354	143,453	72,255	215,707	166,766	48,941	287,679	3,599,904
1993	3,599,904	3,997,549	90.1%	13.72%	(397,644)	1,090,104	149,607	74,563	224,170	180,392	43,778	316,907	3,960,589
1994	3,960,589	4,376,794	90.5%	13.57%	(416,204)	1,128,222	153,051	77,170	230,221	196,776	33,445	348,015	4,342,049
1995	4,342,049	4,780,261	90.8%	13.79%	(438,212)	1,170,361	161,338	80,053	241,391	214,425	26,965	381,109	4,750,123
1996	4,750,123	5,210,075	91.2%	13.97%	(459,952)	1,216,975	170,005	83,241	253,246	238,087	15,158	416,299	5,181,581
1997	5,181,581	5,670,704	91.4%	14.14%	(489,123)	1,276,084	180,459	87,284	267,743	262,012	5,731	453,639	5,640,950
1998	5,640,950	6,140,242	91.9%	14.35%	(499,292)	1,335,193	191,563	91,327	282,891	290,185	(7,295)	493,264	6,126,920
1999	6,126,920	6,634,309	92.4%	14.57%	(507,389)	1,394,303	203,123	95,370	298,494	321,313	(22,819)	535,107	6,639,208
2000	6,639,208	7,132,549	93.1%	14.64%	(493,342)	1,453,412	212,763	99,413	312,176	354,780	(42,604)	579,067	7,175,670
2001	7,175,670	7,651,639	93.8%	14.69%	(475,969)	1,512,521	222,189	103,456	325,645	391,492	(65,847)	624,990	7,734,814
2002	7,734,814	8,181,570	94.5%	14.60%	(446,756)	1,596,261	233,009	109,184	342,193	431,672	(89,479)	672,882	8,318,217
2003	8,318,217	8,748,299	95.1%	14.49%	(430,083)	1,680,001	243,457	114,912	358,369	473,897	(115,528)	722,790	8,925,478
2004	8,925,478	9,314,252	96.7%	14.34%	(388,774)	1,763,740	252,855	120,640	373,495	518,115	(144,621)	774,652	9,555,509
2005	9,555,509	9,885,250	96.7%	14.27%	(329,741)	1,847,480	263,543	126,368	389,911	563,551	(173,640)	828,510	10,210,380
2006	10,210,380	10,443,200	97.8%	14.07%	(232,821)	1,931,219	271,769	132,095	403,865	610,450	(206,585)	884,370	10,888,164
2007	10,888,164	11,081,402	98.3%	13.81%	(193,238)	2,052,130	283,384	140,366	423,750	657,506	(233,756)	942,488	11,596,896
2008	11,596,896	11,700,235	99.1%	13.39%	(103,339)	2,173,041	290,948	148,636	439,584	703,592	(264,007)	1,003,178	12,336,067
2009	12,336,067	12,316,560	100.2%	13.40%	19,507	2,293,951	307,383	156,906	464,289	750,062	(285,773)	1,066,903	13,117,197
2010	13,117,197	12,909,867	101.6%	13.20%	207,331	2,414,862	318,685	165,177	483,862	796,742	(312,880)	1,134,066	13,938,384
2011	13,938,384	13,501,243	103.2%	12.76%	437,141	2,535,773	323,612	173,447	497,059	842,037	(344,978)	1,204,516	14,797,922
2012	14,797,922	14,201,169	104.2%	11.13%	596,753	2,709,000	301,401	185,296	486,697	885,619	(398,922)	1,277,365	15,676,364
2013	15,676,364	14,897,572	105.2%	9.26%	778,792	2,882,228	266,810	197,144	463,954	927,967	(464,013)	1,351,381	16,563,733
2014	16,563,733	15,565,839	106.4%	8.40%	997,894	3,055,456	256,752	208,993	465,745	969,368	(503,623)	1,427,293	17,487,403
2015	17,487,403	16,224,479	107.8%	7.47%	1,262,924	3,228,684	241,149	220,842	461,991	1,013,121	(551,130)	1,506,036	18,442,309
2016	18,442,309	16,885,709	109.2%	6.36%	1,556,600	3,401,912	216,221	232,691	448,912	1,051,928	(603,016)	1,587,320	19,426,612

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

# 1.5 Actuarial Projections (continued)

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

As of June 30	Investment Return 8.75%		Valuation Amounts on July 1		Surplus* (Deficit)	Total Salaries		Employer Ctb Rate		Flow Amounts During Following 12 Months		Annual Population Increase 3.00%		Ending Asset Value
	Total Assets	Accrued Liability	Funding Ratio	Total		Employer	Employee	Contribs	Contribs	Total	Benefit	Net	Investment	
1991	2,942,121	3,339,424	88.1%	(397,303)	1,027,807	14.20%	145,949	70,302	216,251	155,194	61,057	260,107	3,263,285	
1992	3,263,285	3,644,838	89.5%	(381,553)	1,070,709	13.58%	145,402	73,237	218,639	166,766	51,872	287,807	3,602,964	
1993	3,602,964	4,000,018	90.1%	(397,054)	1,120,538	13.72%	153,784	76,645	230,429	180,399	50,030	317,448	3,970,442	
1994	3,970,442	4,383,799	90.6%	(413,357)	1,177,506	13.45%	158,390	80,541	238,931	196,918	42,013	349,252	4,361,707	
1995	4,361,707	4,794,900	91.0%	(433,193)	1,241,288	13.55%	168,170	84,904	253,074	214,628	38,446	383,331	4,783,485	
1996	4,783,485	5,236,400	91.4%	(452,915)	1,312,653	13.62%	178,749	89,785	268,535	238,524	30,011	419,868	5,233,364	
1997	5,233,364	5,724,094	91.4%	(490,730)	1,408,345	13.69%	192,812	96,331	289,143	262,579	26,564	459,081	5,719,009	
1998	5,719,009	6,220,772	91.9%	(501,763)	1,504,038	13.81%	207,743	102,876	310,619	290,914	19,705	501,275	6,239,990	
1999	6,239,990	6,743,708	92.5%	(503,718)	1,599,731	14.01%	224,144	109,422	333,566	322,257	11,309	546,494	6,797,792	
2000	6,797,792	7,270,843	93.5%	(473,051)	1,695,423	14.02%	237,727	115,967	353,694	355,967	(2,273)	594,707	7,390,226	
2001	7,390,226	7,821,140	94.5%	(430,914)	1,791,116	13.98%	250,376	122,512	372,888	392,963	(20,074)	645,767	8,015,919	
2002	8,015,919	8,423,449	95.2%	(407,530)	1,940,299	13.76%	267,066	132,716	399,783	433,491	(33,708)	699,918	8,682,128	
2003	8,682,128	9,065,465	95.8%	(383,337)	2,089,482	13.51%	282,368	142,921	425,289	476,110	(50,821)	757,463	9,388,770	
2004	9,388,770	9,706,816	96.7%	(318,046)	2,238,664	13.42%	300,373	153,125	453,497	520,883	(67,385)	818,569	10,139,954	
2005	10,139,954	10,356,775	97.9%	(216,821)	2,387,847	13.33%	318,334	163,329	481,662	567,036	(85,374)	883,511	10,938,091	
2006	10,938,091	10,993,692	99.5%	(55,600)	2,537,030	13.09%	332,057	173,533	505,590	614,851	(109,261)	952,303	11,781,133	
2007	11,781,133	11,795,157	99.9%	(14,023)	2,770,803	12.74%	352,937	189,523	542,460	662,943	(120,482)	1,025,578	12,686,229	
2008	12,686,229	12,577,004	100.9%	109,225	3,004,575	12.21%	366,900	205,513	572,413	710,276	(137,863)	1,104,014	13,652,379	
2009	13,652,379	13,362,499	102.2%	289,880	3,238,348	12.33%	399,365	221,503	620,868	758,228	(137,360)	1,188,574	14,703,593	
2010	14,703,593	14,124,506	104.1%	579,086	3,472,120	11.66%	405,016	237,493	642,509	806,801	(164,292)	1,279,377	15,818,677	
2011	15,818,677	14,891,730	106.2%	926,947	3,705,893	10.62%	393,390	253,483	646,873	854,284	(207,410)	1,375,060	16,986,327	
2012	16,986,327	15,907,217	106.8%	1,079,110	4,067,714	8.97%	364,985	278,232	643,217	900,412	(257,195)	1,475,051	18,204,184	
2013	18,204,184	16,927,191	107.5%	1,276,993	4,629,534	7.17%	317,407	302,980	620,387	945,628	(325,241)	1,578,637	19,457,580	
2014	19,457,580	17,919,330	108.6%	1,538,249	4,791,355	7.11%	340,480	327,729	668,208	990,501	(322,293)	1,688,438	20,823,725	
2015	20,823,725	18,910,656	110.1%	1,913,069	5,153,176	6.81%	351,130	352,477	703,607	1,038,756	(335,149)	1,807,413	22,295,989	
2016	22,295,989	19,909,539	112.0%	2,386,450	5,514,997	6.26%	344,966	377,226	722,192	1,082,464	(360,273)	1,935,137	23,870,853	

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



# 1.5 Actuarial Projections (continued)

Table 3

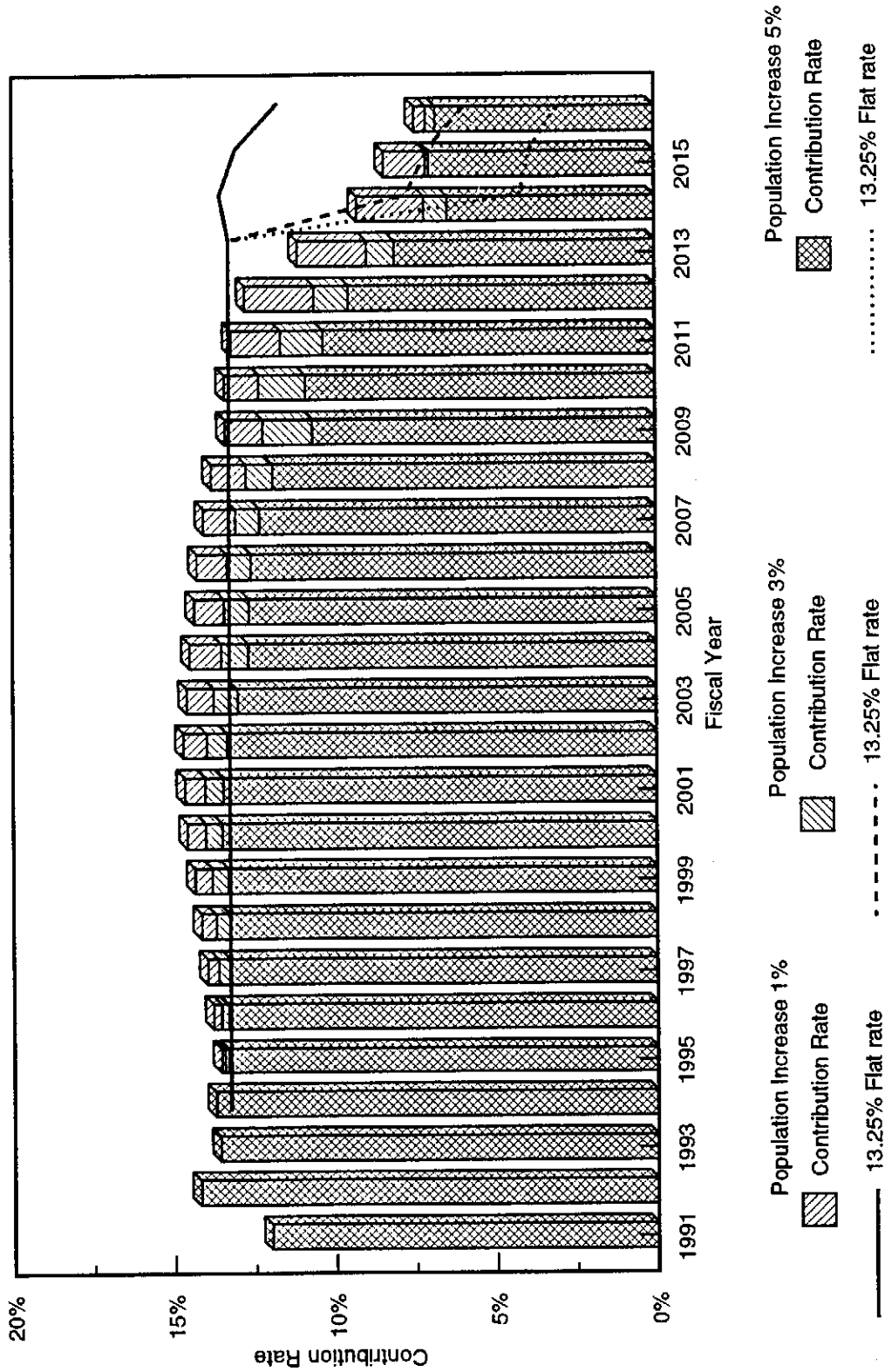
State of Alaska PERS  
Financial Projections ('000 omitted)

As of June 30	Investment Return		Valuation Amounts on July		1-		Flow Amounts During Following 12 Months					Annual Population Increase		5.00%		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	Ending Asset Value			
1991	2,942,121	3,339,424	88.1%	(397,303)	1,027,807	14.20%	145,949	70,302	216,251	155,194	61,057	260,107	3,263,285			
1992	3,263,285	3,644,100	89.5%	(380,815)	1,084,537	13.58%	147,280	74,182	221,462	166,766	54,696	287,930	3,605,911			
1993	3,605,911	4,002,501	90.1%	(396,590)	1,151,569	13.72%	158,043	78,767	236,810	180,405	56,405	317,985	3,980,301			
1994	3,980,301	4,390,925	90.6%	(410,624)	1,228,739	13.33%	163,809	84,046	247,855	197,060	50,795	350,499	4,381,594			
1995	4,381,594	4,809,970	91.1%	(428,375)	1,316,452	13.32%	175,347	90,045	265,393	214,830	50,562	385,602	4,817,758			
1996	4,817,758	5,263,825	91.5%	(446,067)	1,416,020	13.28%	188,068	96,856	284,924	238,966	45,958	423,565	5,287,281			
1997	5,287,281	5,782,189	91.4%	(494,908)	1,557,335	13.27%	206,588	106,522	313,110	263,155	49,954	464,823	5,802,058			
1998	5,802,058	6,309,616	92.0%	(507,558)	1,698,649	13.31%	226,143	116,188	342,330	291,667	50,663	509,897	6,362,618			
1999	6,362,618	6,865,030	92.7%	(502,412)	1,839,964	13.50%	248,456	125,854	374,310	323,235	51,075	558,964	6,972,656			
2000	7,009,821	7,424,677	93.9%	(414,856)	1,981,279	13.47%	266,809	135,519	402,328	357,213	45,115	612,081	7,629,853			
2001	7,629,853	8,009,873	95.3%	(380,020)	2,122,594	13.35%	283,294	145,185	428,480	394,510	33,969	669,098	8,332,920			
2002	8,332,920	8,701,593	95.8%	(368,673)	2,364,295	13.03%	308,170	161,718	469,888	435,426	34,463	730,638	9,098,021			
2003	9,098,021	9,436,115	96.4%	(338,095)	2,605,997	12.67%	330,187	178,250	508,437	478,470	29,968	797,388	9,925,376			
2004	9,925,376	10,170,107	97.6%	(244,731)	2,847,699	12.66%	360,579	194,783	555,362	523,855	31,507	869,849	10,826,732			
2005	10,826,732	10,916,605	99.2%	(89,873)	3,089,400	12.59%	388,887	211,315	600,202	570,781	29,421	948,626	11,804,779			
2006	11,804,779	11,650,096	101.3%	154,684	3,331,102	12.32%	410,520	227,847	638,367	619,605	18,762	1,033,739	12,857,280			
2007	12,857,280	12,670,746	101.5%	186,534	3,744,027	11.92%	446,236	256,091	702,327	668,833	33,495	1,126,477	14,017,252			
2008	14,017,252	13,671,552	102.5%	345,700	4,156,952	10.66%	443,150	284,336	727,486	717,565	9,920	1,226,944	15,254,116			
2009	15,254,116	14,682,963	103.9%	571,153	4,569,877	10.88%	497,088	312,580	809,668	767,158	42,510	1,336,595	16,633,220			
2010	16,633,220	15,670,416	106.1%	962,805	5,395,727	10.33%	514,826	340,824	855,649	817,849	37,801	1,457,061	18,128,082			
2011	18,128,082	16,671,392	108.7%	1,456,689	6,095,119	9.54%	514,995	369,068	884,063	867,760	16,303	1,586,920	19,731,305			
2012	19,731,305	18,153,306	108.7%	1,577,998	6,095,119	8.10%	493,952	416,906	910,858	916,775	(5,917)	1,726,230	21,451,617			
2013	21,451,617	19,649,316	109.2%	1,802,302	6,794,511	6.44%	437,503	464,745	902,247	965,226	(62,978)	1,874,261	23,323,138			
2014	23,262,900	21,117,726	110.2%	2,145,174	7,493,903	7.01%	525,192	512,583	1,037,775	1,014,078	23,698	2,036,541	25,323,138			
2015	25,323,138	22,596,245	112.1%	2,726,894	8,193,295	7.10%	582,072	560,421	1,142,493	1,067,393	75,101	2,219,060	27,617,299			
2016	27,617,299	24,087,204	114.7%	3,530,096	8,892,687	6.81%	605,654	608,260	1,213,913	1,116,757	97,157	2,420,764	30,135,221			

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

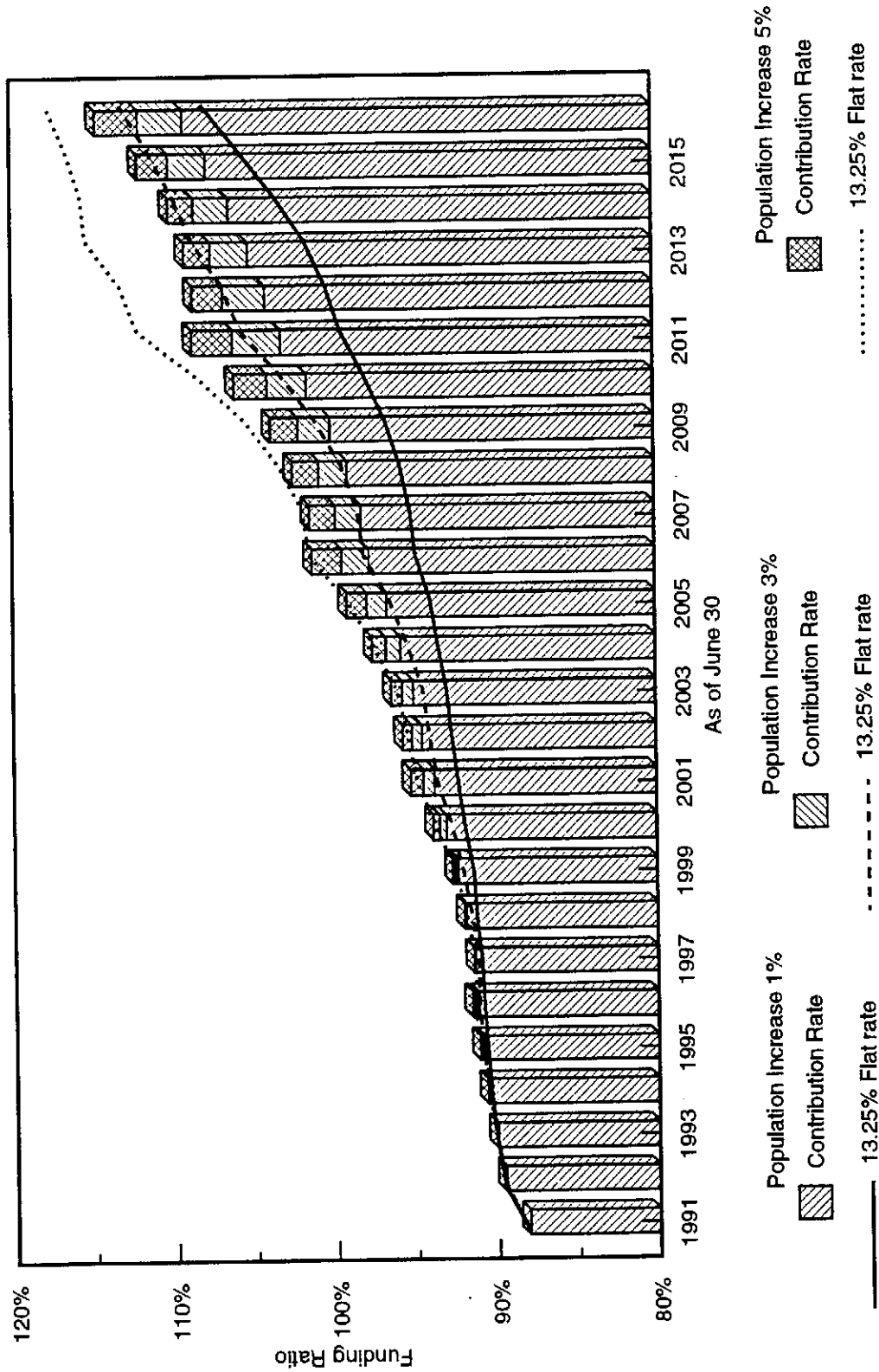
# 1.5 Actuarial Projections (continued)

## State of Alaska PERS Projected Contribution Rates



1.5 Actuarial Projections (continued)

**State of Alaska PERS  
Projected Funding Ratios**



# 1.5 Actuarial Projections (continued)

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

As of June 30	Valuation Amounts on July 1		Total Salaries	Flow Amounts During Following 12 Months		Annual Population Increase		Ending Asset Value											
	Total Assets	Accrued Liability		Employer Ctb Rate	Employer Contribs	Employee Contribs	Total Contribs		Benefit Payments	Met Contribs	Investment Earnings								
		Funding Ratio	Surplus* (Deficit)																
1991	2,942,121	3,339,424	88.1%	(397,303)	1,027,807	14.20%	145,949	70,302	216,251	155,194	61,057	260,107	3,263,285						
1992	3,263,285	3,643,417	89.6%	(380,132)	1,056,354	13.58%	143,453	72,255	215,707	166,766	48,941	287,679	3,599,904						
1993	3,599,904	3,997,549	90.1%	(397,644)	1,090,104	13.25%	144,439	74,563	219,002	180,392	38,610	316,681	3,955,195						
1994	3,955,195	4,376,794	90.4%	(421,599)	1,128,222	13.25%	149,489	77,170	226,660	196,776	29,883	347,587	4,332,465						
1995	4,332,465	4,780,261	90.6%	(447,796)	1,170,361	13.25%	155,073	80,053	235,125	214,425	20,700	379,996	4,733,162						
1996	4,733,162	5,210,075	90.8%	(476,914)	1,216,975	13.25%	161,249	83,241	244,490	238,087	6,403	414,432	5,153,996						
1997	5,153,996	5,670,704	90.9%	(516,707)	1,276,084	13.25%	169,081	87,284	256,365	262,012	(5,647)	450,728	5,599,077						
1998	5,599,077	6,140,242	91.2%	(541,165)	1,335,193	13.25%	176,913	91,327	268,240	290,185	(21,945)	488,959	6,066,091						
1999	6,066,091	6,634,309	91.4%	(568,218)	1,394,303	13.25%	184,745	95,370	280,115	321,313	(41,197)	528,981	6,553,875						
2000	6,553,875	7,132,549	91.9%	(578,674)	1,453,412	13.25%	192,577	99,413	291,990	354,780	(62,790)	570,717	7,061,802						
2001	7,061,802	7,651,639	92.3%	(589,837)	1,512,521	13.25%	200,409	103,456	303,866	391,492	(87,627)	614,074	7,588,249						
2002	7,588,249	8,181,570	92.7%	(593,320)	1,596,261	13.25%	211,505	109,184	320,689	431,672	(110,983)	659,116	8,136,383						
2003	8,136,383	8,748,299	93.0%	(611,916)	1,680,001	13.25%	222,600	114,912	337,512	473,897	(136,385)	705,967	8,705,964						
2004	8,705,964	9,314,252	93.5%	(608,287)	1,763,740	13.25%	233,696	120,540	354,335	518,115	(163,780)	754,607	9,296,791						
2005	9,296,791	9,885,250	94.0%	(588,459)	1,847,480	13.25%	244,791	126,368	371,159	563,551	(192,392)	805,052	9,909,451						
2006	9,909,451	10,443,200	94.9%	(533,749)	1,931,219	13.25%	255,887	132,095	387,982	610,450	(222,468)	857,344	10,544,327						
2007	10,544,327	11,081,402	95.2%	(537,075)	2,052,130	13.25%	271,907	140,366	412,273	657,506	(245,233)	911,900	11,210,994						
2008	11,210,994	11,700,235	95.8%	(489,241)	2,173,041	13.25%	287,928	148,636	436,564	703,592	(267,028)	969,279	11,913,245						
2009	11,913,245	12,316,560	96.7%	(403,315)	2,293,951	13.25%	303,949	156,906	460,855	750,062	(289,207)	1,029,756	12,653,795						
2010	12,653,795	12,909,867	98.0%	(256,072)	2,414,862	13.25%	319,969	165,177	485,146	796,742	(311,596)	1,093,575	13,435,774						
2011	13,435,774	13,501,243	99.5%	(65,470)	2,535,773	13.25%	335,990	173,447	509,437	842,037	(332,601)	1,161,079	14,264,252						
2012	14,264,252	14,201,169	100.4%	63,083	2,709,000	13.25%	358,943	185,296	544,238	885,619	(341,381)	1,233,187	15,156,058						
2013	15,156,058	14,897,572	101.7%	258,485	2,882,228	13.54%	390,337	197,144	587,481	927,967	(340,486)	1,311,259	16,126,831						
2014	16,126,831	15,565,839	103.6%	560,991	3,055,456	13.03%	398,128	208,993	607,122	969,368	(362,247)	1,395,249	17,159,833						
2015	17,159,833	16,224,479	105.8%	935,355	3,228,684	11.71%	378,046	220,842	598,888	1,013,121	(414,233)	1,483,363	18,228,963						
2016	18,228,963	16,885,709	108.0%	1,343,254	3,401,912	9.71%	350,474	232,691	563,165	1,051,928	(488,763)	1,573,651	19,313,851						

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

# 1.5 Actuarial Projections (continued)

Table 5

State of Alaska PERS  
Financial Projections ('000 omitted)

As of June 30	Investment Return 8.75%		Valuation Amounts on July 1		Surplus* (Deficit)		Total Salaries		Flow Amounts During Following 12 Months		Annual Population Increase 3.00%		Ending Asset Value	
	Total Assets	Accrued Liability Ratio	Total	Accrued Liability Ratio	Surplus* (Deficit)	Total Salaries	Employer Ctb Rate	Employee Contris	Employer Ctb Rate	Employee Contris	Total Contris	Benefit Payments	Net Contris	Investment Earnings
1991	2,942,121	3,339,424	88.1%	(397,303)	1,027,807	14.20%	145,949	70,302	216,251	155,194	61,057	260,107	3,263,285	
1992	3,263,285	3,644,838	89.5%	(381,553)	1,070,709	13.58%	145,402	73,237	218,639	166,766	51,872	287,807	3,602,964	
1993	3,602,964	4,000,018	90.1%	(397,054)	1,120,538	13.25%	148,471	76,645	225,116	180,399	44,717	317,216	3,964,897	
1994	3,964,897	4,383,799	90.4%	(418,902)	1,177,506	13.25%	156,020	80,541	236,561	196,918	39,643	348,663	4,353,203	
1995	4,353,203	4,794,900	90.8%	(441,698)	1,241,288	13.25%	164,471	84,904	249,375	214,628	34,747	382,425	4,770,375	
1996	4,770,375	5,236,400	91.1%	(466,024)	1,312,653	13.25%	173,926	89,785	263,712	238,524	25,188	418,510	5,214,073	
1997	5,214,073	5,724,094	91.1%	(510,020)	1,408,345	13.25%	186,606	96,331	282,937	262,579	20,357	457,122	5,691,553	
1998	5,691,553	6,220,772	91.5%	(529,219)	1,504,038	13.25%	199,285	102,876	302,161	290,914	11,247	498,503	6,201,303	
1999	6,201,303	6,743,708	92.0%	(542,405)	1,599,731	13.25%	211,964	109,422	321,386	322,257	(871)	542,576	6,743,008	
2000	6,743,008	7,270,843	92.7%	(527,835)	1,695,423	13.25%	224,644	115,967	340,611	355,967	(15,357)	589,341	7,316,992	
2001	7,316,992	7,821,140	93.6%	(504,148)	1,791,116	13.25%	237,323	122,512	359,835	392,963	(33,127)	638,787	7,922,652	
2002	7,922,652	8,423,449	94.1%	(500,796)	1,940,299	13.25%	257,090	132,716	389,806	433,491	(43,685)	691,321	8,570,288	
2003	8,570,288	9,065,465	94.5%	(495,177)	2,089,482	13.25%	276,856	142,921	419,777	476,110	(56,333)	747,436	9,261,391	
2004	9,261,391	9,706,816	95.4%	(445,425)	2,238,664	13.25%	296,623	153,125	449,748	520,883	(71,135)	807,260	9,997,515	
2005	9,997,515	10,356,775	96.5%	(359,260)	2,387,847	13.25%	316,390	163,329	479,719	567,036	(87,318)	870,962	10,781,160	
2006	10,781,160	10,993,692	98.1%	(212,532)	2,537,030	13.25%	336,156	173,533	509,689	614,851	(105,161)	938,751	11,614,750	
2007	11,614,750	11,795,157	98.5%	(180,407)	2,770,803	13.25%	367,131	189,523	556,654	662,943	(106,288)	1,011,640	12,520,102	
2008	12,520,102	12,577,004	99.5%	(56,902)	3,004,575	13.25%	398,106	205,513	603,619	710,276	(106,657)	1,090,843	13,504,288	
2009	13,504,288	13,362,499	101.1%	141,788	3,238,348	13.25%	429,081	221,503	650,584	758,228	(107,644)	1,176,916	14,573,559	
2010	14,573,559	14,124,506	103.2%	449,053	3,472,120	13.25%	460,056	237,493	697,549	806,801	(109,252)	1,270,407	15,734,714	
2011	15,734,714	14,891,730	105.7%	842,984	3,705,893	13.25%	491,031	253,483	744,514	854,284	(109,770)	1,371,985	16,996,930	
2012	16,996,930	15,907,217	106.9%	1,089,712	4,067,714	13.25%	538,972	278,232	817,204	900,412	(83,208)	1,483,591	18,397,313	
2013	18,397,313	16,927,191	108.7%	1,470,122	4,429,534	7.70%	340,979	302,980	643,959	945,628	(301,669)	1,596,567	19,692,210	
2014	19,692,210	17,919,330	109.9%	1,772,880	4,791,355	7.04%	337,546	327,729	665,275	990,501	(325,226)	1,708,840	21,075,824	
2015	21,075,824	18,910,656	111.4%	2,165,168	5,153,176	5.79%	298,358	352,477	650,835	1,038,756	(387,921)	1,827,163	22,515,066	
2016	22,515,066	19,909,539	113.1%	2,605,528	5,514,997	5.10%	281,534	377,226	658,760	1,082,464	(423,705)	1,951,531	24,042,893	

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

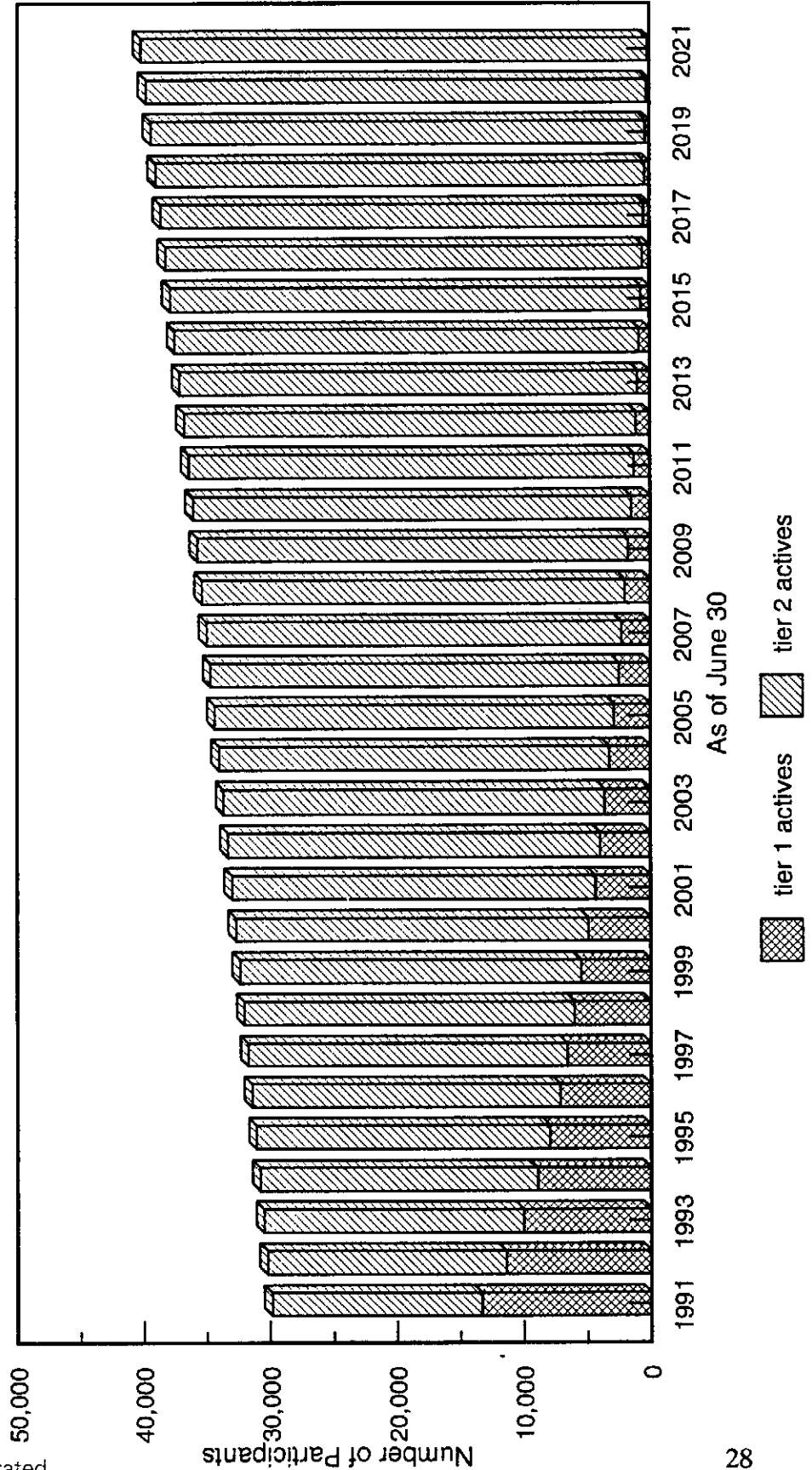
# 1.5 Actuarial Projections (continued)

Table 6  
State of Alaska PERS  
Financial Projections ('000 omitted)

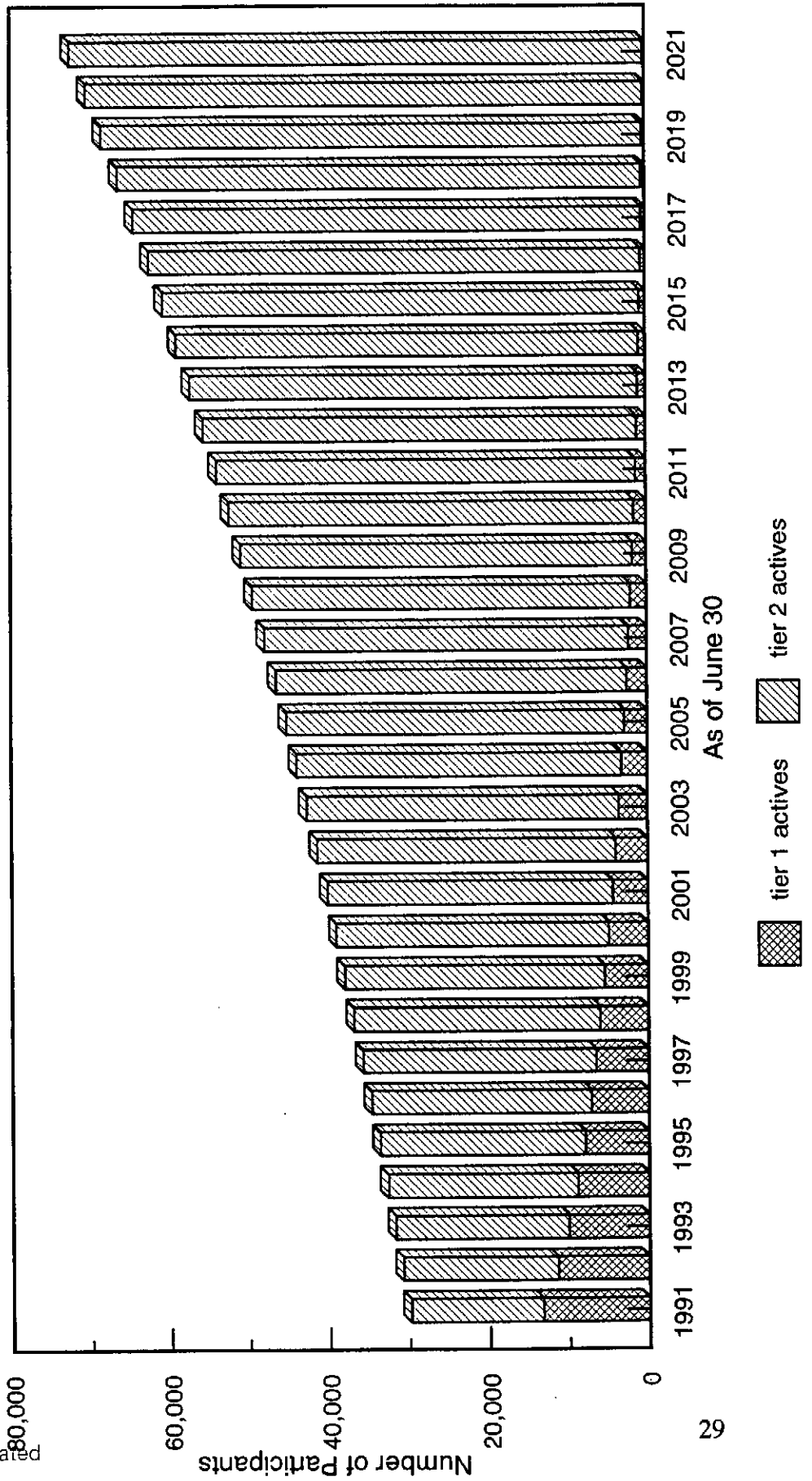
As of June 30	Investment Return 8.75%		Valuation Amounts on July 1		Surplus* (Deficit)	Total Salaries	Flow Amounts During Following 12 Months		Annual Population Increase		Net Contribs	Investment Earnings	Ending Asset Value
	Total Assets	Accrued Liability	Funding Ratio	Employer Ctb Rate			Employer Contribs	Employee Contribs	Total Contribs	Benefit Payments			
1991	2,942,121	3,339,424	88.1%	14.20%	(397,303)	1,027,807	145,949	70,302	216,251	155,194	61,057	260,107	3,263,285
1992	3,263,285	3,644,100	89.5%	13.58%	(380,815)	1,084,537	147,280	74,182	221,462	166,766	54,696	287,930	3,605,911
1993	3,605,911	4,002,501	90.1%	13.25%	(396,590)	1,151,569	152,583	78,767	231,350	180,405	50,945	317,746	3,974,602
1994	3,974,602	4,390,925	90.5%	13.25%	(416,323)	1,228,739	162,808	84,046	246,854	197,060	49,794	349,956	4,374,352
1995	4,374,352	4,809,970	90.9%	13.25%	(435,618)	1,316,452	174,430	90,045	264,475	214,830	49,645	384,928	4,808,925
1996	4,808,925	5,263,825	91.4%	13.25%	(454,901)	1,416,020	187,623	96,856	284,478	238,966	45,512	422,772	5,277,209
1997	5,277,209	5,782,189	91.3%	13.25%	(504,980)	1,557,335	206,347	106,522	312,869	263,155	49,713	463,931	5,790,853
1998	5,790,853	6,309,616	91.8%	13.25%	(518,763)	1,698,649	225,071	116,188	341,259	291,667	49,591	508,869	6,349,314
1999	6,349,314	6,865,030	92.5%	13.25%	(515,716)	1,839,964	243,795	125,854	369,649	323,235	46,414	557,596	6,953,323
2000	6,953,323	7,424,677	93.7%	13.25%	(471,354)	1,981,279	261,347	135,519	398,039	357,213	40,826	610,202	7,604,351
2001	7,604,351	8,009,873	94.9%	13.25%	(405,522)	2,122,594	281,244	145,185	426,429	394,510	31,919	666,777	8,303,046
2002	8,303,046	8,701,593	95.4%	13.25%	(398,547)	2,364,295	313,269	161,718	474,987	435,426	39,561	728,247	9,070,855
2003	9,070,855	9,436,115	96.1%	13.25%	(365,260)	2,605,997	345,295	178,250	523,545	478,470	45,075	795,672	9,911,602
2004	9,911,602	10,170,107	97.5%	13.25%	(258,505)	2,847,699	377,320	194,783	572,103	523,855	48,248	869,376	10,829,226
2005	10,829,226	10,916,605	99.2%	13.25%	(87,380)	3,089,400	409,346	211,315	620,661	570,781	49,879	949,739	11,828,844
2006	11,828,844	11,650,096	101.5%	13.25%	178,749	3,331,102	441,371	227,847	669,218	619,605	49,613	1,037,194	12,915,652
2007	12,915,652	12,670,746	101.9%	13.25%	244,906	3,744,027	496,084	256,091	752,175	668,833	83,342	1,133,766	14,132,761
2008	14,132,761	13,671,552	103.4%	13.25%	461,209	4,156,952	550,796	284,336	835,132	717,565	117,566	1,241,760	15,492,087
2009	15,492,087	14,682,963	105.5%	13.25%	809,124	4,569,877	605,509	312,580	918,088	767,158	150,930	1,362,161	17,005,178
2010	17,005,178	15,670,416	108.5%	13.25%	1,334,762	4,982,802	660,221	340,824	1,001,045	817,849	183,196	1,495,968	18,684,342
2011	18,684,342	16,671,392	112.1%	13.25%	2,012,950	5,395,727	714,934	369,068	1,084,002	867,760	216,241	1,644,340	20,544,924
2012	20,544,924	18,153,306	113.2%	13.25%	2,391,618	6,095,119	807,603	416,906	1,224,509	916,775	307,734	1,811,144	22,663,802
2013	22,663,802	19,649,316	115.3%	4.02%	3,014,486	6,794,511	272,981	464,745	737,725	965,226	(227,500)	1,973,130	24,409,432
2014	24,409,432	21,117,726	115.6%	3.87%	3,291,705	7,493,903	290,237	512,583	802,820	1,014,078	(211,257)	2,126,583	26,324,757
2015	26,324,757	22,596,245	116.5%	2.91%	3,728,512	8,193,295	236,746	560,421	799,167	1,067,393	(268,225)	2,291,681	28,348,213
2016	28,348,213	24,087,204	117.7%	3.22%	4,261,009	8,892,687	286,097	608,260	894,357	1,116,757	(222,400)	2,470,739	30,596,552

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

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



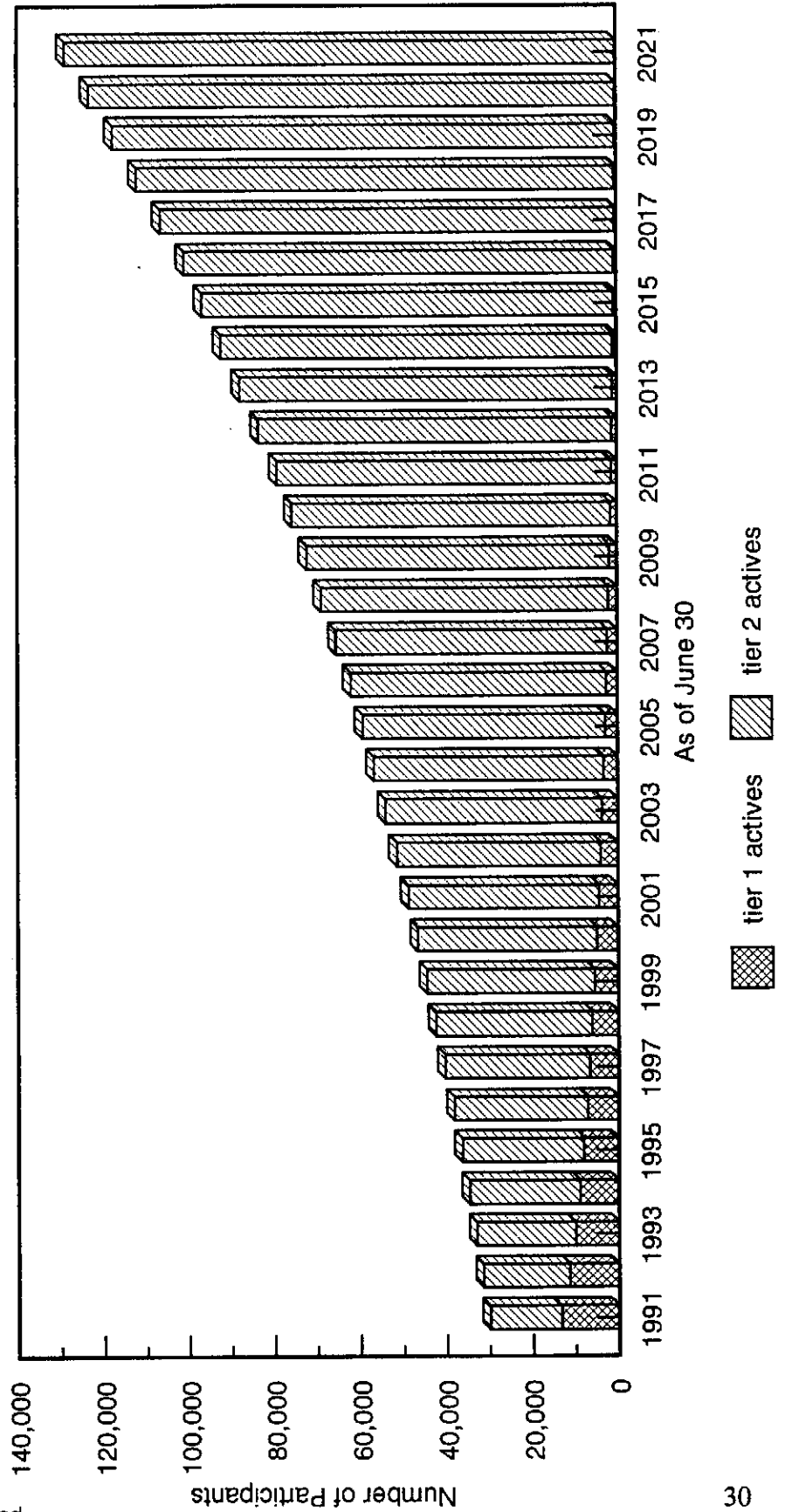
**State of Alaska PERS**  
**Projected Active Participant Count**  
**Annual Population Increase of 3%**



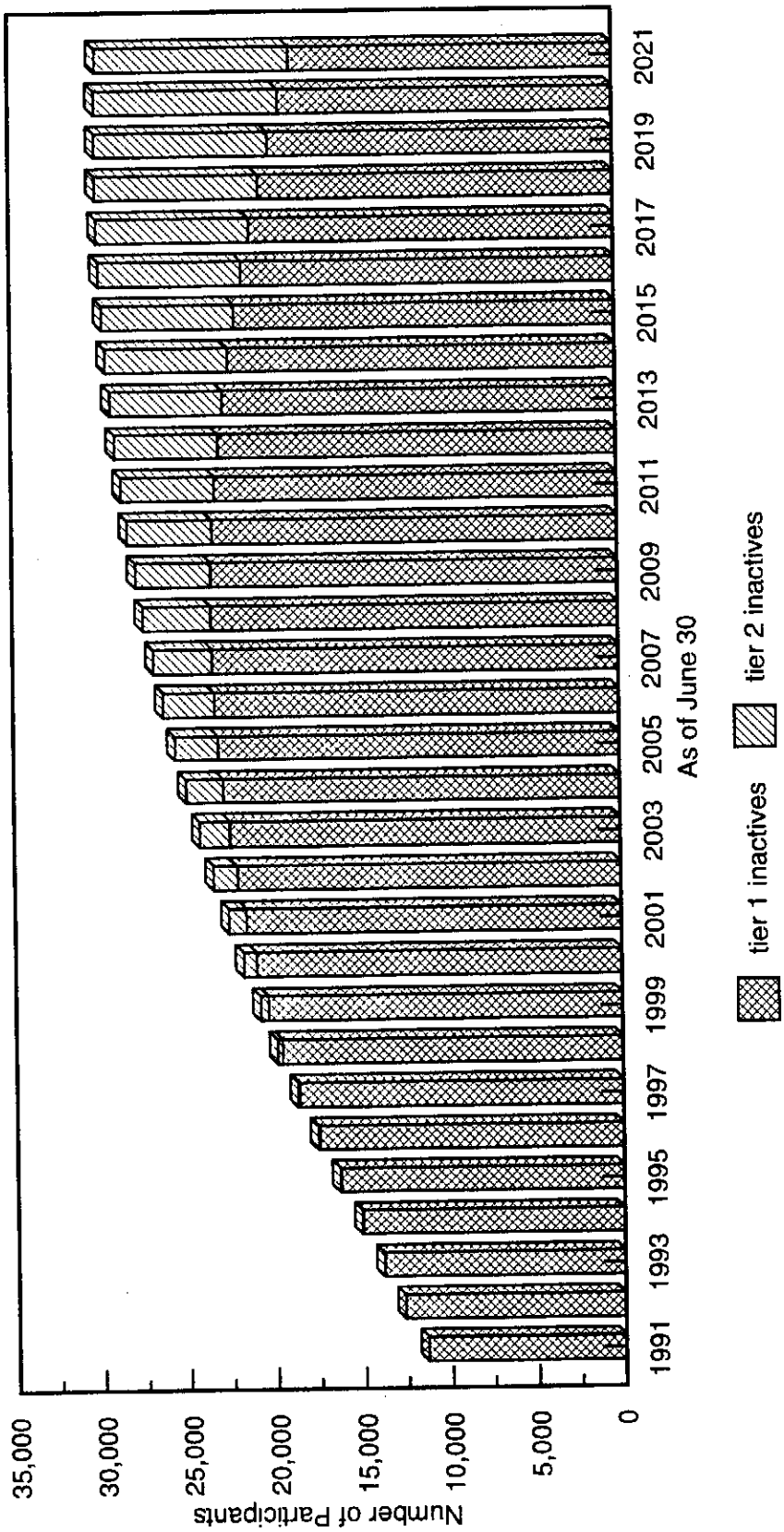


1.5 Actuarial Projections (continued)

**State of Alaska PERS**  
**Projected Active Participant Count**  
**Annual Population Increase of 5%**

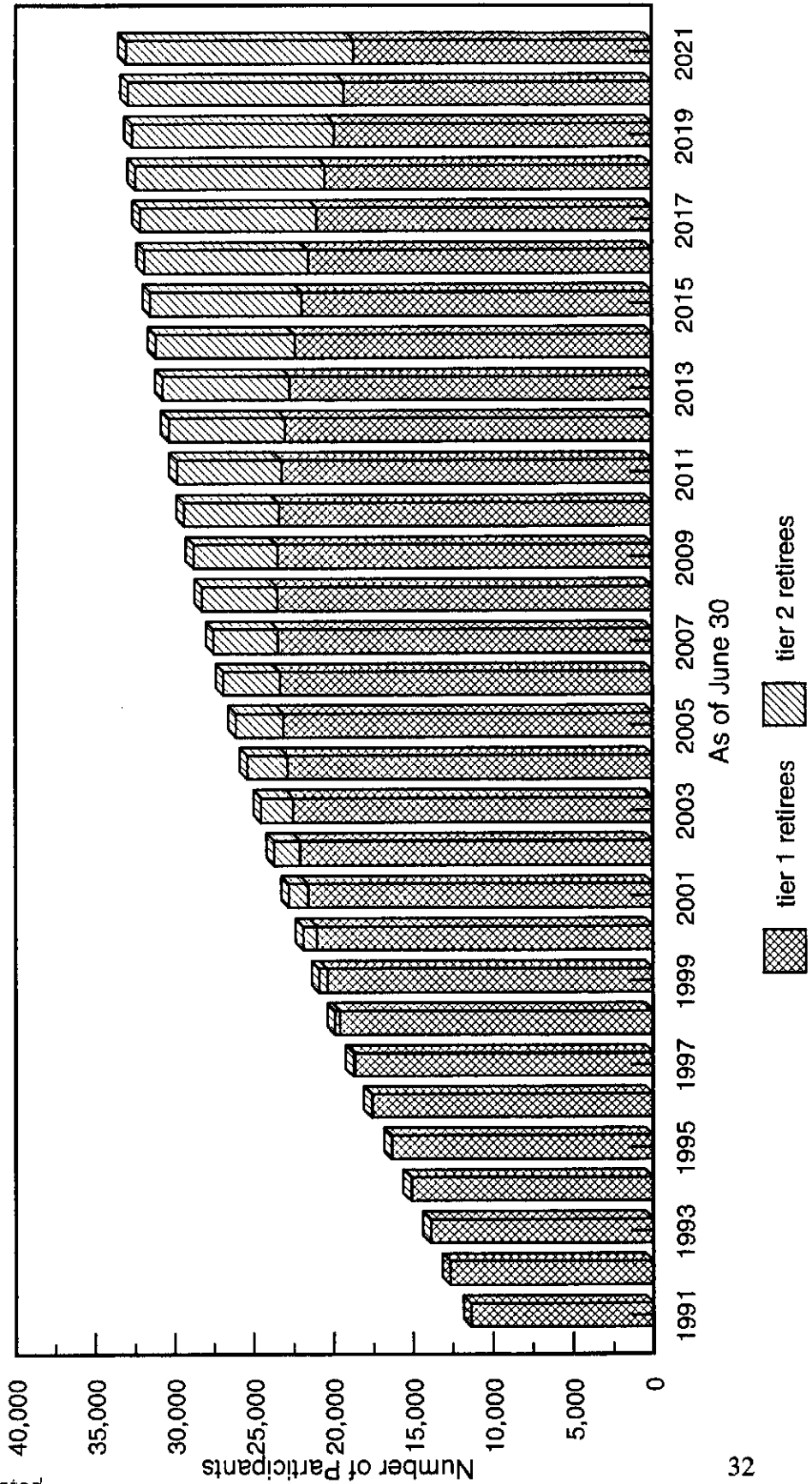


**State of Alaska PERS**  
**Projected Inactive Participant Count**  
**Annual Population Increase of 1%**

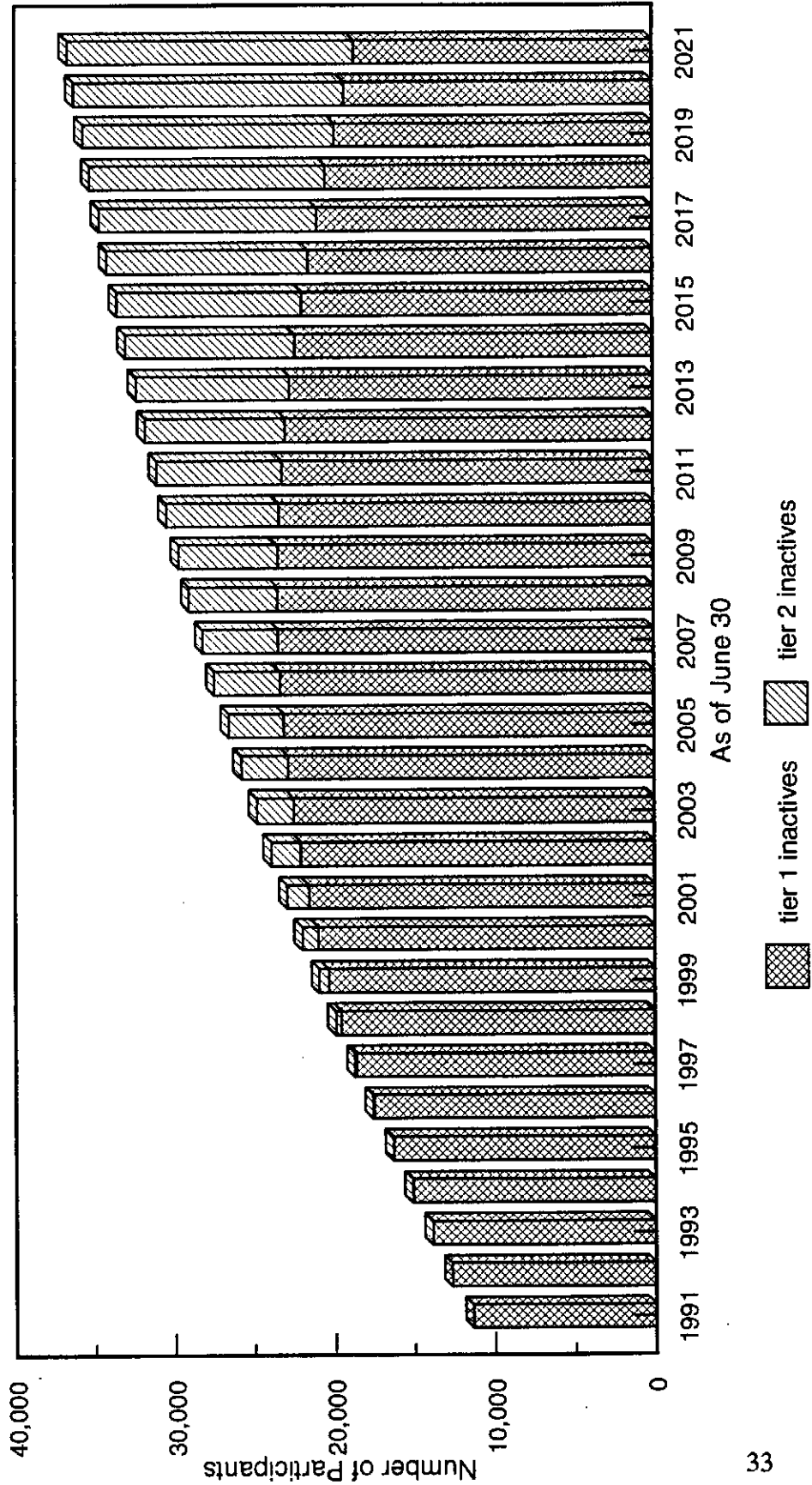


1.5 Actuarial Projections (continued)

**State of Alaska PERS**  
**Projected Inactive Participant Count**  
**Annual Population Increase of 3%**



**State of Alaska PERS**  
**Projected Inactive Participant Count**  
**Annual Population Increase of 5%**



## **Section 2**

### **Basis of 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 Public Employees' Retirement System**

### **(1) Effective Date**

January 1, 1961, with amendments through June 30, 1991. Chapter 82, 1986 Session Laws of Alaska, created a two-tier retirement system. New members who are first hired under the PERS after June 30, 1986 are entitled to different benefits than those members who were hired before July 1, 1986.

### **(2) Administration of Plan**

The Commissioner of Administration is responsible for administration of the system; the Public Employees' Retirement Board prescribes policies and adopts regulations to carry out provisions of the system; and the Commissioner of Revenue invests the funds. The Attorney General represents the system in legal proceedings.

### **(3) Employers Included**

State of Alaska, political subdivisions, and public organizations who have elected to join the system.

### **(4) Employees Included**

Membership in the Alaska PERS is compulsory for all full-time and part-time employees of the State and designated departments, groups or other classifications of employees of participating political subdivisions or public organizations, and elected officials unless they have waived participation.

University of Alaska employees who elect to participate in the University's optional retirement plan and employees who are participating in other retirement plans that are funded by the State are not covered by the PERS. However, certain members of the Alaska Teachers' Retirement System (TRS) are eligible for PERS retirement benefits for their elected public official service with municipalities. Additionally, employees who work half-time in the PERS and the TRS simultaneously are eligible for half-time PERS and TRS credit.

PERS members who receive PERS occupational disability benefits are also covered under the PERS and earn service credit while they are on disability.

### **(5) Credited Service**

Members receive credit for each day of PERS-covered employment.

Permanent part-time employees who work at least 15 hours per week, but less than 30 hours, receive service credit on a proportionate basis.

PERS members may claim PERS credit for the following service:

- part-time State of Alaska service rendered after December 31, 1960, and before January 1, 1976.
- service with the State, former Territory of Alaska, or U.S. Government in Alaska before January 1, 1961;
- past peace officer, correctional officer, fire fighter, and special officer service after January 1, 1961;
- military service (not more than five years may be claimed);
- temporary service after December 31, 1960;
- elected official service before January 1, 1981;
- Alaska Bureau of Indian Affairs service;
- half-time service that was rendered to PERS employers by employees who were also working in half-time positions covered by the Teachers' Retirement System; and
- leave without pay service after June 13, 1987, while the members were receiving Workers' Compensation.

Except for service before January 1, 1961, with the State, former Territory of Alaska, or U.S. Government in Alaska, contributions are required for all past service.

Past service rendered by employees of participating political subdivisions that occurred before the employers joined the PERS may be creditable if the employers agree to the pay required contributions.

#### **(6) Computation of Average Monthly Compensation**

A member's average monthly compensation is determined by averaging the highest salaries that the member received for any three consecutive payroll years. A member must have a minimum of 115 days of credited service in the last year worked to include it as one of the three highest.

**(7) Employer Contributions**

Separate contribution rates are established for each employer equal to the sum of:

(a) Consolidated Rate

A uniform rate for all participating employers sufficient to amortize all future service liabilities (less value of employee contributions) over the future working lifetimes of the covered group.

(b) Past Service Rate

A rate determined separately for each employer sufficient to amortize such employer's unfunded past service liability with level payments over 25 years. Any funding surplus is amortized over five years.

**(8) Employee Contributions**

Mandatory Employee Contributions: 7.5% of compensation for police and fire members; 6.75% of compensation for all other members. Employee contributions are deducted from the gross salary before federal income tax is withheld.

Note: Prior to January 1, 1987, rates were 5% for police and fire and 4.25% for all other members. Employee contributions were deducted from the gross salary after federal income tax was withheld.

Interest Credited: 4.5% compounded semiannually on June 30 and December 31.

Refund of Contributions:

If a member terminates PERS employment, the balance of the member's account (mandatory and voluntary contributions, indebtedness payments and interest earned) may be withdrawn by the member.

Note: The contribution accounts of terminated members may be attached to satisfy claims made under Alaska Statute 09.38.065, federal income tax levies and valid Qualified Domestic Relations Orders.



Reinstatement of Contributions: If mandatory contributions are refunded or withdrawn, the member must return to PERS employment in order to reinstate the refunded service. Upon reemployment, an indebtedness may be established for the amount of the refund. Contributions that are attached to satisfy claims under Alaska Statute 09.38.065 or a federal tax levy may be reinstated at any time; the member is not required to return to PERS employment. The indebtedness will accrue interest until it is paid in full or the member retires, whichever occurs first.

Refund at Death: If no survivor's pension is payable upon the member's death, the member's contribution account balance, including mandatory and voluntary contributions, indebtedness payments, and interest earned, will be paid to the designated beneficiary. When the member has more than one year of PERS credit, the beneficiary will also receive an additional \$1,000 plus \$100 for each year of PERS credit.

**(9) Normal Retirement Benefit**

**Eligibility:**

- (a) Upon attaining age 60 (age 55 for members who participated before July 1, 1986) and meeting one of the following service requirements:
  - (i) Five years of paid-up PERS service; or
  - (ii) 60 days of paid-up PERS service if the member was an employee of the legislature during each of five legislative sessions and was first hired under the PERS before May 30, 1987; or
  - (iii) 80 days of paid-up PERS service if the member was an employee of the legislature during each of five legislative sessions and was first hired under the PERS after May 29, 1987; or
  - (iv) two years of paid-up PERS service if the member is vested in the Teachers' Retirement System; or
  
- (b) At any age after meeting one of the following service requirements:
  - (i) 20 years of paid-up PERS service as a peace officer or fire fighter; or
  - (ii) 30 years of paid-up PERS service for "all other" members.

**Type:**

Life only, level income, or optional joint and survivor benefit (actuarially reduced).

Amount:

Others

2% of average monthly compensation for the first ten years of service, 2.25% for the next ten years, and 2.5% for all remaining years. Service before July 1, 1986 is credited at 2%.

Police & Fire

2% of average monthly compensation for the first ten years of service plus 2.5% for years of service in excess of ten.

Minimum Benefit - \$25.00 per month for each year of credited service.

**(10) Early Retirement Benefit**

Eligibility:

Upon attaining age 55 (age 50 for members who participated before July 1, 1986) and meeting one of the following service requirements:

- (i) Five years of paid-up PERS service; or
- (ii) 60 days of paid-up PERS service if the member was an employee of the legislature during each of five legislative sessions and was first hired under the PERS before May 30, 1987; or
- (iii) 80 days of paid-up PERS service if the member was an employee of the legislature during each of five legislative sessions and was first hired under the PERS after May 29, 1987; or
- (iv) two years of paid-up PERS service if the member is vested in the Teachers' Retirement System.

Type:

Life only, level income, or optional joint and survivor benefit (actuarially reduced).

Amount:

Actuarial equivalent of normal retirement benefit (see 9 above) based on service and compensation to early retirement date.

**(11) Deferred Benefit**

Eligibility:

Refer to (9) *Normal Retirement Benefit* and (10) *Early Retirement Benefit*, above. Withdrawal of employee contributions voids rights to benefits.

Type:

Life only, level income, or joint and survivor benefit (actuarially reduced).

Amount:

Refer to (9) *Normal Retirement Benefit* and (10) *Early Retirement Benefit*, above.

**(12) Indebtedness Owing At Retirement**

If on the date of appointment to retirement, a member has not paid the full indebtedness amount including interest to the retirement fund, the member's retirement benefit will be reduced for life by an amount equal to the actuarial equivalent of the outstanding indebtedness at the time of retirement.

**(13) Re-employment of a Retired Member**

If a retired member is reemployed in a position covered under the system, the retirement benefit will be suspended during the period of reemployment. During such period of reemployment, retirement contributions are mandatory.

A member who returns to PERS employment after retiring under the Retirement Incentive Program (RIP) will:

- (a) forfeit the three years of incentive credits that were granted; and
- (b) be indebted to the system in an amount equal to 110% of the benefits that were paid because of the member's participation in the RIP, including health insurance costs. The indebtedness is reduced by the amount that the member paid to participate.

**(14) Disability Benefit**

Occupational Disability:

Eligibility:

No age or service requirements.

Type:

Monthly benefit payable until death, recovery, or normal retirement.

Amount:

40% of gross monthly compensation (66-2/3% for police/fire members who participated before July 1, 1976, offset by any workers compensation) at date of disability. When the disabled member becomes eligible for normal retirement, the occupational disability benefit will terminate and the member will be appointed to normal retirement. The normal retirement benefit will be computed as if the member had been employed and had earned PERS credit during the period of occupational disability.

Non-Occupational Disability:

Eligibility:

Five or more years of credited service.

Type:

Monthly benefit payable until death, recovery, or normal retirement.

Amount:

Refer to (9) *Normal Retirement Benefits* on page 21. When the disabled member becomes eligible for normal retirement, the nonoccupational disability benefit will terminate. The period of time on nonoccupational disability is not included in the normal retirement benefit calculation.

**(15) Death Benefit Before Retirement**

Occupational Death:

Eligibility:

No age or service requirements.

Benefit:

40% (66-2/3% for police/fire members who participated before July 1, 1976) of gross monthly compensation at date of death or disability, if earlier, may be paid to the spouse or if there is no spouse, to the member's dependent children. On the member's normal retirement date, the benefit converts to a normal retirement benefit based on the member's salary on the date of disability or death and credited service, including the period from the date of disability or death to the normal retirement date.

Non-Occupational Death:

With less than one year of credited service, the member's contribution account balance, including mandatory and voluntary contributions, indebtedness payments, and interest earned, will be paid to the designated beneficiary. With more than one, but less than five years of credited service, the beneficiary will also receive \$1,000 plus \$100 for each year of PERS service.

When the member is vested, the surviving spouse may elect to receive the benefits described above or a 50% joint and survivor option based on the member's average monthly compensation and credited service at the time of death.

**(16) Death Benefits After Retirement**

If a member had received retirement benefits prior to his or her death, the designated beneficiary will receive the member's contribution account balance, minus any benefits already paid. However, if the member elected one of the joint and survivor options (50%, 66-2/3% or 75%) at retirement, an eligible spouse would receive a continuing monthly benefit for the rest of his or her life.

**(17) Post-Retirement Pension Adjustment**

A post-retirement pension adjustment will be issued to an eligible benefit recipient each year if the consumer price index (CPI) increases during the prior calendar year. The adjustment to the benefit, excluding the cost-of-living allowance, will be:

- (a) 75% of the CPI increase (not to exceed 9%) for recipients who are at least age 65 or on PERS disability; or
- (b) 50% of the CPI increase (not to exceed 6%) for recipients who are at least age 60 but under 65, and for recipients who have been receiving benefits for at least five years who are under age 60.

(Ad hoc PRPA's of up to 4% may be issued to retirees who were first hired before July 1, 1986 if the CPI has increased and the financial condition of the fund will permit an increase).

**(18) Cost-of-Living Allowance**

Starting at age 65, a retired member who remains in Alaska is eligible for a cost-of-living allowance (COLA) equal to 10% of the base retirement benefit or \$50 per month, whichever is greater. Members who were first hired before July 1, 1986 or who are receiving disability benefits are eligible for COLA, regardless of age.

**(19) Voluntary Contributions**

An employee can voluntarily contribute up to 5% of his or her salary. Voluntary contributions are recorded in a separate account and are payable to the:

- (a) member in a lump sum after termination of employment; or
- (b) member's beneficiary if the member dies; or
- (c) member when the member retires in a lump sum, life annuity, or payments over a designated period of time.

## 2.2(a) Participant Census Information - Total PERS as of June 30

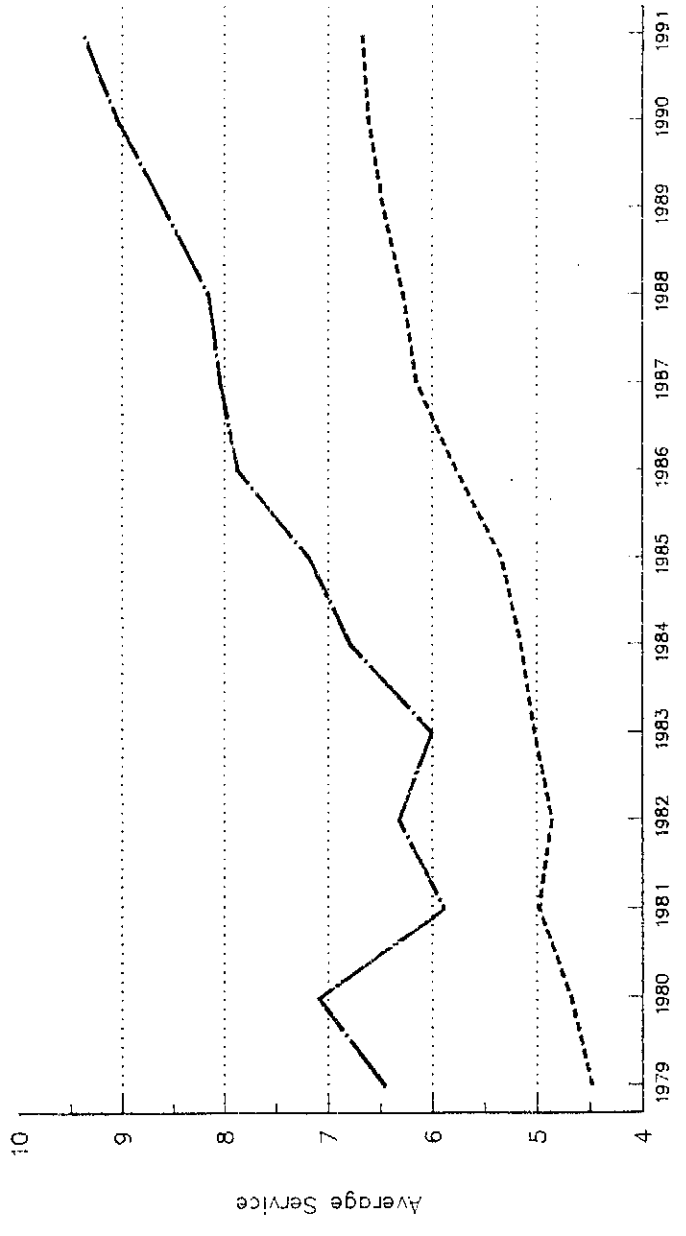
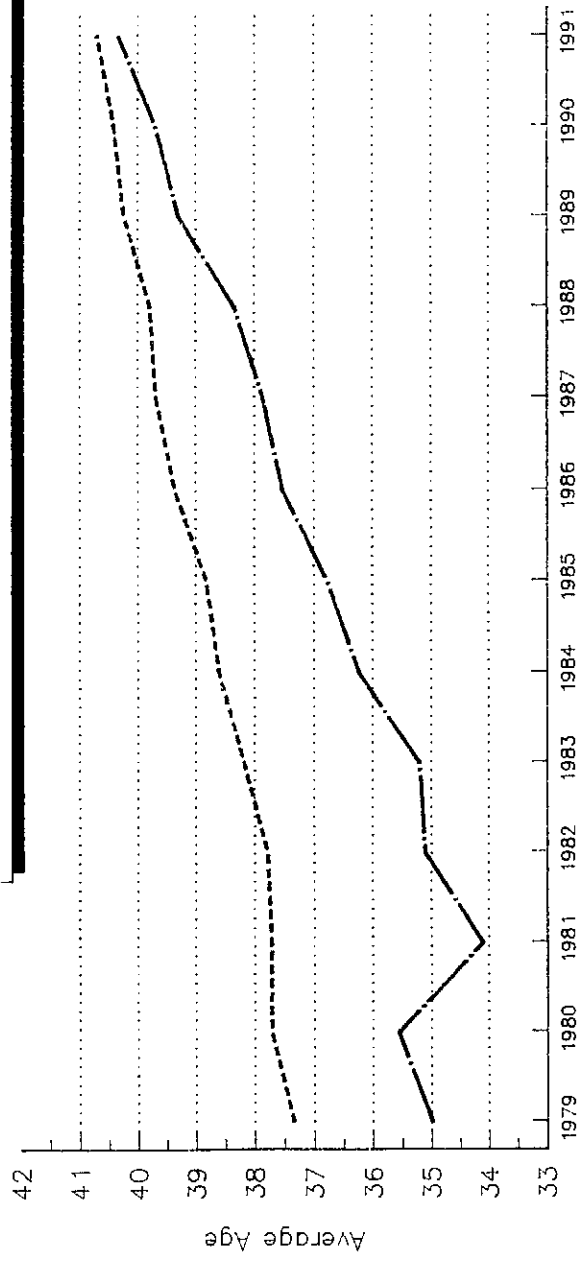
	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
<b>Active Members</b>					
(1) Number	26,762	26,676	28,044	29,086	29,840
(2) Average Age	39.53	39.67	40.17	40.37	40.68
(3) Average Credited Service	6.32	6.45	6.66	6.82	6.91
(4) Average Annual Salary	\$ 33,305	\$ 34,052	\$ 32,550	\$ 32,733	\$ 34,444
<b>Retirees and Beneficiaries</b>					
(1) Number	5,651	6,702	6,967	7,365	8,358
(2) Average Age	60.39	62.82	63.28	63.62	63.15
(3) Average Monthly Benefit:					
Base	\$ 753	\$ 791	\$ 795	\$ 797	\$ 864
C.O.L.A.	62	64	64	61	66
P.R.P.A.	110	90	98	110	108
TOTAL	925	945	957	968	1,038
<b>Vested Terminations</b>					
(1) Number	1,921	1,898	2,314	2,745	3,015
(2) Average Age	45.33	42.77	42.97	42.96	43.20
(3) Average Monthly Benefit	\$ 425	\$ 504	\$ 519	\$ 536	\$ 556
<b>Non-Vested Terminations With Account Balances</b>					
(1) Number	3,965	3,101	3,365	3,695	4,108
(2) Average Account Balance	\$ 1,114	\$ 2,100	\$ 1,891	\$ 2,045	\$ 2,124

## 2.2(b) Additional Information - Active Members by Type of Status as of June 30

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
<b>Active Police &amp; Fire</b>					
(1) Number	2,319	2,327	2,414	2,419	2,533
(2) Average Age	37.86	38.35	39.31	39.70	40.35
(3) Average Credited Service	8.05	8.16	8.60	9.05	9.38
(4) Average Annual Salary	\$ 43,484	\$ 43,947	\$ 43,082	\$ 43,462	\$ 47,470
(5) Number Vested	1,433	1,505	1,598	1,683	1,795
(6) Percent Who Are Vested	61.8%	64.7%	66.2%	69.6%	70.9%
<b>Active "Other" Members</b>					
(1) Number	24,443	24,349	25,630	26,667	27,307
(2) Average Age	39.69	39.80	40.25	40.43	40.71
(3) Average Credited Service	6.16	6.29	6.48	6.62	6.68
(4) Average Annual Salary	\$ 32,339	\$ 33,106	\$ 31,558	\$ 31,760	\$ 33,236
(5) Number Vested	11,664	12,191	13,345	14,109	14,234
(6) Percent Who Are Vested	47.7%	50.1%	52.1%	52.9%	52.1%

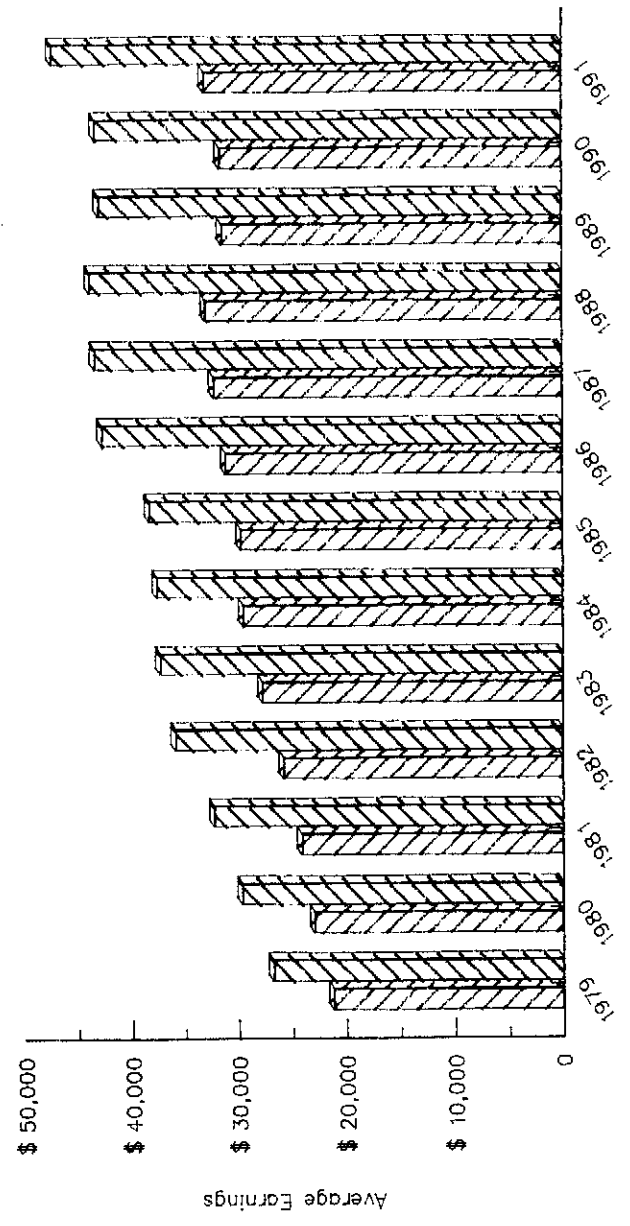
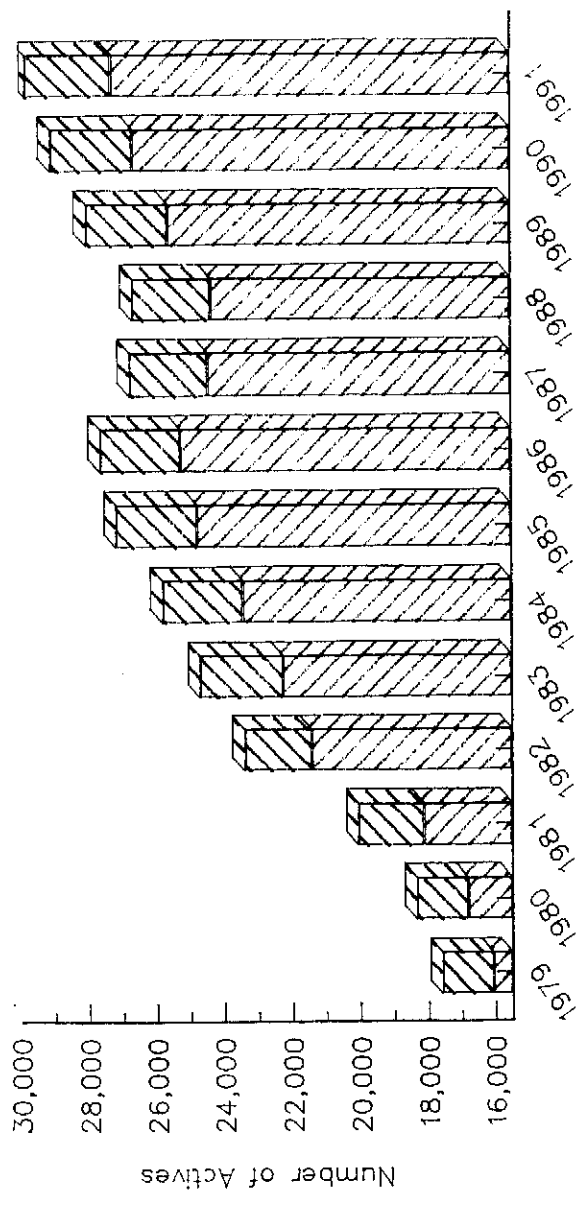


# State of Alaska - PERS Actives



**Other**      **Police/Fire**  
 - - - - -      - - - - -

# State of Alaska - PERS Actives



actives

Other

Police/Fire

## 2.2(c) Distribution of Active Police and Fire Participants

----- Annual Earnings By Age -----				----- Annual Earnings By 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	157	\$ 3,658,095	\$ 23,300
20-24	41	1,120,980	27,341	1	157	5,607,169	35,714
25-29	158	6,160,405	38,990	2	205	8,144,603	39,730
30-34	401	17,878,416	44,585	3	188	7,769,183	41,325
35-39	621	29,808,046	48,000	4	113	5,032,661	44,537
40-44	682	34,490,859	50,573	0- 4	820	30,211,711	36,844
45-49	403	19,977,298	49,571	5- 9	703	32,865,050	46,750
50-54	165	8,185,581	49,610	10-14	551	29,136,000	52,878
55-59	50	2,166,563	43,331	15-19	345	20,928,918	60,664
60-64	12	452,150	37,679	20-24	107	6,703,276	62,647
65-69	0	0	0	25-29	6	340,869	56,812
70-74	0	0	0	30-34	1	54,474	54,474
75-79	0	0	0	35-39	0	0	0
80+	0	0	0	40+	0	0	0
<b>Total</b>	<b>2,533</b>	<b>\$ 120,240,298</b>	<b>\$ 47,470</b>	<b>Total</b>	<b>2,533</b>	<b>\$ 120,240,298</b>	<b>\$ 47,470</b>

### Years of Service By Age

Age	----- Years of Service -----									
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	0	0	0	0	0	0	0	0	0	0
20-24	40	1	0	0	0	0	0	0	0	41
25-29	133	25	0	0	0	0	0	0	0	158
30-34	171	170	58	2	0	0	0	0	0	401
35-39	140	214	200	66	1	0	0	0	0	621
40-44	177	155	150	154	45	1	0	0	0	682
45-49	98	93	87	77	45	3	0	0	0	403
50-54	37	34	44	34	13	2	1	0	0	165
55-59	20	10	9	8	3	0	0	0	0	50
60-64	4	1	3	4	0	0	0	0	0	12
65-69	0	0	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0	0	0
80+	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>820</b>	<b>703</b>	<b>551</b>	<b>345</b>	<b>107</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2,533</b>

**2.2(e) Statistics on New Retirees  
Police and Fire Members During the Year Ending June 30**

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
<b>Service</b>					
(1) Number	91	64	9	36	96
(2) Average Age at Retirement	47.93	49.39	52.55	51.19	50.97
(3) Average Monthly Benefit	\$ 2,423	\$ 2,467	\$ 1,536	\$ 1,551	\$ 2,008
<b>Disability</b>					
(1) Number	4	7	8	1	6
(2) Average Age at Retirement	42.01	40.30	39.71	38.05	40.71
(3) Average Monthly Benefit	\$ 1,543	\$ 1,147	\$ 1,662	\$ 1,171	\$ 2,216
<b>Survivor</b>					
(1) Number	1	1	1	1	1
(2) Average Age at Retirement	49.17	50.91	52.30	52.62	47.9
(3) Average Monthly Benefit	\$ 231	\$ 181	\$ 611	\$ 312	\$ 1,114
<b>Total</b>					
(1) Number	96	72	18	38	103
(2) Average Age at Retirement	47.70	48.53	46.83	50.88	50.34
(3) Average Monthly Benefit	\$ 2,364	\$ 2,307	\$ 1,541	\$ 1,508	\$ 2,011

## 2.2(d) Distribution of Active "Other" Participants

----- Annual Earnings By Age -----				----- Annual Earnings By 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	78	\$ 803,480	\$ 10,301	0	4,496	\$ 88,738,928	\$ 19,737
20-24	906	18,418,560	20,330	1	3,458	92,734,760	26,817
25-29	2,487	62,547,720	25,150	2	2,691	81,158,616	30,159
30-34	4,258	129,191,168	30,341	3	2,102	65,619,940	31,218
35-39	5,647	189,980,816	33,643	4	1,480	50,052,896	33,820
40-44	5,689	207,024,192	36,390	0- 4	14,227	378,305,140	26,591
45-49	3,845	141,218,112	36,728	5- 9	6,793	249,748,350	36,766
50-54	2,417	90,067,672	37,264	10-14	3,950	166,767,280	42,220
55-59	1,240	43,600,936	35,162	15-19	1,650	76,720,440	46,497
60-64	557	18,970,298	34,058	20-24	528	27,110,108	51,345
65-69	145	4,658,070	32,125	25-29	138	7,666,339	55,553
70-74	32	884,357	27,636	30-34	19	1,120,181	58,957
75-79	6	201,818	33,636	35-39	1	77,865	77,865
80+	0	0	0	40+	1	51,496	51,496
Total	27,307	\$ 907,567,199	\$ 33,236	Total	27,307	\$ 907,567,199	\$ 33,236

### Years of 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	78	0	0	0	0	0	0	0	0	78
20-24	893	13	0	0	0	0	0	0	0	906
25-29	2,098	372	17	0	0	0	0	0	0	2,487
30-34	2,715	1,102	419	22	0	0	0	0	0	4,258
35-39	2,880	1,601	919	242	5	0	0	0	0	5,647
40-44	2,391	1,595	1,043	519	137	4	0	0	0	5,689
45-49	1,482	997	701	398	197	68	2	0	0	3,845
50-54	887	608	478	274	117	45	8	0	0	2,417
55-59	484	321	236	132	47	15	5	0	0	1,240
60-64	223	149	107	51	19	5	3	0	0	557
65-69	73	32	25	9	4	1	0	1	0	145
70-74	20	2	5	2	2	0	0	0	1	32
75-79	3	1	0	1	0	0	1	0	0	6
80+	0	0	0	0	0	0	0	0	0	0
Total	14,227	6,793	3,950	1,650	528	138	19	1	1	27,307

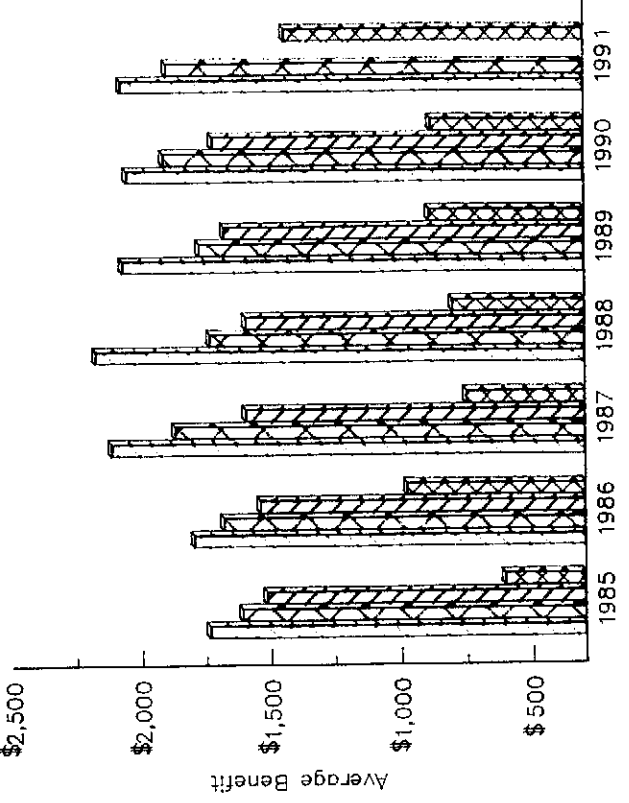
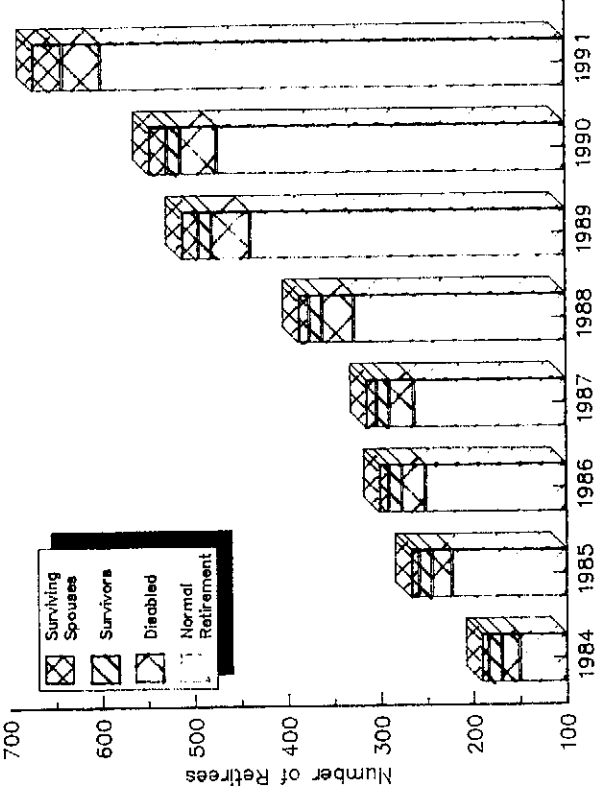
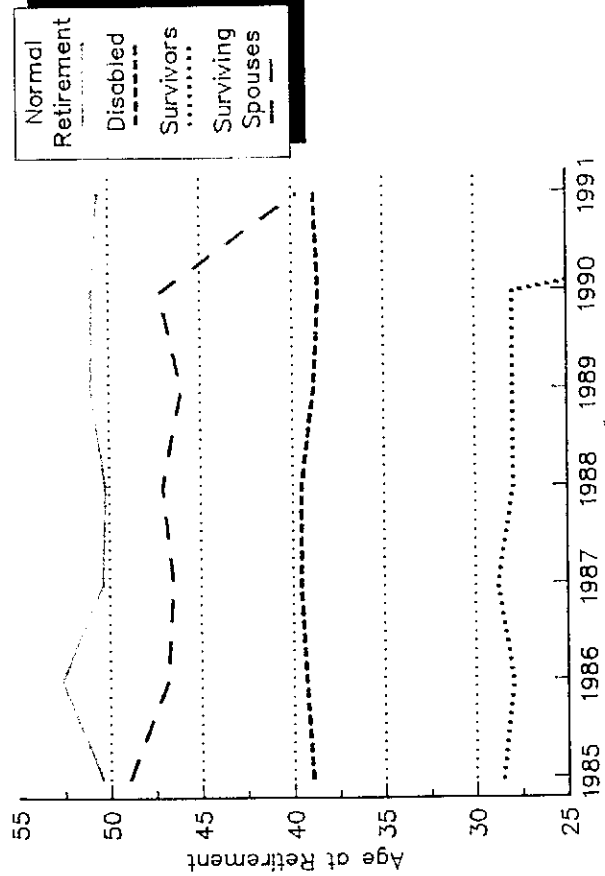
**2.2(f) Statistics on New Retirees  
"Other" Members During the Year Ending June 30**

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
<b>Service</b>					
(1) Number	924	972	309	420	829
(2) Average Age at Retirement	57.08	56.53	57.44	56.40	55.82
(3) Average Monthly Benefit	\$ 1,094	\$ 982	\$ 746	\$ 853	\$ 1,121.36
<b>Disability</b>					
(1) Number	14	22	25	22	20
(2) Average Age at Retirement	45.66	46.53	46.61	45.85	45.38
(3) Average Monthly Benefit	\$ 945	\$ 1,073	\$ 1,061	\$ 955	\$ 944.17
<b>Survivor</b>					
(1) Number	11	20	18	15	27
(2) Average Age at Retirement	48.89	46.02	45.38	53.05	60.35
(3) Average Monthly Benefit	\$ 545	\$ 515	\$ 725	\$ 748	\$ 674.75
<b>Total</b>					
(1) Number	949	1,014	352	457	876
(2) Average Age at Retirement	56.82	56.11	56.05	55.78	55.72
(3) Average Monthly Benefit	\$ 1,085	\$ 975	\$ 767	\$ 855	\$ 1,103.55

## 2.2(g) Statistics on All Retirees as of June 30, 1991

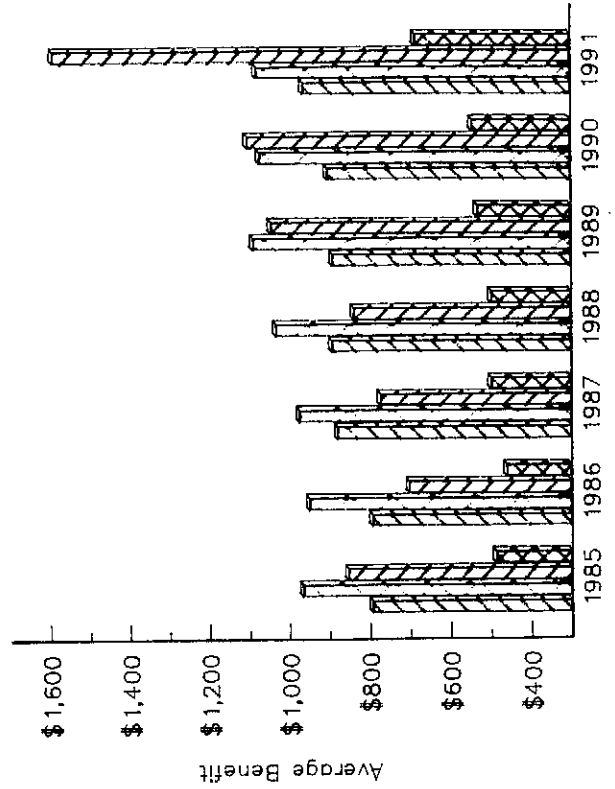
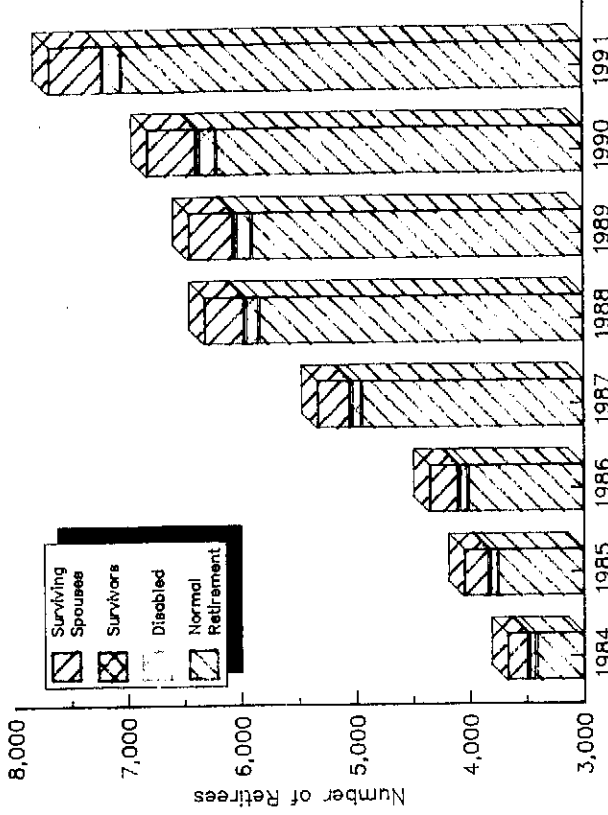
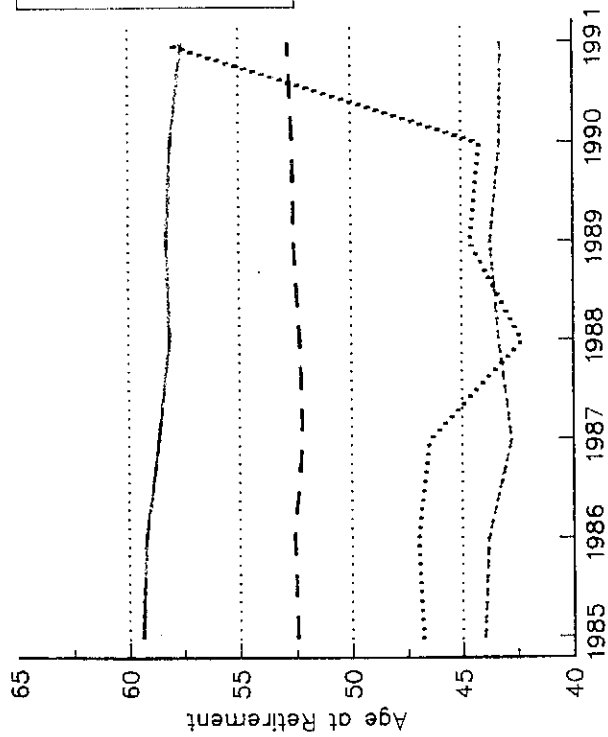
	<u>Police &amp; Fire</u>	<u>"Other"</u>
<b>Service Retirement</b>		
(1) Number, June 30, 1990	474	6,211
(2) Net Change During FY91	126	838
(3) Number, June 30, 1991	600	7,049
(4) Average Age At Retirement	50.53	57.56
(5) Average Age Now	56.32	64.35
(6) Average Monthly Benefit	\$ 2,073.50	\$ 965.10
<b>Surviving Spouse's Benefits</b>		
(1) Number, June 30, 1990	19	433
(2) Net Change During FY91	12	34
(3) Number, June 30, 1991	31	467
(4) Average Age At Retirement	39.65	52.83
(5) Average Age Now	50.49	61.90
(6) Average Monthly Benefit	\$ 1,443.31	\$ 685.53
<b>Survivor's Benefits</b>		
(1) Number, June 30, 1990	14	23
(2) Net Change During FY91	(14)	(21)
(3) Number, June 30, 1991	0	2
(4) Average Age At Retirement	--	58.23
(5) Average Age Now	--	60.68
(6) Average Monthly Benefit	--	\$ 1,594.33
<b>Disabilities</b>		
(1) Number, June 30, 1990	40	151
(2) Net Change During FY91	1	17
(3) Number, June 30, 1991	41	168
(4) Average Age At Retirement	38.77	43.18
(5) Average Age Now	43.58	47.61
(6) Average Monthly Benefit	\$ 1,899.08	\$ 1,081.76
<b>Total Number of Retirees</b>	<b>672</b>	<b>7,686</b>

# State of Alaska - PERS Police/Fire Retirees





# State of Alaska - PERS "Other" Retirees



## 2.2(h) Distribution of Annual Benefits for Police and Fire Benefit Recipients

----- Annual Benefit By Age -----				-- Annual Benefit By Years Since Retirement* --			
Age Groups	Number of People	Total Annual Benefit	Average Annual Benefit	Years of Service	Number of People	Total Annual Benefit	Average Annual Benefit
0-19	0	\$ 0	\$ 0	0	103	\$ 2,485,532	\$24,131
20-24	1	6,230	6,230	1	68	1,642,502	24,154
25-29	0	0	0	2	21	425,851	20,279
30-34	2	39,842	19,921	3	84	2,382,680	28,365
35-39	17	307,228	18,072	4	111	3,126,128	28,163
40-44	54	1,529,641	28,327	0- 4	387	10,062,693	26,002
45-49	122	3,601,633	29,522	5- 9	140	3,510,029	25,072
50-54	145	3,733,396	25,748	10-14	110	2,214,376	20,131
55-59	128	3,130,074	24,454	15-19	32	568,047	17,751
60-64	111	2,471,851	22,269	20-24	3	45,371	15,124
65-69	59	1,078,130	18,273	25-29	0	0	0
70-74	23	378,300	16,448	30-34	0	0	0
75-79	7	79,633	11,376	35-39	0	0	0
80+	3	44,558	14,853	40+	0	0	0
<b>Total</b>	<b>672</b>	<b>\$16,400,516</b>	<b>\$24,406</b>	<b>Total</b>	<b>672</b>	<b>\$16,400,516</b>	<b>\$24,406</b>

### Years Since Retirement by Age\*

Age	----- Years Since Retirement -----									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	0	0	0	1	0	0	0	0	0	1
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	10	4	1	2	0	0	0	0	0	17
40-44	42	6	4	2	0	0	0	0	0	54
45-49	107	8	3	4	0	0	0	0	0	122
50-54	114	19	8	4	0	0	0	0	0	145
55-59	71	40	16	1	0	0	0	0	0	128
60-64	32	39	34	6	0	0	0	0	0	111
65-69	7	16	30	5	1	0	0	0	0	59
70-74	1	7	9	6	0	0	0	0	0	23
75-79	0	1	5	0	1	0	0	0	0	7
80+	1	0	0	1	1	0	0	0	0	3
<b>Total</b>	<b>387</b>	<b>140</b>	<b>110</b>	<b>32</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>672</b>

\* In previous years, this exhibit presented years since last hire date.

## 2.2(i) Distribution of Annual Benefits for "Other" Benefit Recipients

----- Annual Benefit By Age -----				-- Annual Benefit By Years Since Retirement* --			
Age Groups	Number of People	Total Annual Benefit	Average Annual Benefit	Years of Service	Number of People	Total Annual Benefit	Average Annual Benefit
0-19	9	\$ 60,562	\$ 6,729	0	876	\$11,600,484	\$13,243
20-24	3	18,170	6,057	1	645	7,059,093	10,944
25-29	2	17,128	8,564	2	317	3,114,263	9,824
30-34	9	86,130	9,570	3	949	11,591,061	12,214
35-39	26	245,587	9,446	4	937	12,626,872	13,476
40-44	57	595,682	10,451	0- 4	3,724	45,991,773	12,350
45-49	222	2,447,781	11,026	5- 9	1,925	21,926,907	11,391
50-54	904	10,208,748	11,293	10-14	1,424	14,327,880	10,062
55-59	1,500	19,712,318	13,142	15-19	548	4,811,655	8,780
60-64	1,584	20,241,844	12,779	20-24	58	544,760	9,392
65-69	1,499	15,715,962	10,484	25-29	6	75,045	12,508
70-74	1,006	10,401,842	10,340	30-34	1	18,906	18,906
75-79	539	5,249,886	9,740	35-39	0	0	0
80+	326	2,695,286	8,268	40+	0	0	0
<b>Total</b>	<b>7,686</b>	<b>\$87,696,926</b>	<b>\$11,410</b>	<b>Total</b>	<b>7,686</b>	<b>\$87,696,926</b>	<b>\$11,410</b>

### Years Since Retirement By Age\*

Age	----- Years Since Retirement -----									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
0-19	0	0	4	1	3	1	0	0	0	9
20-24	2	0	0	1	0	0	0	0	0	3
25-29	2	0	0	0	0	0	0	0	0	2
30-34	6	2	1	0	0	0	0	0	0	9
35-39	19	4	1	2	0	0	0	0	0	26
40-44	32	15	8	2	0	0	0	0	0	57
45-49	187	19	12	3	1	0	0	0	0	222
50-54	842	34	21	7	0	0	0	0	0	904
55-59	1,164	298	28	8	1	1	0	0	0	1,500
60-64	770	621	183	9	0	1	0	0	0	1,584
65-69	509	513	438	38	1	0	0	0	0	1,499
70-74	154	307	408	137	0	0	0	0	0	1,006
75-79	24	95	249	168	3	0	0	0	0	539
80+	13	17	71	172	49	3	1	0	0	326
<b>Total</b>	<b>3,724</b>	<b>1,925</b>	<b>1,424</b>	<b>548</b>	<b>58</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>7,686</b>

\* In previous years, this exhibit presented years since last hire date.

## 2.3 Actuarial Basis

### 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 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. Interest     | 8.75% per year, compounded annually, net of expenses.                              |
| 2. Salary Scale | 6.5% per year for the first five years of employment and 5.5% per year thereafter. |

3. Total Inflation                      Total inflation as measured by the Consumer Price Index for urban and clerical workers for Anchorage is assumed to increase 5% annually.
  
4. Health Cost Trend                      1992 -            12.5%  
    1993 -            11.5%  
    1994 -            10.5%  
    1995 -            9.5%  
    1996 -            8.5%  
    1997 and later - 7.5%
  
5. Mortality                                1984 Unisex Pension Mortality Table, set forward one year for male and police/fire members, and set backward four years for female members. Deaths are assumed to be occupational 85% of the time for Police/Fire, 35% for "Others".
  
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. Disabilities are assumed to be occupational 85% of the time for Police/Fire, 35% for "Others".
  
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 with five or more years of service 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., 71% are assumed to remain in Alaska and receive the C.O.L.A.
13. New Entrants                                Growth projections were made for the active PERS population under three scenarios:
- Pessimistic:            1% per year  
 Median:                    3% per year  
 Optimistic:             5% per year
14. Expenses                                      Expenses are covered in the interest assumption.

### **Valuation of Assets**

Based upon the five-year average ratio between actuarial and book values of the System's assets. The actuarial value of assets equals the market value, except that fixed income investments are carried at book value. Assets are accounted for on an accrued basis and are taken directly from audited financial statements provided by Coopers & Lybrand. Valuation assets cannot be outside the range of book and actuarial values.

### **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) were assumed such that the total rate for all retirees equals the present premium rate. 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 FY92, the pre-65 monthly premium is \$318.94 and the post-65 premium is \$121.50, based on a total blended premium of \$243.98. For FY93, the pre-65 monthly premium is \$310.80 and the post-65 premium is \$108.37, based on a total blended premium of \$226.90. These rates and the pre-65/post-65 split were provided by Deloitte & Touche.

**Table 1**  
**Alaska PERS**  
**Total Turnover Assumptions**

<u>Select Rates of Turnover During the First 10 Years of Employment</u>	<u>Ultimate Rates of Turnover After the First 10 Years of Employment</u>
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**Police and Fire:**

<u>Year of Employment</u>	----- Age at Hire -----			<u>Age</u>	<u>Rate</u>
	<u>20-29</u>	<u>30-39</u>	<u>40+</u>		
1	.22	.18	.10	20-39	.03
2	.19	.13	.10	40+	.01
3	.13	.12	.10		
4	.12	.12	.10		
5	.10	.10	.10		
6	.08	.08	.08		
7	.07	.07	.07		
8	.06	.06	.06		
9	.05	.05	.05		
10	.04	.04	.04		

**Others:**

<u>Year of Employment</u>	----- Age at Hire -----		<u>Age</u>	<u>Rate</u>
	<u>20-29</u>	<u>30+</u>		
1	.30	.23	20-29	.065
2	.23	.18	30-34	.060
3	.20	.14	35-44	.055
4	.16	.13	44+	.050
5	.16	.13		
6	.14	.13		
7	.12	.12		
8	.11	.11		
9	.09	.09		
10	.08	.08		

**Table 2**  
**Alaska PERS**  
**Disability Rates**  
**Annual Rates Per 1,000 Employees**

<u>Age</u>	<u>Police &amp; Fire Rate</u>	<u>"Other" Member Rate</u>
20	.85	.14
21	.87	.14
22	.90	.14
23	.94	.15
24	.98	.15
25	1.03	.15
26	1.08	.15
27	1.13	.15
28	1.19	.16
29	1.25	.16
30	1.31	.16
31	1.37	.17
32	1.43	.17
33	1.44	.25
34	1.48	.34
35	1.55	.44
36	1.65	.53
37	1.78	.64
38	1.94	.75
39	2.13	.87
40	2.35	.99
41	2.60	1.12
42	2.88	1.25
43	3.19	1.39
44	3.53	1.53
45	3.90	1.68
46	4.30	1.84
47	4.73	2.00
48	5.19	2.17
49	5.68	2.34
50	6.20	2.52
51	6.75	2.70
52	7.33	2.89
53	7.94	3.08
54	8.58	3.29
55	9.25	3.49
56	9.95	3.70
57	10.68	3.92
58	11.44	4.14
59	12.23	4.37
60	13.05	4.61
61	13.90	4.84
62	14.78	5.09
63	15.69	5.34
64	16.63	5.60

William M. Mercer, Incorporated