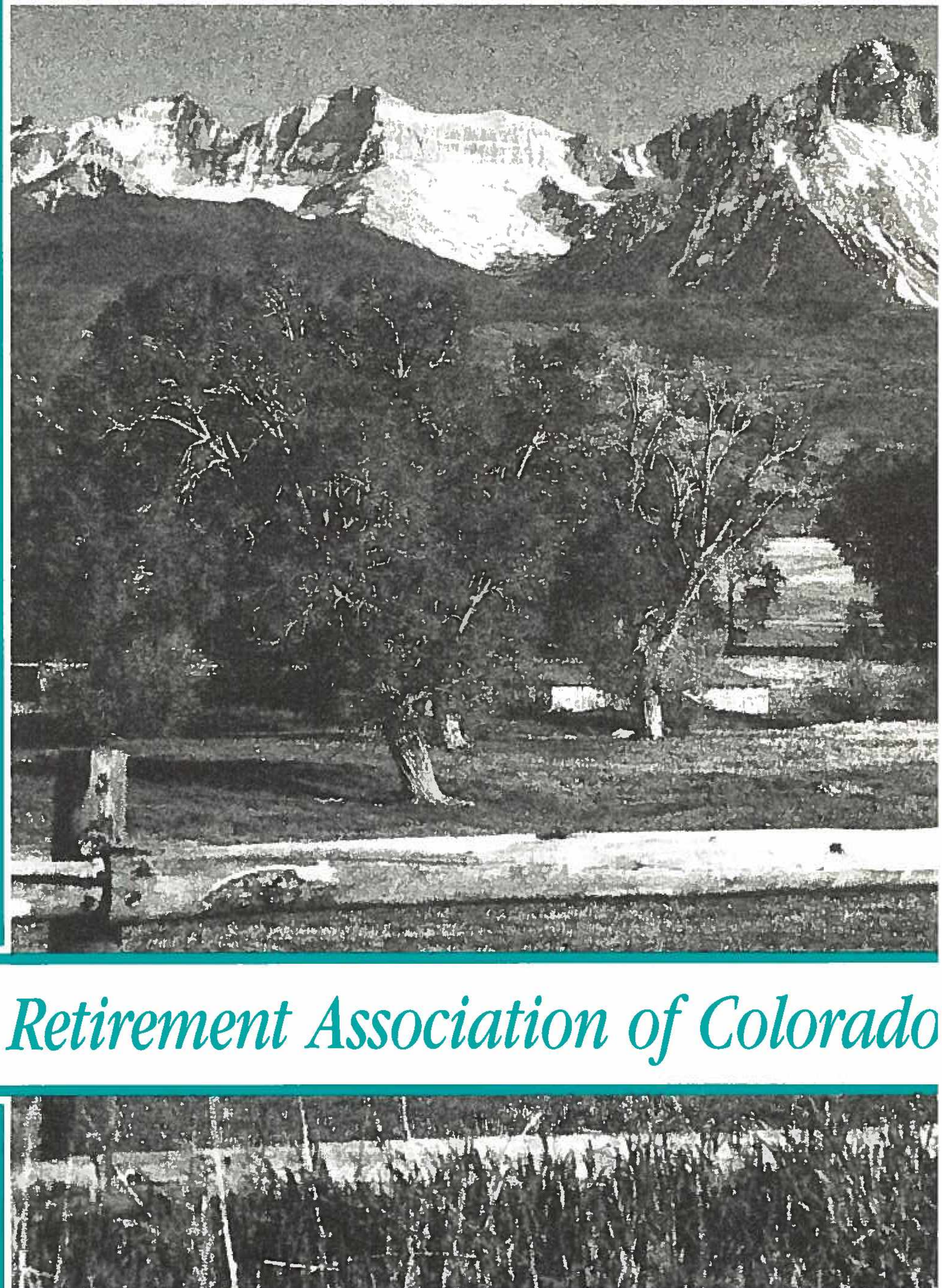


Public Employees' Retirement Association of Colorado

Comprehensive Annual Financial Report for the Fiscal Year Ended December 31, 1988

The Public Employees' Retirement Association of Colorado provides retirement and survivor benefits for the employees of 334 state, school and local government entities in Colorado.

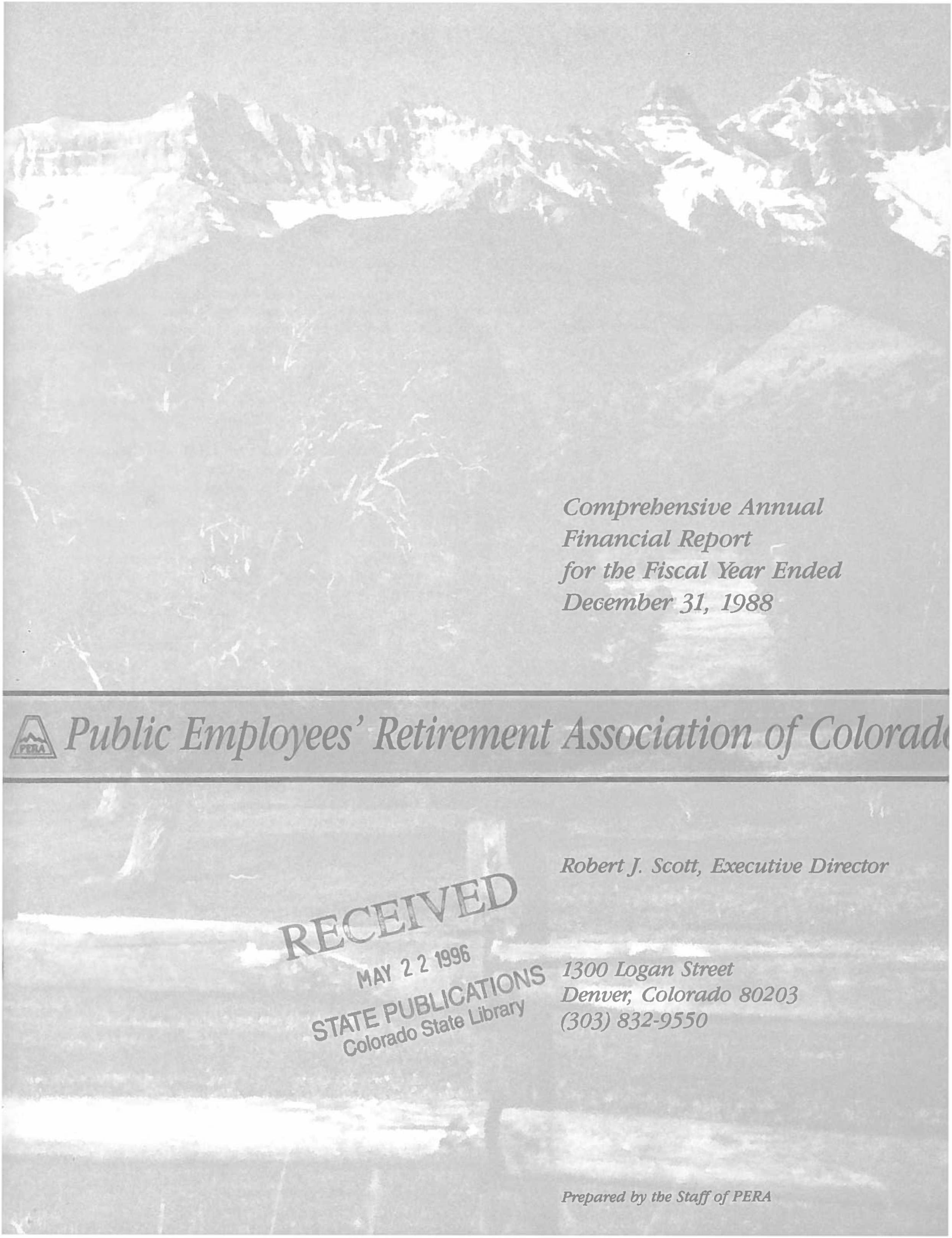
1988 Statistical Highlights

- Benefit Recipients 32,066
- Contributing Members 103,064
- Service Retirements 1,723
- Disability Retirements 345
- Member Deaths 172
- Deaths After Retirement 929

- Benefits Paid* .... $ 317,467,000
- Refunds .... $ 29,655,000
- Employer Contributions .... $ 298,217,000
- Member Contributions .... $ 206,432,000
- Investment Assets $7,942,371,000
- Realized Investment Income .... $ 632,791,000

- Investment Rate of Return 11.8%
- Five-Year Rate of Return 11.9%

*Includes health care premium subsidies paid to retirees and other benefit recipients.



Comprehensive Annual Financial Report for the Fiscal Year Ended December 31, 1988

Public Employees' Retirement Association of Colorad

Robert J. Scott, Executive Director

1300 Logan Street
Denver, Colorado 80203
(303) 832-9550

Prepared by the Staff of PERA

Comprehensive Annual Financial Report for the Fiscal Year Ended December 31, 1988

Public Employees' Retirement Association of Colorado

Robert J. Scott, Executive Director

1300 Logan Street
Denver, Colorado 80203
(303) 832-9550

Prepared by the Staff of PERA

Table of Contents

Introductory Section

PUBLIC EMPLOYEES' RETIREMENT ASSOCIATION OF COLORADO
1300 Logan Street Denver, Colorado 80203 (303) 832-9550

June 24, 1989

Dear Members of the Board of Trustees:

I am pleased to present the Comprehensive Annual Financial Report of the Public Employees' Retirement Association of Colorado for the year ended December 31, 1988.

The Report consists of seven sections. The Introductory Section contains this Letter of Transmittal, the Board Chairman's Letter, a summary of the benefit programs, information about the Board of Trustees, the administrative organizational chart and a list of the consultants used by PERA. The Financial Section contains the opinion of the independent certified public accountants, Arthur Andersen & Co., and the financial statements of the Association, followed by a Supporting Schedules Section. The Investment Section presents information regarding the fund's investments, including the Investment Policy and Investment Summary, information about the fund's performance, a Colorado Investment Profile, and listings of the Association's domestic stock holdings and brokers utilized.

The Actuarial Section contains the certification of the consulting actuary, Gabriel, Roeder, Smith & Company, along with the results of the actuarial valuation and other actuarial statistics. The Statistical Section contains tables of significant data pertaining to the Association. In the Other PERA Programs Section, the scope and activities of other programs in which the Association is involved for the good of its members and benefit recipients are explained. This includes the Health Care Program, the Life Insurance Program and the Voluntary Investment Program.

Accounting System and Reports

The Report has been prepared in accordance with generally accepted accounting principles applied on a consistent basis as agreed upon by the Governmental Accounting Standards Board (GASB) and the American Institute of Certified Public Accountants. The Financial Statements are presented in accordance with guidelines promulgated by the Financial Accounting Standards Board (FASB) Statement No. 35. The Notes to Financial Statements were prepared in accordance with GASB Statement No. 5.

Transactions of the Association are reported on the accrual basis of accounting for assets, liabilities, revenues and expenses. Revenues for PERA are taken into account when earned without regard to the date of collection. Expenses are recorded when the corresponding liabilities are incurred, regardless of when the payment is made. Fixed assets are recorded at cost and depreciated through charges to expense over the estimated useful lives of the assets.

In developing and evaluating the Association's accounting system, it was found that internal controls adequately safeguard assets and provide reasonable assurance of proper recording of financial transactions.

Contributions are based on the principles of level-cost financing, with current service financed on a current basis. Prior service is amortized over varying periods depending on the respective Division, i.e. 28 years for the State Division, 20 years for the School Division, 31 years for the Municipal Division and 32 years for the Judicial Division.

The Government Finance Officers Association (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to PERA for its financial report for the fiscal year ended December 31, 1987. To be awarded a Certificate of Achievement, a public employee retirement system must publish a readable and organized report that conforms to program standards. We believe our current Report continues to meet GFOA requirements, and we are submitting it to GFOA to determine its eligibility for another Certificate.

Revenues

The revenues needed to finance retirement benefits are accumulated through the collection of employer and member contributions, and through income on investments reported at market value. Contributions and investment income, including unrealized gains and losses for 1988, totaled $1,329,501,000.

As a budget reduction measure, the State Legislature temporarily reduced some employer contribution rates for the period July 1, 1987, to June 30, 1988. For the State Division, the contribution was reduced from 12.2 to 10.2 percent of salary; for State Troopers, the contribution was reduced from 13.2 to 11.2 percent of salary; for the School Division, the contribution was reduced from 12.5 to 11.5 percent of salary; and for the Judicial Division, the contribution was reduced from 15 to 13 percent of salary.

There was an increase in total contributions of approximately $21,005,000 resulting from increases in members and the amounts of their salaries.

Expenses

The primary expense of a retirement system relates to the purpose for which it is created, that is, the disbursement of retirement and survivor benefits. These recurring benefit payments, along with refunds of contributions to members who terminate employment, subsidies towards health care premiums and the cost of administering the Association comprise the total expense. In 1988, this totaled $365,757,000, an increase of 19.1 percent over 1987.

Total revenues of $1,329,501,000 exceeded expenses of $365,757,000 by $963,744,000 during 1988. Administrative expenses are controlled by an annual budget approved by the Board of Trustees, and represent 0.1 percent of total assets.

Value of Accumulated Plan Benefits (Reserves)

Accumulated plan benefits, as presented in our audited financial statements, total $6,684,114,000. This amount is calculated in accordance with FASB Statement No. 35, which does not take into consideration the effect of future salary increases.

For clarification, we also present in the Actuarial Section a summary of PERA's unfunded actuarial accrued liabilities. These liabilities are calculated using assets on a historical cost basis, and include the effect of projected future salary increases on liabilities. The Notes to Combined Financial Statements on pages 18 to 23 are governed by GASB Statement No. 5, and present actuarial valuations including future salary increases and assets at market value.

Investments

The investment portfolio is a major contributor to the Association. In 1988, realized income from both long and short-term investments amounted to $632,791,000. This exceeded the revenue contributed by members and employers of $206,432,000 and $298,217,000, respectively.

Changes in the composition of the total portfolio during the year are reflected in the Investment Summary on page 37. Proper funding and healthy investment returns are very important to the financial soundness of PERA. The high ratio of investment earnings to total revenue is evidence of the Association's continued strong financial management.

Asset Allocation

Implementation of a new strategic asset allocation policy began in 1988. An integral part of the overall investment policy, this allocation mix is designed to provide an optimal mix of asset categories. This, in turn, emphasizes a maximum diversification of the portfolio.

Both traditional (cash, bonds, domestic equities, fixed income and mortgages) and non-traditional (real estate, guaranteed investment contracts, international equities, venture capital and leveraged buy-outs) assets are incorporated into the mix.

Funding

The bottom line for a retirement system is its level of funding. If this level is adequate, the ratio of assets accumulated to total liabilities will be larger, and more income is available for investment purposes. Also, an adequate funding level gives the participants a higher degree of assurance that their pension benefits are secure.

The advantage of a well-funded plan is that participants can see assets which are irrevocably committed to the payment of promised benefits. Although the historical level of funding for PERA is good (as illustrated by the Solvency Test on page 54), continued effort is being directed at improving that level. Funding levels are presented in the Actuarial Section of this Report.

Professional Services

Professional consultants are hired to perform services essential to the efficient operation of PERA. Certifications from the external auditor and actuary are included in this Report. The Association's consultants are listed on page 11.

Review of Operations and Activities of 1988

The Association devotes much attention to advising members about their current or future benefits, and assisting them in making personal data record changes. During 1988, the Association's staff met individually with more than 3,000 members and benefit recipients in the PERA office, and responded to more than 47,000 telephone inquiries and 50,000 letters and other inquiries.

There were 217 meetings and 14 information tables held throughout Colorado to provide information about plan benefits; more than 10,000 members, retirees and other persons attended these sessions. Also, 21 meetings were held for 800 PERA-affiliated employer staff members. Finally, a new PERA Field Counseling Program began in 1988, with benefit counselors traveling around the state providing individual counseling to more than 1,200 members.

In May 1988, the Board of Trustees election was held. Dr. Terry Lantry was re-elected to represent State Division members, and Marsha Jackson and John Young were re-elected to represent School Division members.

Senior level management positions were reorganized in August 1988. Lana P. Calhoun became the Deputy Executive Director of Benefits and Nancy Williams was appointed Deputy Executive Director/General Counsel. Also, in an effort to support the increasing activity in PERA's life insurance and health care programs, an Insurance Division was created.

The Board of Trustees voted to transfer the PERA-sponsored life insurance plan underwritten by the New York Life Insurance Company to the Rocky Mountain Life Insurance Company, effective October 1, 1988.

The PERA Voluntary Investment Program (VIP), a 401(k) tax-deferred supplemental retirement program, continued to progress during the year. Assets grew from $4,292,531 at the end of 1987, to $7,975,075 at the end of 1988.

Acknowledgements

The cooperation of PERA-affiliated employers contributes significantly to the success of the Association. We thank them for their continuing support.

The compilation of this Report reflects the combined effort of the PERA staff. It is intended to provide complete and reliable information as a basis for making management decisions, determining compliance with legal provisions and determining responsible stewardship of assets contributed by the members and their employers. It is being mailed to all affiliated employers of the Association and other interested persons; a summary will be published in the next PERA Member and Retiree Reports.

I would like to express my gratitude to the staff, consultants, Board and other associates who worked diligently to ensure the successful operation of PERA in 1988.

Respectfully submitted,

Robert J. Scott
Executive Director

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Public Employees' Retirement Association of Colorado

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

December 31, 1987

A Certificate of Achievement for Excellence in Financial Reporting is presented by the Government Finance Officers Association of the United States and Canada to government units and public employee retirement systems whose comprehensive annual financial reports (CAFRs) achieve the highest standards in government accounting and financial reporting.

President

Executive Director

PUBLIC EMPLOYEES' RETIREMENT ASSOCIATION OF COLORADO
1300 Logan Street Denver, Colorado 80203 (303) 832-9550

June 23, 1989

To all PERA Members, Benefit Recipients and Employers:

The 1988 Comprehensive Annual Financial Report of the Public Employees' Retirement Association of Colorado presents a detailed view of the financial and actuarial status of your retirement system. I hope you will be pleased with PERA's growth in 1988, in light of the investment market in 1987.

The Board of Trustees is dedicated to preserving the financial integrity of the fund through a sound fiscal management program. It takes its role very seriously, and has spent considerable time in becoming knowledgeable in investment and asset allocation strategies and policies.

In the 1988 Colorado General Assembly, several bills were proposed by the Association and became law. These included the passage of a bill to institute a cost-of-living increase for more than 17,000 retirees and other benefit recipients, enhancement of PERA survivor benefit provisions, an increase in the premium subsidy for those persons enrolled in the Health Care Program, and a change in the law to reduce benefits for some disability retirees who also have earned income above a specified amount.

As PERA assets and commitments grow, the fund is increasingly affected by many factors -- both nationally and locally. These include:

- **Investment Markets.** As a result of the market decline in 1987 and the continuing prediction of an economic slowdown over the next two years, our investment analysts expect the fund's rate of return to remain slightly above what is actuarially required (7.5 percent). We do not expect the very high returns we experienced from 1982 to 1986 to continue.

- **Demographic Changes.** The percent of retirees to active members in PERA is increasing. This means the Association is paying more basic retirement benefits, cost-of-living increases and health care subsidies without a similar increase in contributions.

- **Federal Legislation.** There is continuing pressure to require public employees not covered under Social Security or Medicare to participate in those programs, and there is talk in Washington about the regulation and taxation of public pension systems.

- **Portability of Pension Accounts.** Our increasingly mobile society creates the need for improved portability of pension accounts for members.

PERA must be prepared to adjust to these and other factors in the public pension environment. The Board of Trustees cautiously considers benefit enhancements, and in 1988, it did not believe it was prudent to add any new financial commitments to the fund.

In closing, the Board and I extend our thanks for your support and interest. With it, PERA continues to be a leader in public employee retirement systems.

Sincerely,

Terry L. Lantry

Terry L. Lantry, J.D., C.P.A.
Chairman, Board of Trustees

Board of Trustees

By state law, the management of the public employees' retirement fund is vested in the Board of Trustees of the Public Employees' Retirement Association of Colorado.

The Board is composed of 16 members, including the State Auditor and State Treasurer. The 14 representative members are elected by mail ballot of their respective division members to serve on the Board for a four-year term. Five members are elected from the School Division, four from the State Division, two from the Municipal Division, two representing retirees and one from the Judicial Division. If a Board member resigns, a new member is appointed from the respective Division to complete the term.

Dr. Terry L. Lantry
Chairman of the Board
- Member since 1976
- Represents state employees
- Professor, Accounting & Business Law, Colorado State University
- Current term expires July 1, 1992

Frank V. Taulli
Vice-Chairman of the Board
- Member since 1977
- Represents school employees
- Elementary school principal, Pueblo Public Schools #60
- Current term expires July 1, 1990

Roberta Altenbern
- Member since 1977
- Represents school employees
- Middle school media specialist, Adams County School District 14
- Current term expires July 1, 1991

Patrick E. Dougherty
- Member since 1988
- Represents municipal employees
- Developmental Engineer, City of Arvada
- Current term expires July 1, 1992

Ada Houck
- Member since 1973
- Represents retirees
- Retired elementary teacher
- Current term expires July 1, 1989

Marsha M. Jackson
- Member since 1986
- Represents school employees
- Elementary classroom teacher, Mesa County School District
- Current term expires July 1, 1992

William Maguire
- Member since 1985
- Represents state employees
- Personnel Specialist, Colorado State Hospital
- Current term expires July 1, 1990

Gar McInnis
- Member since 1986
- Represents municipal employees
- Risk and Insurance Administrator, City of Colorado Springs
- Current term expires July 1, 1991

George Meares
- Member since 1987
- Represents state employees
- Department Controller, Highway Department
- Current term expires July 1, 1991

Edward W. Murrow
- Member since 1977
- Represents state employees
- Treasurer, University of Colorado
- Current term expires July 1, 1989

J. Kim Natale
- Member since 1985
- Represents school employees
- Math and science teacher, Jefferson County Public Schools
- Current term expires July 1, 1989

Timothy M. O'Brien
- Member since 1985
- State Auditor
- Continuous term, ex-officio

Gail Schoettler
- Member since 1987
- State Treasurer
- Continuous term, ex-officio

Donald P. Smith, Jr.
- Member since 1987
- Represents judges
- Judge, Colorado Court of Appeals
- Current term expires July 1, 1991

Carl S. Wilkerson
- Member since 1987
- Represents retirees
- Retired Deputy Executive Director, PERA
- Current term expires July 1, 1991

John Young
- Member since 1980
- Represents school employees
- Biology teacher, Jefferson County Public Schools
- Current term expires July 1, 1992

Administrative Organizational Chart*

BOARD OF TRUSTEES

Robert J. Scott
Executive Director

- **Robert Gray**
  Government Relations Director
- **David Maurek**
  Internal Auditor

- **Steven Brown**
  Deputy Executive Director
  Administration
  - **Karl Greve**
    Accounting Director
  - **Donald Schaefer**
    Communications Director
  - **Ray Clarke**
    Information Systems Director
  - **Patricia Bell**
    Personnel & Support Services Director
- **Lana Calhoun**
  Deputy Executive Director
  Benefits
  - **Renae McKenny**
    Insurance Director
  - **Claud Bays**
    Medical Advisor
  - **Colleen Murray**
    Member Services Director
  - **Wendy Tenzyk**
    Retirement Services Director
- **Norman Benedict**
  Deputy Executive Director
  Investments
  - **Bud Cosby**
    Equities Director
  - **Terry Maltarich**
    Fixed Income Director
  - **Daryl Roberts**
    Operations Director
  - **Allen Hamilton**
    Real Estate Director (Acting)
- **Nancy Williams**
  Deputy Executive Director/
  General Counsel

*As of 6-1-89.

Consultants

Auditor
Arthur Andersen & Co.
717 - 17th Street
Suite 1900
Denver, CO 80202

Health Care Program Actuary
Mercer-Meidinger-Hansen
1700 Lincoln Street
Suite 3300
Denver, CO 80203

Investments — Portfolio Consultant
Capital Trust
River Forum
Suite 450
4380 Southwest Macadam Avenue
Portland, OR 97201

Mercer-Meidinger-Hansen
3500 Texas Commerce Tower
2200 Ross Avenue
Dallas, TX 75201

Investments — Economists
Bankers Trust Company
280 Park Avenue
New York, NY 10017

The Boston Company
One Boston Place
Boston, MA 02108

Northern Trust Company
150 South LaSalle
Chicago, IL 60675

Provident National Bank
17th and Chestnut Streets
Philadelphia, PA 19103

Investment Performance Analyst
R.V. Kuhns & Associates, Inc.
1211 Southwest Fifth Avenue
Suite 2850
Portland, OR 97204

Pension Actuary
Gabriel, Roeder, Smith & Company
407 East Fort Street
Suite 200
Detroit, MI 48226

Risk Management
Johnson & Higgins of Colorado, Inc.
950 - 17th Street
Suite 1850
Denver, CO 80202

The Plan Summary

The Public Employees' Retirement Association plan was established in 1931, and began by covering state employees only. Since then, membership has expanded and includes employees of the State of Colorado, school districts except Denver, and numerous municipalities, special districts, public health departments and other local government entities, as well as the State's judicial system.

The Plan's purpose is to provide income to members and their families at retirement or in the event of death or disability. Funding for the plan operates on an actuarial reserve basis, with money being set aside for retirement benefits while the benefits are being earned and before they are paid.

Administration of the Plan

The Plan operates by authority of the Colorado General Assembly with benefits and administration defined under Title 24, Article 51 of the Colorado Revised Statutes. PERA is governed by a 16-member Board of Trustees, 14 of whom are elected by the membership to four-year terms and serve without compensation except for necessary expenses. The State Auditor and the State Treasurer serve as ex-officio members.

The Board appoints an Executive Director who is responsible for the daily operation of the Association. The legal advisor to the Board is the Colorado Attorney General. An actuary who makes annual valuations to determine the adequacy of the funding of retirement benefit liabilities accrued under the Plan is employed. Also, various advisory committees such as Audit, Insurance, Investments and Legislative are appointed by the Board.

Member Contributions

Members contribute 8 percent of their annual gross earnings to an individual account. State Troopers contribute 9 percent. Gross earnings include pay for overtime and additional duties, but not reimbursement for expenses nor contributions to an employer-sponsored "cafeteria plan" as defined by Internal Revenue Code Section 125. The accumulated amount in each account will be used to fund retirement benefits if service is not withdrawn.

These contributions are tax-deferred, and are not considered as income for federal and state income tax purposes until they are withdrawn through a refund or a benefit.

Employer Contributions

Affiliated employers also contribute a percentage of their total payroll to the fund. The rates of employer contributions are calculated by the Association's consulting actuary and are set by law: State Division, 12.2 percent; State Troopers, 13.2 percent; School Division, 12.5 percent; Municipal Division, 10.2 percent; and Judicial Division, 15.0 percent.

As a budget reduction measure, the State Legislature temporarily reduced employer contribution rates for the period July 1, 1987, to June 30, 1988, to 10.2 percent for the State Division; 11.2 percent for State Troopers; 11.5 percent for the School Division; and 13 percent for the Judicial Division.

Termination

A member who terminates PERA-affiliated employment may apply for a refund of all of the contributions he or she made to PERA. Refunds do not include interest or employer contributions since this income is used to fund other benefits.

If the member has five or more years of service, he or she may leave the money in the account and, without further payment, apply for a benefit when reaching the eligible age for retirement.

Retirement

PERA benefits are calculated as a percentage of Highest Average Salary (HAS). This is one-twelfth of the average of the three highest annual salaries earned during calendar year periods on which PERA contributions were paid. A 15 percent limitation applies to annual salary increases used in the calculation.

Service retirement benefits are calculated at 2.5 percent of HAS for years of service through 20 years, and 1.25 percent of HAS for each year of service between 20 and 40 years. PERA's maximum benefit is 75 percent of HAS.

Service retirement benefits are available to members at any age with 35 years of service, age 55 with at least 30 years of service, age 60 with at least 20 years of service or at age 65 with at least 5 years of service.

A reduced service retirement benefit is calculated the same as a service retirement benefit, then decreased by 0.333 percent for each month prior to the first eligible service retirement date. This reduction equals 4 percent per year. A member is eligible to receive a reduced service retirement benefit as early as age 55 with 20 years of PERA service credit, or at age 60 with as few as 5 years of service credit.

Benefits for State Troopers and members of the Judicial Division differ slightly.

Disability Retirement

Members with five or more years of earned service credit may qualify for disability retirement if determined to be permanently disabled. The disability retirement benefit is a percentage of HAS, based on actual service credit and projected service credit to age 65 or 20 years of service, whichever is less. Many disabled members receive 50 percent of their HAS.

Survivor Benefits

If a member dies before retirement with at least one year of PERA service credit, his or her eligible, unmarried children will receive monthly survivor benefits. Children are eligible if under age 18 or, if enrolled full-time in an accredited institute of higher education, until they reach age 23.

If there are no eligible children, or after benefits to children have ceased, the member's surviving spouse receives a monthly benefit at age 60 if the member had less than 10 years of service credit, or immediately if the member had more than 10 years of service at the time of death. If there is no eligible spouse, financially dependent parents will receive the survivor benefit.

If the member's death was service-incurred, the service credit minimum does not apply. If there are no eligible survivors, the named beneficiary, or estate if no beneficiary was named, will receive a single payment of any remaining contributions.

Financial Section

Public Employees' Retirement Association of Colorado

Auditor's Report

ARTHUR ANDERSEN & CO.

DENVER, COLORADO

Report of Independent Public Accountants

To the Participants and Board of Trustees of
the Public Employees' Retirement Association of Colorado
and the Legislative Audit Committee of the State of Colorado:

We have audited the combined statements of net assets available for benefits and of accumulated plan benefits of the Public Employees' Retirement Association of Colorado (a public association of the State of Colorado) as of December 31, 1988 and 1987, and the related combined statements of changes in net assets available for benefits and of changes in accumulated plan benefits for the years then ended. These financial statements are the responsibility of the Association's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets and accumulated plan benefits of the Public Employees' Retirement Association of Colorado as of December 31, 1988 and 1987, and the changes in its net assets and accumulated plan benefits for the years then ended in conformity with generally accepted accounting principles.

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. Schedules I, II, III and IV are presented for purposes of additional analysis and are not a required part of the basic financial statements. This information has been subjected to the auditing procedures applied in our audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Arthur Andersen & Co.

Denver, Colorado,
May 25, 1989.

Combined Statements of Net Assets Available for Benefits

As of December 31, 1988 and 1987

(In Thousands of Dollars)

	1988	1987
ASSETS		
Investments, at fair market value:		
U.S. Government obligations	$1,688,322	$2,015,775
Domestic corporate bonds	994,233	445,928
Domestic stocks	2,453,934	2,984,001
International stocks	1,035,294	—
Guaranteed notes	303,472	139,399
Mortgages	616,125	636,365
Real estate	418,975	347,929
Municipal bonds	23,462	22,866
Total investments	7,533,817	6,592,263
Receivables:		
Employers	23,150	15,482
Members	15,059	11,123
Interest and dividends	72,678	59,556
Other	14,779	5,061
Total receivables	125,666	91,222
Cash and short-term investments	408,554	405,561
Property and equipment, at cost, net of accumulated depreciation of $2,676 and $2,492, respectively	7,568	4,841
Total assets	8,075,605	7,093,887
LIABILITIES AND RESERVES		
Refunds payable and other	40,209	22,235
Reserves:		
Insurance dividend reserve	13,891	12,228
Health care fund	37,052	32,517
Total reserves	50,943	44,745
Total liabilities and reserves	91,152	66,980
Commitments and contingencies (Note 5)		
Net assets available for benefits	$7,984,453	$7,026,907

The accompanying notes to combined financial statements are an integral part of these statements.

Combined Statements of Changes in Net Assets Available for Benefits

For the Years Ended December 31, 1988 and 1987

(In Thousands of Dollars)

	1988	1987
Investment Income:		
Realized gains on investments	$ 119,082	$ 172,952
Interest	367,299	306,604
Dividends	110,381	103,026
Unrealized appreciation (depreciation) in fair market value of investments	192,061	(422,073)
Real estate income, net	16,132	9,386
Foreign exchange transaction gains	19,897	—
Other	—	6,717
Total investment income	824,852	176,612
Contributions:		
Employers	298,217	285,101
Members	206,432	198,543
Total contributions	504,649	483,644
Transfers:		
Benefits paid to retirees	(286,261)	(247,963)
Benefits paid to survivors	(9,924)	(9,431)
Benefits paid to health care participants	(21,282)	(16,841)
Refunds of contributions	(29,655)	(27,704)
Other, net	(10,072)	3,501
Total transfers	(357,194)	(298,438)
Administrative expenses	(8,563)	(8,654)
Net increase credited to insurance dividend reserve net of administrative fees	(1,663)	(470)
Net increase credited to reserve for health care fund	(4,535)	(8,016)
Net increase	957,546	344,678
Net assets available for benefits:		
Beginning of year	7,026,907	6,682,229
End of year	$7,984,453	$7,026,907

The accompanying notes to combined financial statements are an integral part of these statements.

Combined Statements of Accumulated Plan Benefits

As of December 31, 1988 and 1987
(In Thousands of Dollars)

	1988	1987
Actuarial present value of accumulated plan benefits:		
Vested benefits		
Benefit recipients	$3,038,575	$2,692,772
Other members	3,058,223	2,271,958
Total vested benefits	6,096,798	4,964,730
Non-vested benefits	587,316	522,625
Total actuarial present value of accumulated plan benefits	$6,684,114	$5,487,355

The accompanying notes to combined financial statements are an integral part of these statements.

Combined Statements of Changes in Accumulated Plan Benefits

For the Years Ended December 31, 1988 and 1987
(In Thousands of Dollars)

	1988	1987
Actuarial present value of accumulated plan benefits at beginning of year	$5,487,355	$4,970,008
Increase (decrease) during the year attributable to:		
Benefits accumulated and interest amortization	1,492,944	630,741
Change in plan provisions resulting from legislation	—	144,000
Benefits paid	(296,185)	(257,394)
Actuarial present value of accumulated plan benefits at end of year	$6,684,114	$5,487,355

The accompanying notes to combined financial statements are an integral part of these statements.

Notes to Combined Financial Statements

December 31, 1988 and 1987

(1) GENERAL DESCRIPTION OF PLAN

Organization

The Public Employees' Retirement Association of Colorado (the "Association") was established under Title 24, Article 51, Section 102 of the Colorado Revised Statutes, as amended. It was created in 1931 as a public association for the purpose of providing present and future retirement, disability or survivor benefits for persons who are employed by public employers (most of whom do not participate under Social Security) located in the State of Colorado and affiliated with the Association. This is accomplished through its operations as a cost-sharing, multiple-employer defined benefit pension plan (the "Plan"). Responsibility for the organization and administration of the Plan is vested in the Public Employees' Retirement Association Board of Trustees (the "Board"). The State Division Trust Fund was established in 1931, the School and Municipal Division Trust Funds in 1944 and the Judicial Division Trust Fund in 1949.

The number of participating public employers for the four divisions are as follows:

	As of December 31	
	1988	**1987**
State	77	77
School	198	198
Municipal	53	50
Judicial	6	6
Total employers	334	331

The participants of the Association consisted of the following as of December 31, 1988 and 1987:

	State	School	Municipal	Judicial	Combined Total 1988	Combined Total 1987
Retirees and beneficiaries currently receiving benefits, and terminated members entitled to benefits but not yet receiving them	15,146	16,410	1,619	173	33,348	32,210
Members						
Vested	21,504	35,115	3,564	170	60,353	59,404
Non-vested	16,069	23,128	3,442	72	42,711	41,404
Totals	52,719	74,653	8,625	415	136,412	133,018

Reporting Entity

The combined financial statements of the Association include all funds over which the Board has the ability to exercise oversight responsibility. This oversight responsibility includes designation of management, the ability to significantly influence operations and accountability for fiscal matters.

By law, the Association is not an agency of state government, nor is it subject to administrative direction by any department, commission, board, bureau or agency of the state. Accordingly, the Association's financial statements are not included in the financial statements of any other organization.

Contributions and Members' Accounts

Employer and member contributions are defined by state statute based upon actuarial valuations performed annually, using the methods prescribed by National Council on Governmental Accounting Statement No. 1. Members are required to contribute 8 percent of their annual salary to the Association, except for State Patrol Troopers ("State Troopers"), who contribute 9 percent.

Contributions are tax-deferred to the members for federal and state income tax purposes effective July 1, 1984, and January 1, 1987, respectively. Prior to those dates, contributions were made on an after-tax basis. These contributions are credited directly to their "member contribution" accounts. Members' contributions are fully refundable, without interest, upon request at termination of employment from Association-affiliated employers. If members have at least five years of credited service, they are eligible to receive a future monthly retirement benefit. Any refund of contributions waives all future rights to any benefits. However, eligible members with one or more years of credited service who previously received a refund of their contributions may reinstate withdrawn service through lump-sum or installment payments. Any member of the Association who has non-covered public service time may purchase credit for that service through lump-sum or installment payments to receive additional credited service, which will increase their future retirement benefit.

The Association's funding policy also requires contributions by employers. Contributions during 1987 and 1988 were as follows:

		Contributions as a Percent of Members' Salaries			
		January 1 Through June 30		**July 1 Through December 31**	
Division	**Membership**	**1987**	**1988**	**1987**	**1988**
State	All members except State Troopers	12.2%	10.2%	10.2%	12.2%
	State Troopers	13.2	11.2	11.2	13.2
School	All members	12.5	11.5	11.5	12.5
Municipal	All members	10.2	10.2	10.2	10.2
Judicial	All members	15.0	13.0	13.0	15.0

These contributions are credited to the member's division for the purpose of creating actuarial reserves so each member's benefits will be fully provided for upon retirement.

Benefits

Members are eligible for service retirement benefits upon reaching (a) age 65 with five or more years of credited service, (b) age 60 with 20 or more years of credited service, (c) age 55 with 30 or more years of service or by (d) earning 35 or more years of credited service. In addition, State Troopers are eligible for retirement benefits upon reaching (a) age 55 with 20 or more years of credited service or by (b) earning 30 or more years of credited service. Such benefits are equivalent to 2.5 percent of their Highest Average Salary ("HAS") during their highest paid three years of service (defined as three periods of 12 consecutive months) prior to retirement for each year of service up to 20 years, and 1.25 percent for each year over 20 years. The maximum benefit available is 75 percent of their HAS. The Plan also permits reduced service retirement at age 55 (age 50 for State Troopers) with 20 or more years of credited service, or at age 60 with five or more years of credited service. Members may elect to receive their benefits in the form of single or joint life payments.

The Plan also provides for disability retirement and survivor benefits. Members who become permanently disabled with at least five years of earned service since the beginning of the most recent period of membership can receive disability benefits that are based on service credit projected to 20 years or age 65, whichever is first. The HAS calculation is the same as that used for service retirement.

If an active member dies after accumulating at least one year of service credit, a benefit based upon the accumulated credited service as of the time of death and the number and relationship of family survivors is payable to such survivors.

Termination of the Association

The law provides that should the Association be terminated or partially terminated for any reason, the rights of all members and former members to all benefits accrued to the date of such termination, to the extent then funded, shall become nonforfeitable.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting and Presentation

The accompanying financial statements are prepared using the accrual basis of accounting, in accordance with generally accepted accounting principles applicable to governmental accounting for a pension trust fund. The various funds have been presented on a combined basis, with all interfund balances and transactions eliminated in the combined financial statements.

Fund Accounting

The financial activities of the Association are recorded in separate divisions (State, School, Municipal and Judicial) established by statute with investments owned by the divisions recorded in the Combined Investment Fund. A Cost of Living Stabilization Fund, Health Care Fund, Common Operating Fund and Insurance Dividend Reserve are also maintained. Each division maintains separate accounts and all actuarial determinations are made on the basis of each division's separate actuarial information.

The Cost of Living Stabilization Fund (the "CLSF") was created on May1, 1980, through the enactment of Senate Bill 62 to offset inflation by providing increased benefits payable to retirees of the Association. The CLSF is funded by payments from employers equal to 2 percent of member salaries. Such payments are collected by each division on behalf of the CLSF. The increased benefits to retirees are paid directly by each division to the retirees and then reimbursed by transfers from the CLSF. The net assets of the CLSF as of December 31, 1988 and 1987, amounting to $43,290,000 and $32,232,000, respectively, are included in net assets available for benefits presented in the Combined Statements of Net Assets Available for Benefits. Conversely, the computation of the total actuarial present value of accumulated plan benefits included in the Combined Statements of Accumulated Plan Benefits and Combined Statements of Changes in Accumulated Plan Benefits does not include a provision for cost of living increases from the CLSF, in accordance with Statement of Financial Accounting Standards No. 35.

The Health Care Fund (the "HCF") was created on July 1, 1985, through the enactment of Senate Bill 67 to provide group health insurance to Association retirees. The HCF is funded by payments from employers equal to 0.8 percent of member salaries. Such payments are collected by each division on behalf of the HCF. Beginning July 1, 1986, the HCF began contributing towards enrolled retirees and other benefit recipients' health care premiums by making payments directly to insurance companies and Health Maintenance Organizations selected for this program.

The Common Operating Fund (the "COF") accounts for all administrative activities common to the divisions. Operating assets and liabilities which are held for the benefit of all divisions are also recorded in the COF. The expenses incurred by the Association are allocated from the COF to the various divisions on the basis of the relationship of the number of members in the division to the total membership in the Association. In 1988, the net assets available for benefits have been allocated to the division funds.

The Insurance Dividend Reserve (the "IDR") is an accumulation of dividends received from an insurance company as a return of the premiums paid, adjusted for actual historical experience by members. The IDR is used to purchase paid-up life insurance for eligible members when they retire and additional paid-up insurance for insured members.

Investments

Plan investments (excluding the guaranteed insurance contracts and short-term investments) are presented at fair market value. Securities, which are traded on a national securities exchange, are valued at the last reported sales price during the year. For other investments which do not have an established market, estimated fair values are presented. Corporate bonds are valued based on yields currently available on comparable securities of issuers with similar credit ratings. Mortgages are valued on the basis of their future principal and interest payments discounted at prevailing interest rates for similar instruments. The fair market value of real estate investments are based upon estimates prepared by independent appraisers.

In addition, the guaranteed insurance contracts (Notes 3 and 4) are valued at contract value, representing principal plus accrued interest at the stated contract rate. Short-term investments are carried at cost, which approximates fair market value.

The change in the market value of investments held as of year-end is reflected in the Combined Statement of Changes in Net Assets Available for Benefits as unrealized appreciation or depreciation.

Each division, the HCF, the CLSF and the IDR owns a percentage of the Combined Investment Fund ("CIF") which is used to maintain the investment portfolio. Under this system, each fund's ownership percentages in the CIF are adjusted upward or downward based upon the fund's activity. Results of investment performance and the value of the CIF are allocated among the funds based upon each fund's ownership as a percentage of the total CIF. As of December 31, 1988 and 1987, the ownership percentages of each fund are as follows:

	Ownership Percentage as of December 31	
	1988	**1987**
State	38.69	39.18
School	54.36	54.08
Municipal	5.17	5.13
Judicial	.55	.56
HCF	.60	.52
CLSF	.49	.40
IDR	.14	.13
Total	100.00	100.00

Actuarial Valuation

Accumulated plan benefits are those future periodic payments, plus lump-sum distributions, which are attributable under the Plan's provisions to the service members have rendered. Accumulated plan benefits include benefits expected to be paid to (a) retired or terminated members or their beneficiaries, (b) beneficiaries of members who have died and (c) present members or their beneficiaries.

The actuarial present value of accumulated plan benefits included in the Combined Statements of Accumulated Plan Benefits and Combined Statements of Changes in Accumulated Plan Benefits is presented in accordance with Statement of Financial Accounting Standards No. 35.

The actuarial present value of accumulated plan benefits was determined by the firm of Gabriel, Roeder, Smith and Company on the basis of the "entry age normal" cost method. The resulting amount adjusts accumulated plan benefits to reflect the time value of money (through discounts for interest) and the probability of payment (by means of decrements for death, disability, withdrawal or retirement) between the valuation date and the expected date of payment. The following summarizes the significant actuarial assumptions underlying the actuarial computations as of December 31, 1988 and 1987.

	Valuation as of December 31	
Actuarial Assumptions	**1988**	**1987**
Investment return	7.5% compounded annually	7.5% compounded annually
Average retirement age:		
Men	Ranging from 60 to 65	Ranging from 60 to 65
Women	Ranging from 60 to 65	Ranging from 60 to 65
Life expectancy	1971 Group Annuity Male and Female Mortality Tables projected to 1984	1971 Group Annuity Male and Female Mortality Tables projected to 1984

These actuarial assumptions are based on the presumption that the Association will continue. If the Plan were to terminate, different actuarial assumptions and other factors might be applicable in determining the actuarial present value of accumulated plan benefits.

Unfunded Actuarial Accrued Liabilities

The actuarial calculation compares the present value of future benefits less the Association's assets. The accompanying financial statements reflect plan assets on a fair market value basis. If the plan assets had been presented on a historical cost basis, and future salary increases were considered, the unfunded actuarial accrued liabilities for the various divisions as of December 31, 1988 and 1987, would be as follows:

	1988	**1987**
State	$ 551,548,442	$ 593,228,108
School	500,741,500	542,935,499
Municipal	43,308,761	44,957,260
Judicial	6,547,148	6,206,946
Total	$1,102,145,851	$1,187,327,813

Contributions were made to the divisions in accordance with actuarially calculated contribution requirements determined through actuarial valuations performed as of December 31, 1988 and 1987. The following summarizes the contributions made during 1988 and 1987:

	1988	**1987**
Contributions made by:		
Employers	$224,726,000	$216,089,000
Members	206,432,000	198,543,000
Total contributions	$431,158,000	$414,632,000
Contributions consisted of:		
Normal cost	$327,533,000	$330,070,000
Amortization of the unfunded actuarial accrued liabilities	103,625,000	84,562,000
Total contributions	$431,158,000	$414,632,000
Amortization periods computed to fund unfunded actuarial accrued liabilities	20 to 32 years	22 to 35 years

Property and Equipment

Property and equipment are carried at cost less accumulated depreciation. Costs of major additions and improvements are capitalized. Expenditures for maintenance and repairs are charged to operations as incurred. Depreciation is computed on the straight-line method using estimated lives ranging from three to 50 years.

Federal Income Tax Status

During the years ended December 31, 1988 and 1987, the Association continued to receive from the Internal Revenue Service a favorable determination for exemption from federal income taxes.

(3) GUARANTEED NOTE

In 1980, the Association acquired a guaranteed note from the Aetna Life and Casualty Insurance Company for $50,000,000. The note earns interest annually at a rate of 14.3 percent which is guaranteed through May 1989. During 1988, the Association acquired five guaranteed notes from various financial institutions for $135,000,000 earning interest at rates ranging from 8.21 percent to 9 percent, guaranteed through 1993.

(4) INVESTMENTS

Investment Authority

By statute, the Board has complete control and authority to invest the funds of the Association. The law allows any kind of investments with the following limitations: (a) The aggregate amount of monies invested in corporate stocks or corporate bonds, notes or debentures which are convertible into stock or in investment trust shares shall not exceed 50 percent of the then book value of the fund; and (b) no investment of the fund in common or preferred stock, or both, of any single corporation shall be of an amount which exceeds 5 percent of the then book value of the fund, nor shall the fund acquire more than 12 percent of the outstanding stock or bonds of any single corporation.

Cash and Short-Term Investments

The following table presents cash and short-term investments held by the Association at December 31, 1988:

	(In Thousands of Dollars) Carrying Value	Bank Balance
Deposits with banks (fully insured by federal depository insurance)	$ 21,103	$ 32,966
Bankers acceptance (held by the Association's agent in the Association's name)	38,710	38,710
Commercial paper (held by the Association's agent in the Association's name)	309,156	309,156
Money market funds held at bank (fully collateralized by the underlying securities, held by the Association's agent in the Association's name)	39,585	39,585
Total cash and short-term investments	$408,554	$420,417

The differences between carrying amounts and bank balances are due to checks outstanding and deposits not yet processed by the bank.

Other Investments

The following table presents the remaining investments held by the Association at December 31, 1988, categorized to give an indication of the level of risk assumed by the Association at year-end. The categories are:

(1) Insured or registered, or securities which are held by the Association in the Association's name or its agent's name.

(2) Uninsured and unregistered, with securities held by the counterparty's trust department or agent in the Association's name.

(3) Uninsured and unregistered, with the securities held by the counterparty, or by its trust department or agent but not in the Association's name.

Investments in real estate cannot be categorized because securities are not used as evidence of the investment.

	Category 1	Category 2	Category 3	(In Thousands of Dollars) Amortized Cost	Market Value
U.S. Government obligations	$1,773,007	$ —	$ —	$1,773,007	$1,688,322
Domestic corporate bonds	1,009,145	—	—	1,009,145	994,233
Domestic stocks	2,274,623	—	—	2,274,623	2,453,934
International stocks	946,947	—	—	946,947	1,035,294
Guaranteed notes	303,472	—	—	303,472	303,472
Mortgages	628,908	—	—	628,908	616,125
Municipal bonds	25,000	—	—	25,000	23,462
Subtotal	$6,961,102	$ —	$ —	6,961,102	7,114,842
Non-categorized real estate				424,473	418,975
Total				$7,385,575	$7,533,817

Securities Lending

The Association enters into various short-term arrangements whereby investments are loaned to various brokers. The lending arrangements are collateralized by cash, letters of credit and marketable securities. These agreements provide for the return of the investments and for a payment of: (a) A fee when the collateral is marketable securities or letters of credit, or (b) interest earned when the collateral is cash on deposit. The securities on loan to the broker are presented in the Combined Statements of Net Assets Available for Benefits at fair market value. As of December 31, 1988, the Association had lending arrangements outstanding with a total market value of $870,268,000 and a total collateral value of $888,196,000, or 102 percent of the total market value outstanding.

(5) COMMITMENTS AND CONTINGENCIES

At December 31, 1988, the Association was committed to the future purchase of investments at an aggregate cost of approximately $316,587,000. In addition, various legal proceedings are pending against the Association which are the result of the normal activities of the Association. Based on the facts presently available, the Association, with advice from legal counsel, has concluded that the aggregate liability, if any, of the Association resulting therefrom will not have an adverse impact on the financial condition of the Association.

(6) FUNDING STATUS AND PROGRESS

The amount shown below as the "pension benefit obligation" is a standardized disclosure measure of the present value of pension benefits adjusted for the effects of projected salary increases and estimated to be payable in the future as a result of member service-to-date. The measure is the actuarial present value of credited projected benefits and is intended to (a) help users assess the Plan's funding status on a going concern basis, (b) assess progress being made in accumulating sufficient assets to pay benefits when due and (c) allow for comparisons among public employee retirement plans. The measure is independent of the actuarial funding method used to determine contributions to the Plan.

The pension benefit obligation was determined as part of an actuarial valuation of the Plan as of December 31, 1988 and 1987. Significant actuarial assumptions used in determining the pension benefit obligation include (a) a rate of return on the investment of present and future assets of 7.5 percent per year compounded annually; (b) projected salary increases of 5.5 percent per year compounded annually, attributable to inflation; (c) additional projected salary increases ranging from 0 percent to 7.4 percent per year depending on age, attributable to seniority/merit; and (d) projected benefit increases ranging from 1.5 percent to 3 percent per year after retirement.

At December 31, 1988 and 1987, assets in excess of (less than) pension benefit obligation, as determined in accordance with generally accepted accounting principles prescribed by Statement No. 5 of the Governmental Accounting Standards Board, were as follows:

	(In Thousands of Dollars)					
	State	School	Municipal	Judicial	1988 Total	1987 Total
Pension benefit obligation:						
Retirees and beneficiaries currently receiving benefits	$1,461,380	$1,415,984	$137,996	$23,215	$3,038,575	$2,692,772
Terminated members not yet receiving benefits	19,282	36,731	1,531	236	57,780	54,087
Current members:						
Accumulated member contributions including allocated investment income	526,710	731,966	77,398	6,508	1,342,582	1,225,840
Employer financed — vested	1,190,519	1,952,444	154,987	15,509	3,313,459	3,135,033
Employer financed — non-vested	47,035	54,805	8,852	840	111,532	102,722
Total pension benefit obligation	3,244,926	4,191,930	380,764	46,308	7,863,928	7,210,454
Net assets available for benefits, at fair market value (net of CLSF net assets) including ratable allocation of COF net assets	3,116,290	4,374,779	405,608	44,486	7,941,163	6,994,675
Assets in excess of (or less than) pension benefit obligation	$ (128,636)	$ 182,849	$ 24,844	$ (1,822)	$ (77,235)	$ (215,779)

Schedule I

Combining Statement of Net Assets Available For Benefits

December 31, 1988, With Comparative Combined Totals For 1987

(In Thousands of Dollars)

ASSETS	State Division Trust Fund	School Division Trust Fund
Investments, at fair market value:		
U.S. Government obligations	$ 653,064	$ 917,495
Domestic corporate bonds	384,582	540,302
Domestic stocks	949,212	1,333,557
International stocks	400,414	562,638
Guaranteed notes	117,387	164,917
Mortgages	238,324	334,824
Real estate	162,065	227,687
Municipal bonds	9,075	12,750
Total investments	2,914,123	4,094,170
Receivables:		
Employers	10,117	11,377
Members	6,464	7,343
Interest and dividends	28,113	39,496
Other	5,009	7,028
Total receivables	49,703	65,244
Cash and short-term investments	158,024	222,009
Property and equipment, at cost, net of accumulated depreciation of $2,676 and $2,492, respectively	—	—
Total assets	3,121,850	4,381,423
LIABILITIES AND RESERVE		
Refunds payable and other	5,560	6,644
Reserves:		
Insurance dividend reserve	—	—
Health care fund	—	—
Total reserves	—	—
Total liabilities and reserves	5,560	6,644
Commitments and contingencies (Note 5)		
Net assets available for benefits	$3,116,290	$4,374,779

The assets and liabilities of the Combined Investment Fund have been allocated to the trust funds on a pro rata basis.

Municipal Division Trust Fund	Judicial Division Trust Fund	Cost of Living Stabilization Fund	Health Care Fund	Common Operating Fund	Insurance Dividend Reserve	Combined Total 1988	Combined Total 1987
$ 87,339	$ 9,264	$ 8,206	$ 10,157	$ —	$ 2,797	$1,688,322	$2,015,775
51,433	5,456	4,832	5,981	—	1,647	994,233	445,928
126,945	13,465	11,927	14,763	—	4,065	2,453,934	2,984,001
53,551	5,680	5,043	6,243	—	1,725	1,035,294	—
15,699	1,665	1,475	1,826	—	503	303,472	139,399
31,873	3,381	2,995	3,707	—	1,021	616,125	636,365
21,674	2,299	2,036	2,520	—	694	418,975	347,929
1,214	129	114	141	—	39	23,462	22,866
389,728	41,339	36,628	45,338	—	12,491	7,533,817	6,592,263
1,491	165	—	—	—	—	23,150	15,482
1,165	87	—	—	—	—	15,059	11,123
3,760	399	353	437	—	120	72,678	59,556
671	335	63	272	436	965	14,779	5,061
7,087	986	416	709	436	1,085	125,666	91,222
21,134	2,242	1,986	2,458	24	677	408,554	405,561
—	—	—	—	7,568	—	7,568	4,841
417,949	44,567	39,030	48,505	8,028	14,253	8,075,605	7,093,887
12,341	81	(4,260)	11,453	8,028	362	40,209	22,235
—	—	—	—	—	13,891	13,891	12,228
—	—	—	37,052	—	—	37,052	32,517
—	—	—	37,052	—	13,891	50,943	44,745
12,341	81	(4,260)	48,505	8,028	14,253	91,152	66,980
$ 405,608	$ 44,486	$ 43,290	$ —	$ —	$ —	$7,984,453	$7,026,907

Combining Statement of Changes in Net Assets Available for Benefits

Year Ended December 31, 1988, With Comparative Combined Totals for 1987

(In Thousands of Dollars)

	State Division Trust Fund	School Division Trust Fund
Investment Income:		
Realized gains on investments	$ 46,374	$ 64,565
Interest	143,037	199,145
Dividends	42,618	59,336
Unrealized appreciation (depreciation) in fair market value of investments	75,101	103,975
Real estate income, net	6,282	8,747
Foreign exchange transaction gains	7,748	10,788
Other	—	—
Total investment income	321,160	446,556
Contributions:		
Employers	86,733	123,744
Members	82,706	108,280
Total contributions	169,439	232,024
Transfers:		
Benefits paid to retirees	(138,861)	(133,197)
Benefits paid to survivors	(5,040)	(3,938)
Benefits paid to health care participants	—	—
Refunds of contributions	(14,679)	(11,575)
Other, net	23,866	22,457
Total transfers	(134,714)	(126,253)
Administrative expenses	(3,035)	(4,355)
Net increase credited to insurance dividend reserve net of administrative fees	—	—
Net increase credited to reserve for health care fund	—	—
Net increase	352,850	547,972
Net assets available for benefits:		
Beginning of year	2,763,440	3,826,807
End of year	$3,116,290	$4,374,779

The investment income of the Combined Investment Fund has been allocated to the trust funds on a pro rata basis.

Municipal Division Trust Fund	Judicial Division Trust Fund	Cost of Living Stabilization Fund	Health Care Fund	Common Operating Fund	Insurance Dividend Reserve	Combined Total 1988	Combined Total 1987
$ 6,154	$ 658	$ 516	$ 650	$ —	$ 165	$ 119,082	$ 172,952
18,982	2,030	1,591	2,006	—	508	367,299	306,604
5,655	605	474	598	—	1,095	110,381	103,026
9,909	1,067	697	1,053	—	259	192,061	(422,073)
834	89	70	88	—	22	16,132	9,386
1,028	110	86	109	—	28	19,897	—
—	—	—	—	—	—	—	6,717
42,562	4,559	3,434	4,504	—	2,077	824,852	176,612
12,848	1,401	52,161	21,330	—	—	298,217	285,101
14,488	958	—	—	—	—	206,432	198,543
27,336	2,359	52,161	21,330	—	—	504,649	483,644
(11,957)	(2,246)	—	—	—	—	(286,261)	(247,963)
(746)	(200)	—	—	—	—	(9,924)	(9,431)
—	—	—	(21,282)	—	—	(21,282)	(16,841)
(3,358)	(43)	—	—	—	—	(29,655)	(27,704)
(10,922)	370	(44,537)	—	(1,038)	(268)	(10,072)	(3,501)
(26,983)	(2,119)	(44,537)	(21,282)	(1,038)	(268)	(357,194)	(298,438)
(520)	(24)	—	(17)	(466)	(146)	(8,563)	(8,654)
—	—	—	—	—	(1,663)	(1,663)	(470)
—	—	—	(4,535)	—	—	(4,535)	(8,016)
42,395	4,775	11,058	—	(1,504)	—	957,546	344,678
363,213	39,711	32,232	—	1,504	—	7,026,907	6,682,229
$ 405,608	$ 44,486	$ 43,290	$ —	$ —	$ —	$7,984,453	$7,026,907

Schedule III

Combining Statement of Accumulated Plan Benefits

December 31, 1988, With Comparative Combined Totals for 1987

(In Thousands of Dollars)

	State Division Trust Fund
Actuarial present value of accumulated plan benefits:	
Vested benefits	
Benefit recipients	$1,461,380
Other members	1,206,799
Total vested benefits	2,668,179
Non-vested benefits	272,419
Total actuarial present value of accumulated plan benefits	$2,940,598

Schedule IV

Combining Statement of Changes in Accumulated Plan Benefits

Year Ended December 31, 1988, With Comparative Combined Totals for 1987

(In Thousands of Dollars)

	State Division Trust Fund
Actuarial present value of accumulated plan benefits at beginning of year	$2,429,113
Increase (decrease) during the year attributable to:	
Benefits accumulated and interest amortization, net of refunds	655,386
Change in plan provisions resulting from legislation	—
Benefits paid	(143,901)
Actuarial present value of accumulated plan benefits at end of year	$2,940,598

School Division Trust Fund	Municipal Division Trust Fund	Judicial Division Trust Fund	Combined Total 1988	Combined Total 1987
$1,415,984	$ 137,996	$ 23,215	$3,038,575	$2,692,772
1,729,521	107,970	13,933	3,058,223	2,271,958
3,145,505	245,966	37,148	6,096,798	4,964,730
265,612	44,604	4,681	587,316	522,625
$3,411,117	$ 290,570	$ 41,829	$6,684,114	$5,487,355

School Division Trust Fund	Municipal Division Trust Fund	Judicial Division Trust Fund	Combined Total 1987	Combined Total 1986
$2,761,458	$ 261,235	$ 35,549	$5,487,355	$4,970,008
786,794	42,038	8,726	1,492,944	630,741
—	—	—	—	144,000
(137,135)	(12,703)	(2,446)	(296,185)	(257,394)
$3,411,117	$ 290,570	$ 41,829	$6,684,114	$5,487,355

Schedule of Funding Progress*

Analysis of the dollar amounts of net assets available for benefits, pension benefit obligation and pension benefit obligation in excess of assets in isolation can be misleading. Expressing the net assets available for benefits as a percentage of the pension benefit obligation provides one indication of the Association's funding status on a going concern basis. Analysis of this percentage over time indicates whether the system is becoming financially stronger or weaker. Generally, the greater the percentage, the stronger the retirement system. Trends in pension benefit obligation in excess of assets and annual covered payroll are both affected by inflation. Expressing the assets in excess of inflation aids analysis of PERA's progress made in accumulating sufficient assets to pay benefits when due.

(In Millions of Dollars)

Fiscal Year	(1) Net Assets Available for Benefits**	(2) Pension Benefit Obligation	(3) Percentage Funded (1) ÷ (2)	(4) Pension Benefit Obligation In Excess of Assets (2) − (1)	(5) Annual Covered Payroll	(6) Pension Benefit Obligation in Excess of Assets as a Percentage of Covered Payroll (4) ÷ (5)
1986	$6,654	$6,224	106.91%	$(430)	$2,409	(17.85%)
1987	$6,995	$7,210	97.02%	$ 215	$2,531	8.49%
1988	$7,941	$7,864	100.98%	$ (77)	$2,643	(2.91%)

*The information for this schedule is for 1986, 1987 and 1988 only; previous years are unavailable.
**At market.

*Supporting Schedules for Financial Section**

**unaudited*

Schedule of Administrative Expenses

For the Years Ended December 31, 1988 and 1987

	1988	1987
Personnel services		
Salaries	$4,137,232	$3,959,147
Employee benefits	871,316	837,454
Total personnel services	5,008,548	4,796,601
Staff education		
Tuition assistance program	17,134	17,359
PERA required education	119,192	44,887
Other	1,177	—
Total staff education	137,503	62,246
Professional contracts		
Actuarial contracts	141,913	77,389
Audits	90,100	78,587
Medical exams	139,520	118,695
Investment counsel	157,607	278,951
Legal and legislative counsel	97,362	134,975
Other	206,237	353,778
Total professional contracts	832,739	1,042,375
Miscellaneous		
Equipment rental & service	256,069	157,882
Memberships	38,989	21,779
Publications & subscriptions	48,665	19,998
Travel and local expense	208,363	162,315
Board expense	56,500	60,699
Board fiduciary expense	84,883	353,829
Auto expense	10,377	7,770
Telephone	84,728	89,806
Postage	193,939	163,052
Insurance	260,662	192,531
Printing	240,622	240,435
Office supplies	167,641	90,579
Building rent, supplies & utilities	331,576	398,030
Other	44,658	65,769
Total miscellaneous	2,027,672	2,024,474
Total budgeted expense	8,006,462	7,925,696
Depreciation expense	465,627	462,266
Health care operating expense	17,082	343,057
Insurance dividend reserve expense	146,268	—
Total expense	8,635,439	8,731,019
Interfund transactions	(73,978)	(76,790)
Total administrative expense	8,561,461	8,654,229
Allocation of administrative expense		
State division	3,034,536	2,993,016
School division	4,354,733	4,317,609
Municipal division	519,548	515,797
Judicial division	23,667	22,484
Health care fund	17,082	343,057
Insurance dividend reserve	146,268	—
Common operating fund	465,627	462,266
Total allocation	$8,561,461	$8,654,229

Schedule of Cash Receipts and Disbursements

For the Years Ended December 31, 1988 and 1987
(In Thousands of Dollars)

	1988	1987
Cash balance at beginning of year	$ 7,550	$ 28,714
Add cash receipts:		
Contributions:		
Members	206,051	198,543
Employers	221,096	216,089
Cost of living stabilization fund	52,034	49,220
Health care fund	6,771	20,380
Investment income	633,039	587,912
Other receipts	2,495	2,020
Total cash receipts	$1,121,486	$1,074,164
Less cash disbursements:		
New investment purchases	$ 774,159	$ 801,336
Benefit payments	296,187	257,342
Refunds	29,653	28,801
Administrative expenses	7,934	7,849
Total cash disbursements	$1,107,933	$1,095,328
Cash balance at end of year	$ 21,103	$ 7,550

*Investments Section**

**unaudited*

PERA Investment Policy Summary

The function of the Public Employees' Retirement Association is to provide retirement or survivor benefits for its members. Thus, preservation of capital is of paramount importance.

The future investment performance of the fund directly affects its future financial strength. Earnings on portfolio assets in excess of the assumed actuarial rate of return (7.5 percent) reduce unfunded actuarial liabilities.

Investment Decisions

The fund is long-term in nature. The selection of investments is regulated by statutory limitations, investment time horizons, limits of acceptable risk and the objective of optimizing the total rate of return for the portfolio.

Approval of all purchases and sales of investments is vested by law in the PERA Board of Trustees. The Deputy Executive Director of Investments is authorized to execute transactions on behalf of the Board, as permitted under policy and procedure statements.

Investment decisions are made within the framework of the goal established for the rate of return, limits of acceptable risk and fund objectives. The goal is to optimize the return on portfolio assets as opposed to maximizing the rate of return. The optimal portfolio mix is one that carefully equates expected rate of return with expected risk of all investment categories used in the portfolio.

State law limits the amount of the fund to be invested in equity stock to 50 percent at book value. It also prohibits the investment of more than 5 percent of PERA assets at the then book value in any single company, and limits PERA to own no more than 12 percent of any single corporation's outstanding stocks or bonds.

No holding will be considered a "permanent" part of the portfolio. Any security can be sold at any time, whether to increase gains or decrease losses.

In making investment decisions, the Board will use the highest caliber advice and managers available, both internally and externally. This advice may include the internal investment staff, outside investment managers selected for both traditional and non-traditional asset classes and investment consultants selected by the Board for expertise in implementing and carrying out the investment process.

Asset Allocation

Implementation of a new strategic asset allocation policy began in 1988. The mix is composed of both traditional (cash, bonds, domestic equities, fixed income and mortgages) and non-traditional (real estate, guaranteed investment contracts, international equities, venture capital and leveraged buy-outs) assets.

The targeted strategic asset allocation provides the optimal mix of asset categories, which emphasizes diversification over the investment time horizon of the portfolio. In doing so, the characteristics of risk, expected return and their correlation to the various asset categories have been carefully projected.

Since the investment time horizon of the portfolio is long-term, and the portfolio is constructed to avoid the necessity of liquidating holdings to meet benefit payments, liquidity is not the first consideration. However, every reasonable effort will be made to provide protection for the portfolio in any future deteriorating market.

The Board recognizes that one investment can contain higher risk than another investment. Primary effort will be made to concentrate on reducing the risk of the portfolio through an optimal diversification. This, in turn, enhances total portfolio return. The Board also acknowledges that the use of non-traditional assets may result in individual holdings within asset categories which contain greater risk than individual holdings within traditional asset categories.

South Africa Policy

Divestment from companies which do business in South Africa will not be made solely because of those operations. PERA opposes divestment because it conflicts with a sound investment policy. When considering new investments which are equally as promising, companies doing business in South Africa will not be selected. PERA representatives continue to urge applicable companies in which it has a significant holding to implement or improve their compliance rating with the Statement of Principles for South Africa.

Colorado Investments

State law provides that preference shall be given to Colorado investments consistent with a sound investment policy. However, to provide optimal diversification by geographic location and asset class, and to maintain fiduciary responsibility, investments located within the State of Colorado will not exceed 20 percent of the combined portfolio at cost.

Within the 20 percent limitation, every effort will be made to diversify investments among the available asset classes - commercial real estate mortgages, common stocks, corporate debt, equity real estate, etc.

Review and Reporting

Generally accepted accounting principles (GAAP) will be followed in accounting for the portfolio, however, GAAP should not restrict investment decisions. The trade date accounting method will be used to account for gains and losses. Securities recorded at original cost, adjusted cost and market value will be reported to the Board. The accounting firm conducting the annual audit will be consulted when questions concerning procedures arise.

An annual evaluation will be conducted by a performance evaluation service from the investment industry. In addition, the annual external audit and the annual actuarial evaluations will be reviewed in conjunction with the evaluations of investment performance. All evaluations will be related to the Association's stated goals. Because these goals are long-term, cumulative performance results are considered more important than performance in any one year.

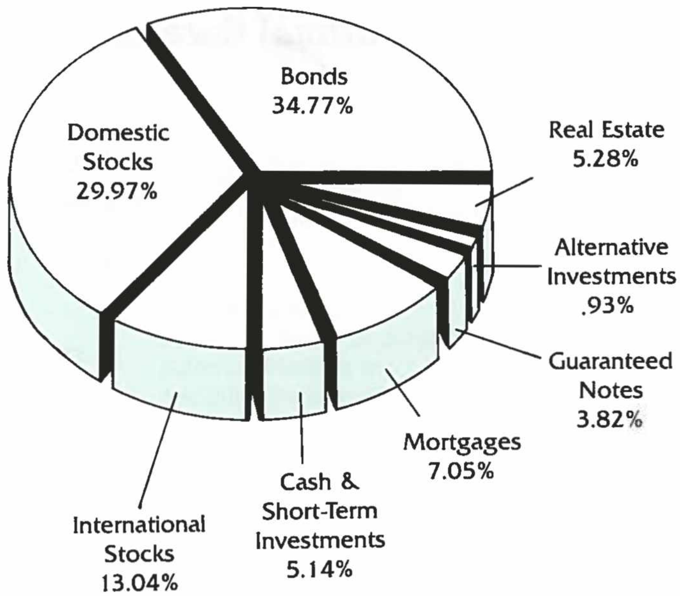
Investment Summary

(In Thousands of Dollars)

Type of Investment	January 1, 1988 Amortized Cost	January 1, 1988 Market Value	December 31, 1988 Amortized Cost	December 31, 1988 Market Value	% Total Market
Cash & short-term investments	$ 405,561	$ 405,561	$ 408,554	$ 408,554	5.14%
Bonds					
U.S. Government obligations	2,063,035	2,015,775	1,805,110	1,688,322	21.26%
Municipal bonds	25,000	22,866	25,000	23,462	.30%
Domestic corporate bonds	300,769	295,792	979,953	994,233	12.52%
Private placements	152,061	150,136	57,468	55,846	.70%
Total bonds	2,540,865	2,484,569	2,867,531	2,761,863	34.77%
Domestic stocks	2,959,404	2,970,054	2,208,503	2,380,289	29.97%
International stocks	—	—	913,989	1,035,294	13.04%
Real estate	350,775	347,929	424,472	418,975	5.28%
Mortgages	631,960	636,365	628,907	560,279	7.05%
Guaranteed notes	139,399	139,399	303,472	303,472	3.82%
Alternative investments					
Venture capital	13,714	13,947	18,688	19,676	.25%
Leveraged buy-out fund	—	—	47,513	53,969	.68%
Total alternative investments	13,714	13,947	62,201	73,645	.93%
Total investments	$7,041,678	$6,997,824	$7,821,629	$7,942,371	100.00%

Investments

(At Market)
As of December 31, 1988



Fund Performance Evaluation

The Association retains R.V. Kuhns & Associates to evaluate the PERA fund performance. In their analysis, R.V. Kuhns includes all investments within the portfolio, including cash and accrued income. They also make the calculations using post-closing amounts for annual rates of return.

Asset Allocation

As of December 31, 1988, the fund was well diversified. PERA's asset allocation mix is similar to that of the Wilshire Median Balanced Fund. The mix was also in line with the Association's new strategic asset allocation policy. Over the last five years, the fund has averaged 42.6 percent in Equities (domestic and international), 38.2 percent in Bonds, 13.9 percent in Other Assets and 5.3 percent in Cash.

During 1988, assets (at market value) were allocated within the following ranges: Equities: 40.1 to 43.2 percent, Bonds, 31.2 to 35.7 percent, Other Assets - 15.8 to 21.5 percent and Cash and Equivalents - 4.2 to 10.1 percent.

Total Portfolio Results

For the year ended December 31, 1988, the total fund had a positive rate of return of 11.8 percent. This return outperformed the Wilshire Median Balanced Fund's return in 1988 of 11 percent, placing the Association in the 38th percentile compared to similar funds.

The Association's actuarial consultants have included in their calculation assumptions the requirement that the fund must realize an average rate of return of 7.5 percent yearly to pay promised benefits. The fund's average rate of return for the last 5 and 10 years is well above this requirement. The Association has averaged an 11.1 percent rate of return over the last 10 years.

Equities

The 1988 rate of return for the domestic equity portfolio was 14.1 percent. In two of the last five years, the average return on the Association's domestic portfolio has performed at or above the Standard and Poors 500 Index, a measure of stock performance.

The PERA fund is restricted by law from investing more than 50 percent of its assets in the stock market at book value.

As a result of a new strategic asset allocation policy approved in 1987, the funding of more than $1 billion for international equity purchases began on January 19, 1988. Six managers were chosen by the Board of Trustees to manage these funds; all were fully funded by mid-1988. The benchmark by which these equities are measured is the Europe-Asia-Far East (EAFE) Index. The composite performance results for international equities from January 19 to December 31, 1988, was 22.3 percent.

Bonds

PERA bond performance is compared to the Shearson Lehman Bond Index. For 1988, the Association achieved an 8.3 percent rate of return, compared to the Shearson return of 7.6 percent. In three of the past five years, PERA bonds have outperformed the Shearson Index. This was, in large part, due to changing various maturity schedules and improving the quality of the Association's bond holdings during this time period.

Real Estate

The Association's real estate portfolio performed at or above the Russell Real Estate Index in two of the last five years. In 1988, the Association continued to diversify its real estate portfolio by looking more closely at acquisitions in the national real estate market.

Annual Rate of Return

	1984	1985	1986	1987	1988	Annualized
PERA portfolio:	10.4%	21.5%	13.8%	2.9%	11.8%	11.9%
PERA fund (excluding real estate)	9.0%	22.3%	14.4%	3.9%	11.1%	12.0%
Wilshire Median Fund	9.0%	24.9%	15.8%	4.0%	11.0%	13.2%
Equities:						
PERA	6.3%	29.8%	15.6%	6.9%	14.1%	14.2%
Standard & Poors 500	6.3%	31.7%	18.5%	5.2%	16.8%	15.3%
Bonds:						
PERA	13.2%	20.9%	16.8%	2.7%	8.3%	12.2%
Shearson Lehman Bond Index	15.0%	21.3%	15.6%	2.2%	7.6%	12.2%

Average Percent of Asset Allocation

	1984	1985	1986	1987	1988
Bonds	32.5%	31.6%	35.6%	37.8%	37.7%
Cash and equivalents	15.0%	11.8%	11.3%	5.8%	6.9%
Domestic equities	36.8%	40.9%	38.5%	42.2%	34.0%
International equities	0.0%	0.0%	0.0%	0.0%	7.6%
Other assets	15.7%	15.7%	14.6%	14.2%	13.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Colorado Investment Profile

The Association continues to seek out high-quality Colorado investments such as mortgages and equity real estate, and common stock, corporate bonds and venture capital in Colorado-based companies. Total PERA investments in Colorado are valued at more than $832 million, an increase of $189 million over 1987.

On July 1, 1988, PERA broke ground on a major $90 million expansion and redevelopment of the Palmer Center, a hotel-retail-office complex located in downtown Colorado Springs, Colorado.

Commercial mortgages	$238,700,000
Committed to future funding	151,100,000
Common stock of companies headquartered in Colorado	40,500,000
Corporate bonds and notes	143,800,000
Real estate	220,300,000
State and local bonds	23,500,000
Venture capital	14,700,000
Total	$832,600,000

Investment Brokers

Boettcher & Co. Inc.
Dean Witter Reynolds Inc.
First Boston Corp.
Goldman Sachs & Co.
Hanifen Imhoff Inc.
Kidder Peabody & Co. Inc.
Merrill Lynch Pierce Fenner & Smith Inc.
Morgan Stanley & Co. Inc.
Paine Webber Inc.
Prudential Bache Securities Inc.
Salomon Brothers Inc.
Securities Settlement Corp.
Shearson Lehman Hutton
Smith, Barney Harris Upham and Company
Stifel Nicholas & Co. Inc.

Domestic Stock

Issue Description	Shares Held	Cost	Market Value
Abbott Laboratories	535,400	$ 16,230,538	$ 25,766,125
Aetna Life & Casualty Co.	342,600	15,904,309	16,187,850
Allied-Signal Inc.	609,200	18,332,039	19,799,000
American Cyanamid Co.	469,200	16,113,316	21,935,100
American Express Co.	823,000	18,302,861	21,912,375
American Telephone & Telegraph Co.	1,130,300	28,832,858	32,496,125
Ameritech	291,000	26,017,138	27,863,250
Amoco Corp.	348,100	24,032,503	26,107,500
AMP Inc.	428,000	17,064,724	19,046,000
Atlantic Richfield Co.	348,500	24,267,973	28,097,813
Automatic Data Processing, Inc.	400,000	10,952,039	15,500,000
Bankers Trust New York Corp.	391,400	17,636,364	13,699,000
Barnett Banks, Inc.	393,400	13,580,331	13,375,600
Baxter Travenol Laboratories, Inc.	655,600	13,492,351	11,554,950
Bellsouth Corp.	817,500	33,182,709	32,597,813
Bristol-Myers Co.	581,300	21,662,788	26,303,825
British Petroleum Co. PLC ADR 2	300,000	11,713,666	9,450,000
Caterpillar, Inc.	393,400	17,845,940	25,030,075
Chevron Corp.	567,800	24,688,888	25,976,850
Citicorp	682,800	18,469,754	17,667,450
Coca-Cola Co.	575,800	18,818,390	25,695,075
Colgate-Palmolive Co.	595,600	23,262,707	27,993,200
Commonwealth Edison Co.	786,300	23,978,219	25,947,900
Cooper Industries, Inc.	446,700	20,026,673	24,121,800
CSX Corp.	161,600	5,144,023	5,130,800
Digital Equipment Corp.	146,800	13,401,838	14,441,450
Dominion Resources, Inc.	582,700	28,194,373	24,546,238
Donnelley (R.R.) and Sons	538,900	18,275,551	18,659,413
Dover Corp.	715,700	14,053,361	20,665,838
Dow Chemical Co.	187,600	11,169,901	16,461,900
Dresser Industries, Inc.	745,600	17,819,428	21,902,000
duPont (EI) deNemours & Co.	15,300	1,346,223	1,350,225
Eastman Kodak Co.	578,900	22,333,086	26,122,863
Emerson Electric Co.	685,000	18,796,839	20,806,875
Exxon Corp.	350,000	11,495,973	15,400,000
Fireman's Fund Corp.	416,900	13,595,237	12,194,325
First Interstate Bancorp	393,600	18,123,434	17,072,400
FPL Group, Inc.	819,500	28,153,799	25,506,938
General Electric Co.	600,000	15,478,355	26,850,000
General Mills, Inc.	40,000	1,972,729	2,075,000
General RE Corp.	318,800	13,422,489	17,693,400
General Signal Corp.	38,190	1,818,422	1,814,025
Genuine Parts Co.	254,000	6,400,266	9,017,000
Georgia-Pacific Corp.	485,700	20,585,668	17,910,188
Halliburton Co.	570,900	15,795,836	15,985,200

Issue Description	Shares Held	Cost	Market Value
Hewlett-Packard Co.	276,000	$ 9,594,061	$ 14,697,000
Ingersoll-Rand Co.	320,700	12,258,901	10,983,975
Intel Corp.	468,200	16,387,000	11,119,750
International Business Machines Corp.	161,500	17,249,535	19,682,813
Johnson & Johnson	233,900	14,673,917	19,910,738
Knight-Ridder, Inc.	390,000	17,115,940	17,696,250
Louisiana Land & Exploration Co.	765,500	29,143,475	24,496,000
McDermott International, Inc.	935,300	26,676,467	13,795,675
McDonald's Corp.	661,300	27,050,499	31,825,063
McGraw-Hill, Inc.	51,300	3,656,087	3,193,425
Melville Corp.	291,500	15,864,744	21,680,313
Merck & Co., Inc.	424,400	12,792,252	24,509,100
Minnesota Mining & Manufacturing Co.	285,200	14,893,233	17,682,400
Mobil Corp.	384,700	17,381,521	17,503,850
Motorola, Inc.	406,700	17,053,990	17,081,400
Northrop Corp.	441,500	22,512,514	12,251,625
Pacific Enterprises Corp.	564,300	30,286,402	21,161,250
Parker-Hannifin Corp.	610,800	23,236,373	17,178,750
Penney (JC) Co., Inc.	96,400	3,541,390	4,880,250
PepsiCo, Inc.	507,700	11,527,838	20,054,150
Pfizer, Inc.	339,300	16,690,605	19,679,400
Philip Morris Companies, Inc.	385,000	23,969,641	39,221,875
Procter & Gamble Co.	289,000	20,829,351	25,143,000
Public Service Enterprises Group Inc.	1,363,100	39,640,701	33,395,950
Ralston Purina Co.	270,000	21,681,875	22,106,250
RJR Nabisco, Inc.	205,300	7,470,329	18,707,963
Royal Dutch Petroleum Co.	150,000	15,112,446	17,100,000
Sears, Roebuck & Co.	776,000	30,552,703	31,719,000
Southern California Edison Co.	760,000	27,152,611	24,627,663
Tandy Corp.	604,300	22,933,478	24,776,300
Texas Instruments, Inc.	210,500	9,436,561	8,630,500
Time, Inc.	246,300	21,301,751	26,354,100
Toys R Us	476,900	18,020,530	17,704,913
Union Pacific Corp.	428,100	28,280,738	27,505,425
Union Texas Petroleum Holdings, Inc.	450,000	6,399,563	4,668,750
Unisys Corp.	551,500	21,788,422	15,510,938
United Technologies Corp.	276,500	11,715,339	11,371,063
Unocal Corp.	567,400	17,757,315	21,490,275
Upjohn Co.	16,400	470,598	471,500
U.S. West, Inc.	592,300	31,630,562	34,205,325
Weyerhaeuser Co.	754,450	23,238,734	18,955,556
NCNB Corp. Cum. Conv. Pfd. P.P.	500,000	25,000,000	25,000,000
Small Cap Equity Fund	879,700	15,296,388	15,567,519
S&P 500 Index Fund	17,553,485	637,370,379	689,261,651
Total	58,481,725	$2,208,422,668	$2,380,289,447

*Actuarial Section**

**unaudited*

GABRIEL, ROEDER, SMITH & COMPANY
Actuaries & Consultants

200 Globe Building • 407 East Fort • Detroit, Michigan 48226 • 313-961-3346

May 18, 1989

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

Ladies and Gentlemen:

The basic financial objective of PERA is to establish and receive contributions which, expressed as percents of active member payroll, will remain approximately level from generation to generation of Colorado citizens.

In order to measure progress toward this fundamental objective, PERA has annual actuarial valuations to (i) measure present financial position, and (ii) test the adequacy of established contribution rates. The latest completed actuarial valuations were based upon data and assumptions as of December 31, 1988. Conditions and results are shown in our reports. These valuations indicate that the contribution rates, established by the Retirement Board for benefits then in effect, meet the basic financial objective.

Actuarial valuations are based upon assumptions of future experience in various risk areas. Assumptions are adopted by the Board after consulting with the actuary and were last revised in 1986. We believe the assumptions used in the December 31, 1988 valuations produce results which are reasonable.

The relationship between assumed experience and actual experience in each risk area is then observed annually by an actuarial gain/loss analysis. Since 1982, actual experience has been more favorable than assumed, primarily as the result of historically high real rates of investment return. (During the decade prior to 1982, experience was less favorable due to high rates of inflation which are damaging to financial security programs such as PERA.)

Based upon the valuation results, **it is our opinion that the Public Employees' Retirement Association of Colorado continues in sound condition in accordance with actuarial principles of level cost financing.**

Respectfully submitted,

Norman L. Jones

Norman L. Jones, F.S.A.

Brian B. Murphy

Brian B. Murphy, F.S.A.

NLJ:jas

Actuarial Principles

Once vested in the Plan, each PERA member acquiring a year of service credit is, in effect, given an "IOU" by PERA which says: "The Public Employees' Retirement Association of Colorado owes the member one year of retirement benefits to be paid when the member retires." The law governing PERA financing intends that 1988 members and employers contribute the money to cover the IOUs being handed out this year. By following this principle, the contribution rates will remain approximately level from generation to generation.

An inevitable by-product of the level cost design is the accumulation of reserve assets and investment income from those assets. Invested assets increase as contributions accumulate and income is earned. Investment income then becomes the third contributor for benefits and is directly related to the contribution amounts required from members and employers. The chart below depicts this level-cost design.

In actuarial terminology, this level-cost objective means that the contribution rates must total at least the current cost of the service being given this year and the interest on unfunded actuarial accrued liabilities (UAAL). UAAL is the difference between actuarial liabilities for service rendered and the accrued assets of PERA.

Computing Contributions to Support Fund Benefits

From a given schedule of benefits, and from the member and asset data furnished, the actuary determines the contribution rates to support the benefits by means of an actuarial valuation and funding method.

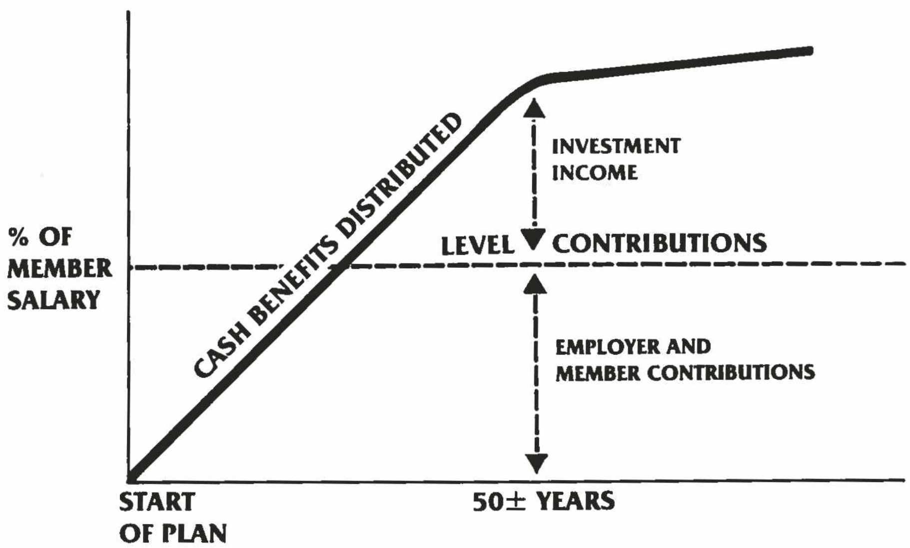
An actuarial valuation uses the rate of investment income which plan assets will earn, the rates of withdrawal of members who leave covered employment before qualifying for any monthly benefit, the rates of mortality, the rates of disability, the rates of salary increases and the assumed ages at actual retirement.

In making an actuarial valuation, assumptions must be made as to what the above rates will be for the next year and for decades in the future. Only the subsequent actual experience of the Plan can indicate the degree of accuracy of the assumptions.

Reconciling Differences Between Assumed and Actual Experience

Once actual experience has occurred and been observed, it will not coincide exactly with assumed experience, regardless of the wisdom of the assumptions or the skill of the actuary and the many calculations made. The future can be predicted with considerable precision (except for inflation) but not with 100 percent accuracy.

PERA copes with these changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience.



Level Contribution Line: Determining the level contribution line requires detailed assumptions concerning experiences in future decades, including: rate of withdrawal of members (turnover), rates of mortality, rates of disability, ages at actual retirement, rates of pay increases, investment income and change in member group size.

Cash Benefits Line: This relentlessly increasing line is the fundamental reality of retirement plan financing. As the ratio of retirees to members rises, the benefits paid rise as a percent of salary. The line increases over time, even if new benefits are not added, and regardless of the financing method being followed.

Summary of Actuarial Assumptions

The following economic and non-economic actuarial assumptions were adopted by the Board of Trustees after consulting with the actuary, and were first used with the December 31, 1986, actuarial valuation. The assumptions are reviewed in depth every five years, and are established to make projections for the Plan's experience decades into the future.

Economic Assumptions

The investment return rate used in making the valuations was 7.5 percent per year compounded annually (net after administrative expenses). The real rate of return is the portion of total investment return which is more than the inflation rate. Considering other financial assumptions, the 7.5 percent investment return rate translates into an assumed real rate of return of 2 percent.

The overall member payroll is assumed to increase 5.5 percent annually. Pay increase assumptions for individual members are shown for sample ages in Exhibits A, B, C, and D. Part of the assumption for each age is for a merit and/or seniority increase, and the other 5.5 percent recognizes inflation.

The number of members is assumed to continue at approximately the present number.

Non-Economic Assumptions

The 1971 Group Annuity Mortality Table, projected to 1984, was used in evaluating the cost of benefits to be paid. Related values are shown in Exhibit F.

The probabilities of age and service retirement are shown in Exhibit G.

The probabilities of withdrawal from service, disability and death-in-service are shown for sample ages in Exhibits A, B, C, D and E. For disability retirement, impaired longevity was recognized by basing benefit values on an adjusted age midway between attained age and normal retirement age. For other withdrawals it was assumed that all members terminating before age 35 with less than five years of service, and 25 percent of members terminating after 35 with over five years of service, would withdraw their contributions and forfeit their monthly benefit at retirement age.

The entry age normal actuarial cost method of valuation was used in determining liabilities and normal cost. Differences in the past between assumed experience and actuarial experience ("actuarial gains and losses") become part of actuarial accrued liabilities. Unfunded actuarial accrued liabilities are amortized to produce payments (principal and interest) which are level percents of payroll contributions.

Employer contribution dollars were assumed to be paid in equal installments throughout the employer fiscal year. Present assets (cash and investments) were used at book value.

The data about persons now covered and about present assets was furnished by PERA's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary. The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.).

Separations From Employment Before Retirement & Individual Pay Increase Assumptions

Exhibit A — State Division

Sample Ages	Withdrawal Men	Withdrawal Women	Death Men	Death Women	Disability Men	Disability Women	Merit & Seniority	Base (Economy)	Increase Next Year
	Percent of Members Separating Within the Next Year						Pay Increase Assumptions For An Individual Member		
STATE DIVISION MEMBERS CONTRIBUTING 8%									
20	7.70%	11.00%	0.05%	0.02%	0.01%	0.01%	7.40%	5.50%	12.90%
25	7.70%	10.40%	0.06%	0.03%	0.04%	0.04%	5.00%	5.50%	10.50%
30	6.50%	9.50%	0.07%	0.04%	0.06%	0.05%	3.40%	5.50%	8.90%
35	5.00%	8.00%	0.10%	0.05%	0.20%	0.12%	2.20%	5.50%	7.70%
40	4.50%	5.90%	0.15%	0.08%	0.27%	0.19%	1.40%	5.50%	6.90%
45	4.50%	5.00%	0.27%	0.12%	0.43%	0.32%	0.90%	5.50%	6.40%
50	4.50%	5.00%	0.49%	0.18%	0.83%	0.76%	0.60%	5.50%	6.10%
55	4.50%	5.00%	0.78%	0.27%	1.12%	1.10%	0.50%	5.50%	6.00%
60	4.50%	5.00%	1.21%	0.46%	1.20%	1.20%	0.30%	5.50%	5.80%
65	4.50%	5.00%	1.95%	0.81%	1.20%	1.20%	— %	5.50%	5.50%

Sample Ages	Withdrawal Men	Withdrawal Women	Death Men	Death Women	Disability Men	Disability Women	Merit & Seniority	Base (Economy)	Increase Next Year
	Percent of Members Separating Within the Next Year						Pay Increase Assumptions For An Individual Member		
STATE DIVISION MEMBERS CONTRIBUTING 9% (State Troopers)									
20	7.94%	7.94%	0.05%	0.02%	0.06%	0.06%	7.40%	5.50%	12.90%
25	7.72%	7.72%	0.06%	0.03%	0.06%	0.06%	5.00%	5.50%	10.50%
30	7.22%	7.22%	0.07%	0.04%	0.06%	0.06%	3.40%	5.50%	8.90%
35	6.28%	6.28%	0.10%	0.05%	0.07%	0.07%	2.20%	5.50%	7.70%
40	5.15%	5.15%	0.15%	0.08%	0.10%	0.10%	1.40%	5.50%	6.90%
45	3.98%	3.98%	0.27%	0.12%	0.17%	0.17%	0.90%	5.50%	6.40%
50	2.56%	2.56%	0.49%	0.18%	0.31%	0.31%	0.60%	5.50%	6.10%
55	0.94%	0.94%	0.78%	0.27%	0.56%	0.56%	0.50%	5.50%	6.00%
60	0.09%	0.09%	1.21%	0.46%	1.19%	1.19%	0.30%	5.50%	5.80%
65	— %	— %	1.95%	0.81%	— %	— %	— %	5.50%	5.50%

Exhibit B — School Division

Sample Ages	Withdrawal Men	Withdrawal Women	Death Men	Death Women	Disability Men	Disability Women	Merit & Seniority	Base (Economy)	Increase Next Year
	Percent of Members Separating Within the Next Year						Pay Increase Assumptions For An Individual Member		
20	6.40%	8.00%	0.05%	0.02%	0.02%	0.02%	5.00%	5.50%	10.50%
25	6.40%	8.00%	0.06%	0.03%	0.02%	0.02%	3.70%	5.50%	9.20%
30	5.60%	8.00%	0.07%	0.04%	0.02%	0.02%	2.70%	5.50%	8.20%
35	4.20%	6.30%	0.10%	0.05%	0.04%	0.04%	2.00%	5.50%	7.50%
40	3.50%	4.50%	0.15%	0.08%	0.10%	0.10%	1.40%	5.50%	6.90%
45	3.50%	4.00%	0.27%	0.12%	0.24%	0.20%	1.00%	5.50%	6.50%
50	3.50%	4.00%	0.49%	0.18%	0.49%	0.30%	0.80%	5.50%	6.30%
55	3.50%	4.00%	0.78%	0.27%	0.88%	0.57%	0.60%	5.50%	6.10%
60	3.50%	4.00%	1.21%	0.46%	1.42%	1.00%	0.40%	5.50%	5.90%
65	3.50%	4.00%	1.95%	0.81%	1.65%	1.00%	— %	5.50%	5.50%

Exhibit C — Municipal Division

Sample Ages	Percent of Members Separating Within the Next Year: Withdrawal Men	Withdrawal Women	Death Men	Death Women	Disability Men	Disability Women	Pay Increase Assumptions For An Individual Member: Merit & Seniority	Base (Economy)	Increase Next Year
20	8.00%	12.00%	0.05%	0.02%	0.01%	0.01%	7.40%	5.50%	12.90%
25	8.00%	12.00%	0.06%	0.03%	0.04%	0.04%	5.00%	5.50%	10.50%
30	8.00%	10.50%	0.07%	0.04%	0.06%	0.05%	3.40%	5.50%	8.90%
35	6.30%	9.00%	0.10%	0.05%	0.20%	0.12%	2.20%	5.50%	7.70%
40	4.50%	6.90%	0.15%	0.08%	0.27%	0.19%	1.40%	5.50%	6.90%
45	4.00%	5.30%	0.27%	0.12%	0.43%	0.32%	0.90%	5.50%	6.40%
50	4.00%	5.00%	0.49%	0.18%	0.83%	0.76%	0.60%	5.50%	6.10%
55	4.00%	5.00%	0.78%	0.27%	1.12%	1.10%	0.50%	5.50%	6.00%
60	4.00%	5.00%	1.21%	0.46%	1.20%	1.20%	0.30%	5.50%	5.80%
65	4.00%	5.00%	1.95%	0.81%	1.20%	1.20%	— %	5.50%	5.50%

Exhibit D — Judicial Division

Sample Ages	Percent of Members Separating Within the Next Year: Withdrawal Men	Withdrawal Women	Death Men	Death Women	Disability Men	Disability Women	Pay Increase Assumptions For An Individual Member: Merit & Seniority	Base (Economy)	Increase Next Year
20	5.00%	5.00%	0.05%	0.02%	0.06%	0.06%	5.00%	5.50%	10.50%
25	5.10%	5.10%	0.06%	0.03%	0.06%	0.06%	3.70%	5.50%	9.20%
30	4.90%	4.90%	0.07%	0.04%	0.06%	0.06%	2.70%	5.50%	8.20%
35	4.40%	4.40%	0.10%	0.05%	0.07%	0.07%	2.00%	5.50%	7.50%
40	3.60%	3.60%	0.15%	0.08%	0.10%	0.10%	1.40%	5.50%	6.90%
45	2.80%	2.80%	0.27%	0.12%	0.17%	0.17%	1.00%	5.50%	6.50%
50	2.00%	2.00%	0.49%	0.18%	0.31%	0.31%	0.80%	5.50%	6.30%
55	1.30%	1.30%	0.78%	0.27%	0.56%	0.56%	0.60%	5.50%	6.10%
60	1.00%	1.00%	1.21%	0.46%	1.19%	1.19%	0.40%	5.50%	5.90%
65	— %	— %	1.95%	0.81%	— %	— %	— %	5.50%	5.50%

Exhibit E

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

Years of Service	State & Municipal Divisions: Men	State & Municipal Divisions: Women	School Division: Men	School Division: Women
0	25.00%	30.00%	30.00%	30.00%
1	15.00%	18.00%	18.00%	18.00%
2	12.00%	16.00%	14.00%	14.00%
3	10.00%	14.00%	10.00%	10.00%
4	8.00%	12.00%	8.00%	8.00%

Single Life Retirement Values

Based on 1971 Group Annuity Mortality Projected to 1984 and 7.5 Percent Interest

Exhibit F — State, School, Municipal and Judicial Divisions

Sample Attained Ages	Present Value of $1.00 Monthly for Life		Present Value of $1.00 Mo. the First Year Increasing $.03 Yearly		Future Life Expectancy (Years)	
	Men	Women	Men	Women	Men	Women
40	$148.30	$155.13	$194.49	$207.11	36.69	43.22
45	142.21	151.24	183.78	199.50	32.01	38.41
50	134.71	146.05	171.18	189.88	27.53	33.66
55	125.72	139.18	156.74	177.86	23.28	28.99
60	114.86	130.21	140.21	163.11	19.27	24.44
65	102.12	118.98	121.85	145.70	15.55	20.09
70	88.28	105.19	102.90	125.66	12.25	15.99
75	74.58	89.73	84.92	104.45	9.49	12.33
80	60.87	74.20	67.78	84.16	7.17	9.28
85	49.24	59.13	53.73	65.36	5.43	6.78

Percent of Eligible Members Retiring Next Year

Exhibit G

Retirement Ages	State Division	State Troopers	School Division	Municipal Division	Judicial Division
55	13%	20%	12%	13%	—%
56	13%	20%	12%	13%	—%
57	13%	20%	12%	13%	—%
58	13%	20%	12%	13%	—%
59	13%	20%	12%	13%	—%
60	17%	20%	20%	17%	15%
61	17%	20%	20%	17%	10%
62	17%	20%	20%	17%	10%
63	17%	20%	20%	17%	10%
64	17%	25%	20%	17%	10%
65	40%	30%	60%	40%	40%
66	40%	25%	40%	40%	20%
67	40%	25%	50%	40%	20%
68	40%	25%	60%	40%	20%
69	40%	40%	80%	40%	20%
70	100%	100%	100%	100%	40%
71	100%	100%	100%	100%	60%
72 and over	100%	100%	100%	100%	100%

Schedule of Retirees and Survivors by Type of Benefit

December 31, 1988

Division	Number of Benefit Recipients	Type of Benefit 1	2	3	4	5	6
State	14,761	11,521	2,344	81	753	62	367
School	15,552	13,166	1,515	43	721	107	874
Municipal	1,583	1,099	310	8	147	19	34
Judicial	170	135	14	1	18	2	3

	Option Selected 1	2	3	4*	Surviving Cobene-ficiary	Surviving Retiree
State	7,492	1,524	2,784	602	1,134	329
School	9,614	1,457	2,165	449	690	306
Municipal	644	185	337	72	150	21
Judicial	29	14	57	13	30	6

Benefit Types:
1 — Age and service retirement.
2 — Disability retirement.
3 — Survivor payment — Option 3.
4 — Survivor payment — children, spouse or dependent parent.
5 — Surviving spouse with deferred future benefit.
6 — Former member with deferred future benefit.

Option Selection: Age and service retirees and disability retirees select an option at retirement to provide death benefits. They are as follows:

1 — Single life benefit.
2 — Joint benefit with ½ to surviving cobeneficiary.
3 — Joint and survivor benefit.
4 — Joint benefit with ½ to either survivor:
Surviving retiree — cobeneficiary has pre-deceased the retiree.
Surviving cobeneficiary — retiree has pre-deceased the cobeneficiary.

*No longer offered.

Schedule of Member Valuation Data

Year	Number of Members	Annual Payroll	Average Annual Salary	% Increase in Average Pay
1978	89,783	$1,237,221,852	$13,780	6.52%
1979	91,131	1,361,116,764	14,936	8.39%
1980	93,741	1,518,107,964	16,195	8.43%
1981	91,672	1,649,921,520	17,998	11.13%
1982	92,076	1,802,596,767	19,577	8.77%
1983	92,346	1,923,936,063	20,834	6.42%
1984	94,766	2,091,707,220	22,072	5.94%
1985	98,315	2,270,948,105	23,092	4.62%
1986	99,977	2,409,384,090	24,099	4.36%
1987	100,808	2,531,357,702	25,110	4.20%
1988	103,064	2,642,664,024	25,641	2.10%

Total of 334 employers in 1988.

Schedule of Retirees and Beneficiaries Added to and Removed from Benefit Payroll*

Year Ended	Added to Payroll No.	Added to Payroll Annual Benefits	Removed from Payroll No.	Removed from Payroll Annual Benefits	Payroll — End of Year No.	Payroll — End of Year Annual Benefits	Cost of Living Stabilization Fund	Average Annual Benefits	Increase in Average Benefits
12/31/77......	1,048	$ 4,883,337	219	$ 668,998	15,782	$ 52,942,700	$ 2,792,076	$3,532	3.5%
12/31/78......	1,725	8,365,952	494	1,451,876	17,013	60,999,693	4,410,064	3,845	8.9%
12/31/79......	1,634	9,730,250	497	1,540,411	18,150	69,189,637	5,363,952	4,108	6.8%
12/31/80......	1,673	11,514,467	503	1,450,894	19,320	79,257,635	20,747,124	5,176	26.0%
12/31/81......	1,595	11,760,232	599	2,174,169	20,316	88,843,513	20,057,160	5,360	3.6%
12/31/82......	2,413	21,263,055	673	2,523,386	22,056	107,582,521	39,978,816	6,690	24.8%
12/31/83......	2,202	21,365,407	736	3,048,446	23,522	125,899,802	38,624,028	6,994	4.6%
12/31/84......	2,247	23,813,326	717	3,009,065	25,052	146,704,999	45,747,060	7,682	9.8%
12/31/85......	2,275	27,050,513	567	3,565,127	26,760	170,190,060	42,286,322	7,940	3.4%
12/31/86......	2,293	28,173,779	857	4,386,095	28,196	193,978,656	44,138,479	8,445	6.4%
12/31/87......	3,408	46,690,933	955	4,928,698	30,649	235,742,208	45,122,863	9,164	8.5%
12/31/88......	2,209	27,914,867	852	3,661,680	32,066	266,034,336	44,537,477	9,685	5.7%

*Numbers derived on an accrual basis.

Member-Retiree Comparison*

The number of persons receiving monthly retirement benefits has grown steadily in relation to membership. This trend will continue for many years into the future.

The level-cost financing principle ensures that contribution rates will not have to be raised to meet benefit promises. The current percentages of salaries will be sufficient to meet the increasing retirement payroll if the benefit provisions contained in state law are not changed.

The retirement benefit disbursements shown in the right-hand column include cost-of-living increases paid in years since 1970. Figures shown are for the State, School and Municipal Divisions. Prior to 1981, figures are for years ended June 30.

Year	Number of retirees on 12/31[1]	Number of member accounts on 12/31[2]	Retirees as % of members on 12/31	Total benefits paid - yr. ended 12/31
1940..................	93	3,715	2.5%	$ 72,588
1945..................	171	5,585	3.1%	137,442
1950..................	280	11,853	2.4%	237,866
1955..................	747	21,185	3.5%	745,679
1960..................	1,775	33,068	5.4%	2,055,139
1965..................	3,631	49,701	7.3%	5,486,225
1970..................	6,308	65,586	9.6%	13,115,234
1975..................	11,650	84,781	13.7%	32,820,433
1980..................	17,301	96,473	17.9%	71,289,456
1985..................	24,842	101,409	24.5%	192,456,029
1986..................	26,217	104,460	25.1%	217,402,612
1987..................	28,657	107,116	26.8%	247,891,967
1988..................	30,025	110,295	27.2%	286,647,682

*Numbers derived on a cash basis.

[1]Excludes cobeneficiaries of retirees.

[2]Includes inactive members.

Members in Valuation

By Attained Age and Years of Service — 12-31-88

State Division

Members included in the State Division valuation totaled 37,573 involving annual salaries totaling $1,046,655,612.

	Years of Service to Valuation Date							Totals	
Attained Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	29							29	$ 285,036
20-24	791	24						815	12,734,988
25-29	2,614	536	23					3,173	64,081,020
30-34	3,191	1,554	509	16				5,270	127,926,696
35-39	3,627	1,853	1,301	373	4			7,158	191,557,908
40-44	2,579	1,587	1,364	1,014	222	10		6,776	199,411,824
45-49	1,537	1,033	879	932	650	183	2	5,216	164,162,112
50-54	896	688	662	694	595	350	91	3,976	126,821,100
55-59	521	527	591	586	427	257	108	3,017	95,651,580
60-64	231	311	320	374	230	97	65	1,628	48,916,392
65-69	44	80	124	104	61	12	29	454	13,418,820
70+	9	10	13	13	7	3	6	61	1,688,136
Totals	16,069	8,203	5,786	4,106	2,196	912	301	37,573	$1,046,655,612

The average age for State Division members was 42 years, and the average service was 8.4 years.

School Division

Members included in the School Division valuation totaled 58,243 involving annual salaries totaling $1,400,310,240.

	Years of Service to Valuation Date							Totals	
Attained Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	32							32	$ 286,440
20-24	839	9						848	12,272,148
25-29	3,694	552	9					4,255	78,030,828
30-34	3,937	2,434	543	10				6,924	141,094,428
35-39	5,059	2,558	2,669	667	1			10,954	250,839,720
40-44	4,506	2,712	2,219	2,469	374	2		12,282	315,677,604
45-49	2,507	1,961	1,613	1,605	1,306	235		9,227	248,157,684
50-54	1,320	1,225	1,260	1,150	962	792	114	6,823	187,095,636
55-59	788	740	813	920	489	441	190	4,381	112,255,692
60-64	339	395	383	415	210	98	88	1,928	43,752,048
65-69	89	126	96	90	56	26	17	500	9,439,752
70+	18	29	17	7	8	5	5	89	1,408,260
Totals	23,128	12,741	9,622	7,333	3,406	1,599	414	58,243	$1,400,310,240

The average age for School Division members was 42 years, and the average service was 8.9 years.

By Attained Age and Years of Service — 12-31-88

Municipal Division

Members included in the Municipal Division valuation totaled 7,006 involving annual salaries totaling $182,769,145.

	Years of Service to Valuation Date							Totals	
Attained Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20	15							15	$ 86,403
20-24	215	4						219	3,429,708
25-29	663	164	13					840	17,875,009
30-34	830	417	102	8				1,357	33,402,795
35-39	752	386	209	105	1			1,453	38,658,946
40-44	442	312	206	165	43			1,168	34,186,561
45-49	253	196	138	98	74	15		774	22,351,636
50-54	120	116	92	74	65	32	14	513	14,768,479
55-59	85	78	70	93	31	19	13	389	11,124,876
60-64	41	45	38	42	15	8	9	198	5,242,722
65-69	20	13	11	10	4	2	3	63	1,403,080
70+	6	8	—	2	—	1	—	17	238,930
Totals	3,442	1,739	879	597	233	77	39	7,006	$182,769,145

The average age for Municipal Division members was 39.5 years, and the average service was 7.1 years.

Judicial Division

Members included in the Judicial Division valuation totaled 242 involving annual salaries totaling $12,951,204.

	Years of Service to Valuation Date							Totals	
Attained Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	No.	Valuation Payroll
Under 20									$ —
20-24									—
25-29									—
30-34	2	1						3	70,968
35-39	21	3	5					29	1,407,684
40-44	26	21	10	2				59	3,043,272
45-49	11	17	20	2				50	2,878,608
50-54	2	6	8	9	3	1		29	1,506,900
55-59	6	7	8	6	3			30	1,805,664
60-64	3	4	10	5	4	1		27	1,419,168
65-69	1	2	4	4	2			13	692,892
70+	—	—	2	—	—	—		2	126,048
Totals	72	61	67	28	12	2		242	$ 12,951,204

The average age for Judicial Division members was 49 years, and the average service was 9 years.

Solvency Test

The PERA funding objective is to be able to pay long-term benefit promises through contributions that remain approximately level from year to year as a percent of salaries earned by members. In this way, members and employers in each year pay their fair share for retirement service accrued in that year by PERA members. Occasionally rates are increased, but only to add or improve benefit provisions.

If the retirement system follows level contribution rate financing principles, the system will pay all promised benefits when due — the ultimate test of financial soundness.

A short-term solvency test is one means of checking PERA's funding progress. In a short-term solvency test, the retirement plan's present assets (investments and cash) are compared with: 1) Member contributions on deposit, 2) the liabilities for future benefits to persons who have retired and 3) the liabilities for service already rendered by active members. In a system that has been following the discipline of level contribution rate financing, the liabilities for member contributions on deposit (liability 1) and the liabilities for future benefits to present retirees (liability 2) will be fully covered by present assets except in rare circumstances.

In addition, the liabilities for service already rendered by members (liability 3) will be partially covered by the remainder of present assets. Generally, if the system has been using level contribution rate financing, the funded portion of liability 3 will increase over time. It is very rare for liability 3 to be fully funded.

The schedule below illustrates the progress in funding liability 3 of PERA and is indicative of PERA's policy to follow the discipline of level contribution rate funding.

TOTAL ACTUARIAL LIABILITIES

Valuation Date	Member Contributions (1)	Retirees and Beneficiaries (2)	Members (Employer Financed Portion) (3)	Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Reported Assets (1)	(2)	(3)
12/31/78	$ 475,439,269	$ 686,029,604	$1,395,583,599	$1,769,105,963	100%	100%	43.5%
12/31/79	536,381,823	798,562,567	1,579,233,427	2,090,081,827	100%	100%	47.8%
12/31/80	600,657,499	926,253,210	1,978,725,621	2,438,498,055	100%	100%	46.1%
12/31/81	674,778,335	1,039,344,715	2,236,428,561	2,731,317,956	100%	100%	45.5%
12/31/82	752,901,555	1,261,240,932	2,527,282,001	3,199,623,171	100%	100%	46.9%
12/31/83	843,058,135	1,505,814,909	2,751,961,085	3,752,861,340	100%	100%	51.0%
12/31/84	937,173,328	1,753,309,252	3,084,444,755	4,393,831,995	100%	100%	55.2%
12/31/85	1,042,574,126	2,020,932,989	3,405,202,669	5,194,918,164	100%	100%	62.6%
12/31/86	1,160,217,971	2,216,934,541	3,771,614,184	6,247,694,817	100%	100%	76.1%
12/31/87	1,259,278,057	2,734,034,675	4,213,269,209	7,019,254,128	100%	100%	71.8%
12/31/88	1,381,635,915	3,084,669,583	4,411,273,368	7,775,426,015	100%	100%	75.0%

Summary of Unfunded Actuarial Accrued Liabilities

Unfunded actuarial accrued liabilities are the difference between actuarially calculated liabilities for service already rendered and the assets of the retirement fund. It is natural for unfunded liabilities to exist for PERA and other retirement plans.

The law governing PERA requires that these liabilities be financed systematically over future years. The period for amortizing unfunded actuarial accrued liabilities is currently under the 60-year limit specified in state law in all divisions of PERA. (The law requires that contribution rates be set at a level which, if actuarial experience matches plan assumptions, will pay off unfunded liabilities over 60 years or less.) The amortization periods have shown stability over the last decade.

Benefits to retirees are "fully funded," that is, assets reserved for benefits currently being paid equal liabilities for those benefits. Liabilities for members are based on service rendered toward their retirement benefits which will be payable in the future. Unfunded actuarial accrued liabilities exist because liabilities for such service by members exceed assets currently on hand for such future benefits.

Because inflation continues, though at a much lower rate in the last few years, the value of dollars is decreasing. Looking at just the dollar amounts of assets, benefits paid, member salaries and unfunded actuarial accrued liabilities will be misleading.

While no one or two measures can fully describe the financial condition of the plan, unfunded actuarial accrued liability dollars divided by member salary dollars provides a meaningful index. The smaller the ratio, the stronger the system. Observation of this relative index over a period of years will give an indication of whether the system is becoming financially stronger or weaker.

This ratio has increased at times over the last decade, but the recent trend shows stability. Actuarial assumptions were revised in 1986 to recognize higher investment returns expected over the long term. The high investment returns in the last five years have helped to increase assets, reduce unfunded actuarial accrued liabilities and lower the ratio of unfunded liabilities to member salaries.

UNFUNDED ACTUARIAL ACCRUED LIABILITIES

Valuation Date	Total Actuarial Accrued Liabilities	Valuation Assets	Assets as a % of Accrued Liabilities	Unfunded Actuarial Accrued Liabilities	Member Salaries	UAAL as a % of Member Salaries
12/31/78	$2,557,052,472	$1,769,105,963	69.2%	$ 787,946,509	$1,237,221,852	63.7%
12/31/79	2,914,177,817	2,090,081,827	71.7%	824,095,990	1,361,116,760	60.6%
12/31/80	3,505,636,330	2,438,498,055	69.6%	1,067,138,275	1,518,107,964	70.3%
12/31/81	3,950,551,611	2,731,317,956	69.1%	1,219,233,655	1,649,921,520	73.9%
12/31/82	4,541,424,488	3,199,623,171	70.5%	1,341,801,317	1,802,596,767	74.4%
12/31/83	5,100,834,129	3,752,861,340	73.6%	1,347,972,789	1,923,936,078	70.1%
12/31/84	5,774,927,335	4,393,831,995	76.1%	1,381,095,340	2,091,707,220	66.0%
12/31/85	6,468,709,784	5,194,918,164	80.3%	1,273,791,620	2,270,948,105	56.1%
12/31/86	7,148,766,696	6,247,694,817	87.4%	901,071,879	2,409,384,090	37.4%
12/31/87	8,206,581,941	7,019,254,128	85.5%	1,187,327,813	2,531,357,702	46.9%
12/31/88	8,877,578,866	7,775,426,015	87.6%	1,102,145,851	2,642,664,024	41.7%

Schedule of Gains and Losses in Accrued Liabilities

Years Ended December 31
Resulting From Differences Between Assumed Experience and Actual Experience

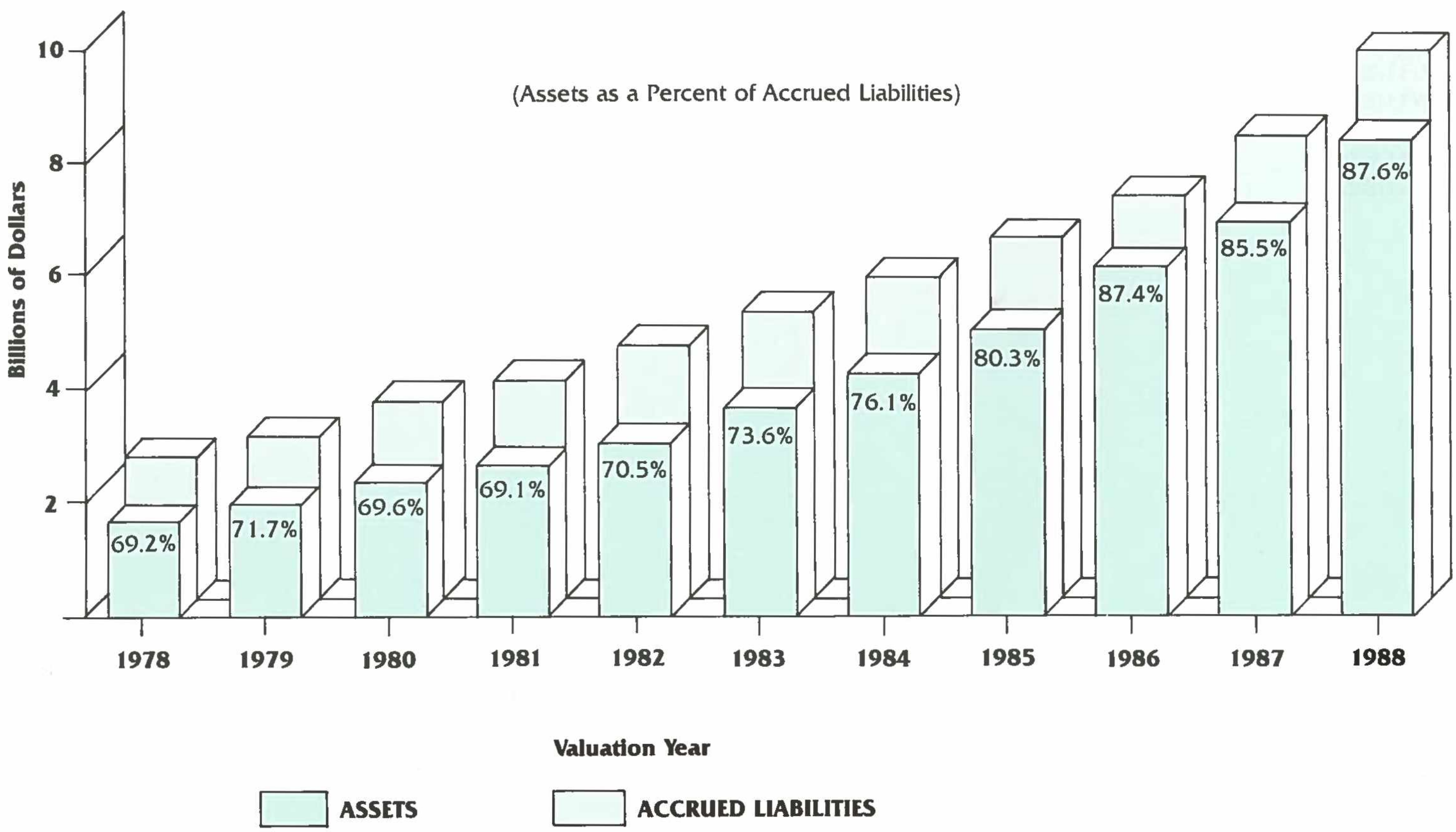
(In Millions of Dollars)

$ Gain (or Loss) For Year

Type of Activity	1988	1987	1986[1]	1985[1]	1984
Age and service retirements	$ (4.90)	$ 0.00	$ (5.30)	$ (5.60)	$ (5.14)
Disability retirements	(2.20)	9.70	(2.12)	(2.77)	(3.58)
Death-in-service benefits	6.00	3.70	2.36	1.66	4.34
Withdrawal from employment	(28.50)	(24.60)	20.31	(51.24)	(47.48)
Pay increases	152.30	44.50	25.30	(31.61)	(33.08)
Investment income	85.00	121.20	471.26	293.16	174.30
Other	(69.40)	(116.70)	38.18	(20.77)	(30.06)
Gain (or loss) during year from financial experience	138.30	37.80	549.99	182.83	59.30
Non-recurring items[2]	7.50	(327.50)[3]	(138.54)	(48.38)	(63.23)
Composite gain (or loss) during year	$145.80	$(289.70)	$411.45	$134.45	$ (3.93)

[1]Revised assumptions.
[2]Non-recurring items include changes due to amendments, changes in actuarial method or assumptions and special transfers to retired life funds.
[3]Effect of law changes.

Assets and Accrued Liabilities 1978 – 1988



Schedule of Computed Employer Contribution Rate

	Expressed as Percents of Member Payroll			
	State Division	School Division	Municipal Division	Judicial Division
Contributions:				
Age and service retirements	10.57%	12.19%	9.94%	14.18%
Disability retirements	1.79	0.98	1.68	1.41
Survivor benefits	0.72	0.56	0.72	1.64
Future refunds	1.89	1.72	2.01	0.81
Total	14.97	15.45	14.35	18.04
Member contributions	8.08[1]	8.00	8.00	8.00[2]
Employer normal cost	6.89	7.45	6.35	10.04
Unfunded actuarial accrued liabilities	2.53	2.25	1.05	2.16
(Amortization period)	28 years	20 years	31 years	32 years
Total employer contribution rate for actuarially funded benefits	9.42%	9.70%	7.40%	12.20%
Cost of living stabilization fund[3]	2.00	2.00	2.00	2.00
Health care fund[4]	0.80	0.80	0.80	0.80
Statutory employer contribution rate	12.22%	12.50%	10.20%	15.00%

[1]Weighted average of more than one statutory rate.
[2]Assumes no judge will elect a refund of contributions made during the 17th and through the 20th years of service.
[3]Used to provide ad-hoc increases to retirees and beneficiaries.
[4]Used to pay a portion of health care premium for retirees and beneficiaries.

*Statistical Section**

**unaudited*

Schedule of Disbursements by Function

(In Thousands of Dollars)

	Refunds	Benefit Payments	Administrative Expenses	Total Expenses
STATE DIVISION				
1979	$13,435	$ 32,293	$1,030	$ 46,758
1980[1]	13,980	29,586	1,037	44,603
1981	16,550	53,094	1,161	70,805
1982	17,091	65,067	1,358	83,516
1983	12,934	77,262	1,782	91,978
1984	14,951	87,948	1,960	104,859
1985	15,246	99,239	2,248	116,733
1986[2]	13,358	111,483	2,810[3]	127,651
1987[2]	13,735	126,099	2,993[3]	142,827
1988[2]	14,679	143,901	3,035[3]	161,615
SCHOOL DIVISION				
1979	12,240	29,958	1,385	43,583
1980[1]	12,525	26,000	1,424	39,949
1981	14,597	47,181	1,570	63,348
1982	13,242	58,369	1,885	73,496
1983	12,280	71,506	2,486	86,272
1984	13,868	81,989	2,726	98,583
1985	13,290	92,511	3,173	108,974
1986[2]	12,152	103,500	4,015[3]	119,667
1987[2]	11,108	118,194	4,318[3]	133,620
1988[2]	11,575	137,135	4,355[3]	153,065
MUNICIPAL DIVISION				
1979	2,136	2,555	142	4,833
1980[1]	2,134	2,318	126	4,578
1981	2,304	4,040	167	6,511
1982	1,911	4,937	198	7,046
1983	2,122	5,989	273	8,384
1984	2,715	7,137	314	10,166
1985	2,796	8,008	365	11,169
1986[2]	2,661	9,352	470[3]	12,483
1987[2]	2,690	10,860	516[3]	14,066
1988[2]	3,358	12,703	520[3]	16,581
JUDICIAL DIVISION				
1979	13	618	8	639
1980[1]	53	398	8	459
1981	84	927	8	1,019
1982	27	1,072	10	1,109
1983	13	1,367	14	1,394
1984	41	1,496	15	1,552
1985	85	1,664	17	1,766
1986[2]	66	1,886	21[3]	1,973
1987[2]	171	2,241	22[3]	2,434
1988[2]	43	2,446	24[3]	2,513

[1]The fiscal year was changed in 1980 to a calendar year. Amounts prior to that time have been allocated on calendar-year basis.

[2]Information for 1986, 1987 and 1988 is on an accrual basis; prior years on a cash basis.

[3]Total for 1986, 1987 and 1988 does not include the Health Care Fund, the Common Operating Fund or the Insurance Dividend Reserve.

Schedule of Receipts by Source

(In Thousands of Dollars)

	Member Contribution	Employer Contribution	Investment Income	Misc. Income[2]	Total Revenues
STATE DIVISION					
1979	$ 43,716	$ 59,876	$ 59,042	$150	$162,784
1980[1]	48,140	68,435	75,553	141	192,269
1981	53,153	83,369	50,932	158	187,612
1982	58,995	89,973	114,948	117	264,033
1983	61,865	94,148	146,782	26	302,821
1984	66,838	101,341	178,807	26	347,012
1985	71,777	108,263	251,086	34	431,160
1986	75,086	87,901[3]	333,992[4]	41	497,020
1987	79,757	83,022[3]	68,972[4]	41	231,792
1988	82,706	86,733[3]	321,160[4]	—	490,599
SCHOOL DIVISION					
1979	50,448	78,244	76,707	300	205,699
1980[1]	56,083	87,375	98,027	235	241,720
1981	62,747	100,234	64,749	259	227,989
1982	67,985	110,520	148,913	255	327,673
1983	74,736	118,813	192,869	56	386,474
1984	80,604	126,826	243,906	30	451,366
1985	89,181	138,009	329,785	49	557,024
1986	98,030	117,210[3]	447,388[4]	47	662,675
1987	104,176	119,167[3]	91,707[4]	13	315,063
1988	108,280	123,744[3]	446,556[4]	—	678,580
MUNICIPAL DIVISION					
1979	5,667	7,204	6,602	16	19,489
1980[1]	6,542	8,329	8,088	10	22,969
1981	7,438	9,762	4,774	18	21,992
1982	8,882	11,347	13,867	14	34,110
1983	9,888	12,604	18,493	10	40,995
1984	10,977	13,938	21,744	8	46,667
1985	12,033	15,305	30,812	7	58,157
1986	13,029	12,044[3]	41,087[4]	7	66,167
1987	13,738	12,693[3]	8,368[4]	7	34,806
1988	14,488	12,848[3]	42,562[4]	—	69,898
JUDICIAL DIVISION					
1979	498	854	951	—	2,303
1980[1]	533	971	1,203	3	2,710
1981	476	1,224	749	1	2,450
1982	722	1,366	1,882	—	3,970
1983	736	1,380	2,541	—	4,657
1984	874	1,476	2,831	—	5,181
1985	879	1,623	3,469	—	5,971
1986	875	1,365[3]	4,438[4]	—	6,678
1987	872	1,207[3]	1,065[4]	—	3,144
1988	958	1,401[3]	4,559[4]	—	6,918

[1]The fiscal year was changed in 1980 to a calendar year. Amounts prior to that time have been allocated on calendar-year basis.

[2]Membership fees not available for benefits.

[3]Contribution in 1986, 1987 and 1988 is net of Health Care Fund and Cost of Living Stabilization Fund contributions.

[4]Investment income for 1986, 1987 and 1988 does not include the Health Care Fund, Cost of Living Stabilization Fund and Common Operating Fund.

Schedule of Benefit Disbursements by Type*

(In Thousands of Dollars)

Year Ended	Retirement Benefits	Survivor Benefits	Refunds	Total[2]
6/30/79	$ 58,378	$2,661	$24,370	$ 85,409
6/30/80	66,703	2,987	29,454	99,144
7/1-12/31/80[1]	47,184	1,946	14,921	64,051
12/31/81	101,108	4,134	32,794	138,036
12/31/82	124,494	4,951	27,733	157,178
12/31/83	150,378	5,746	28,843	184,967
12/31/84	171,980	6,385	34,519	212,884
12/31/85	193,936	7,485	32,069	233,490
12/31/86	217,403	8,818	28,237	254,458
12/31/87	247,963	9,431	27,704	285,098
12/31/88	286,261	9,924	29,655	325,840

*Numbers are derived on an accrual basis

[1]Fiscal year changed

[2]Total does not include the Health Care Fund.

Membership and Benefit Recipient Statistics*

	State Division	School Division	Municipal Division	Judicial Division	Total
Active members — Dec. 31, 1988	37,573	58,243	7,006	242	103,064
Retirements during 1988:					
Disability retirements	169	139	30	7	345
Service retirements	690	953	80	0	1,723
Total	859	1,092	110	7	2,068
Retirement benefits:					
Total receiving retirement benefits on Dec. 31, 1987	13,371	13,942	1,344	144	28,801
Total retiring during 1988	859	1,092	110	7	2,068
Cobeneficiaries continuing after retiree's death	108	81	26	6	221
Persons returning to retirement rolls from suspension	36	26	3	0	65
Total	14,374	15,141	1,483	157	31,155
Retirees deceased during year	(432)	(426)	(64)	(7)	(929)
Retirees returning to work	(26)	(24)	(1)	(0)	(51)
Total receiving retirement benefits— Dec. 31, 1988	13,916	14,691	1,418	150	30,175
Total paid in retirement benefits in 1988	$138,993,878	$133,432,025	$11,975,881	$2,245,898	$286,647,682
Average monthly benefit on Dec. 31, 1988	$ 865	$ 798	$ 730	$ 1,201	$ 828
Average monthly benefit for members retired during 1988	$ 1,119	$ 1,107	$ 904	$ 1,140	$ 1,103
Survivor benefits:					
Survivor benefits being paid on Dec. 31, 1988	641	553	116	17	1,327
Total survivor benefits paid in 1988	$ 5,063,435	$ 3,952,745	$ 746,710	$ 200,323	$ 9,963,213
Deferred benefits:					
Deferred retirements to age 60 or 65	367	874	34	3	1,278
Total annual future benefits	$ 2,403,493	$ 5,159,963	$ 265,181	$ 25,443	$ 7,854,080
Future survivor beneficiaries	18	14	2	0	34
Total annual future benefits	$ 34,720	$ 21,005	$ 3,327	$ 0	$ 59,052

*Numbers are not actuarially derived. Rather, they are calculated on a cash/calendar year basis and include Cost of Living Stabilization Fund and survivor benefits.

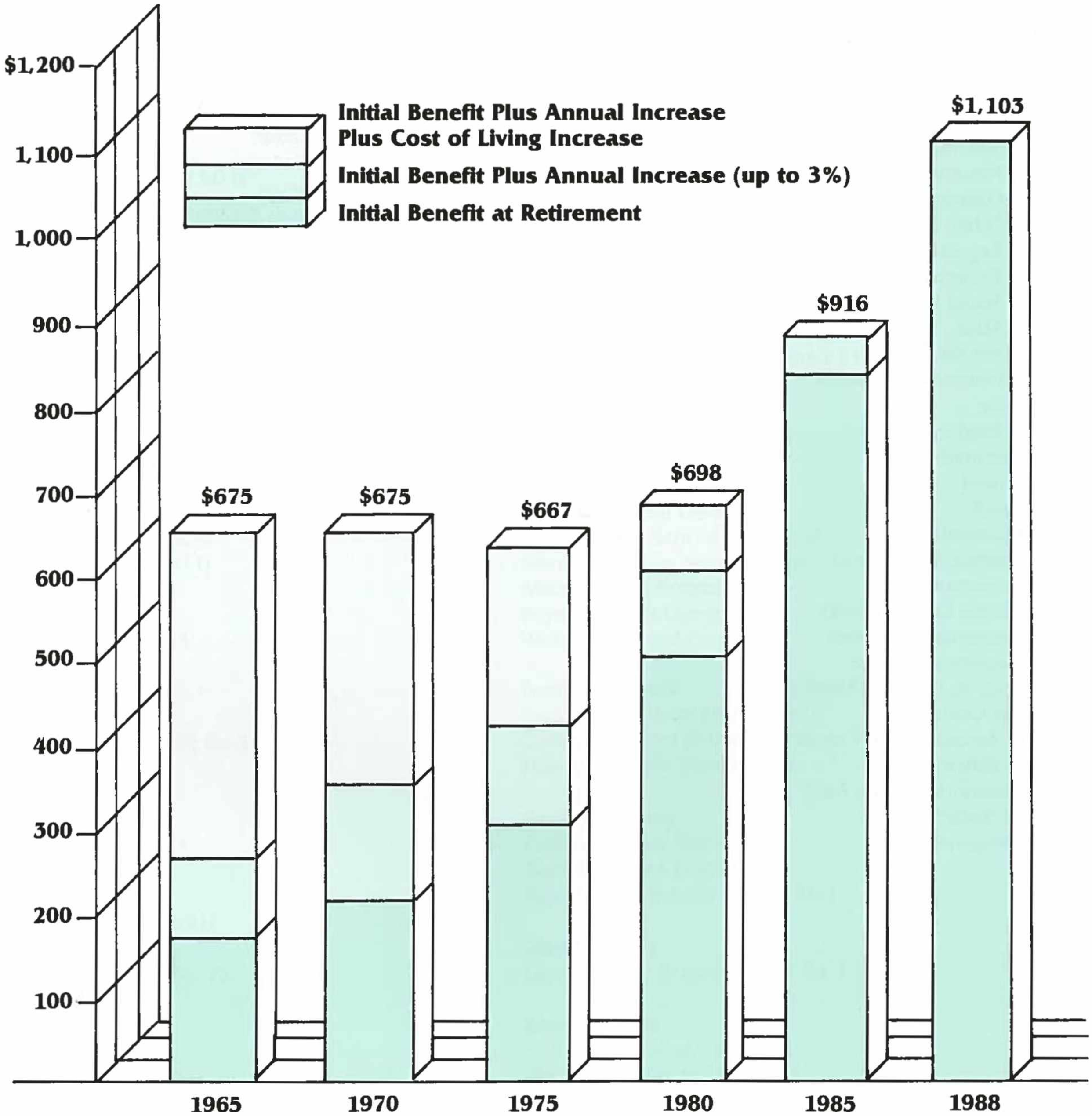
Schedule of Average Retirement Benefits Payable

Year Ending	Average Monthly Benefit*	Average Age at Retirement	Average Current Age of Retirees	Average Years of Service at Retirement
December 31, 1981	$457	62.7	70.2	16.4
December 31, 1982	570	62.5	70.0	16.7
December 31, 1983	596	62.3	70.0	17.0
December 31, 1984	648	62.1	70.0	17.2
December 31, 1985	676	61.8	70.1	17.4
December 31, 1986	727	61.6	70.1	17.5
December 31, 1987	778	61.4	69.7	17.8
December 31, 1988	828	61.7	69.8	18.0

*Does not include survivor benefits.

Average Monthly Benefit by Year of Retirement

December 31, 1988



Schedule of Participating Employers

STATE DIVISION

Agencies and Instrumentalities

Colorado Association of School Boards
Colorado Council on Arts and Humanities
Colorado High School Activities Association
Colorado Lottery
Colorado State Fair
Colorado State Hospital
Colorado Student Loan Program
Colorado Water Resources and Power Development Authority
Department of Administration
Department of Agriculture
Department of Corrections
Department of Education
Department of Health
Department of Highways
Department of Institutions
Department of Labor and Employment
Department of Law
Department of Local Affairs
Department of Military Affairs
Department of Natural Resources
Department of Personnel
Department of Planning and Budgeting
Department of Public Safety
Department of Regulatory Agencies
Department of Revenue
Department of Social Services
Department of State
Department of the Treasury
Fire and Police Pension Association
General Assembly
Grand Junction Regional Center
Joint Budget Committee
Judicial Department
Legislative Council
Moffat Tunnel Commission
Office of the District Attorneys
Office of the Governor
Office of Legislative Legal Services
Office of the Lieutenant Governor
Office of the Secretary of State
Public Employees' Retirement Association
Pueblo Regional Center
Special District Association of Colorado
State Auditor's Office
State Compensation Insurance Fund
State Historical Society
Wheat Ridge Regional Center

Institutions of Higher Education

Adams State College
Arapahoe Community College
Auraria Higher Education Center
Aurora Community College
Colorado Advanced Technical Institute
Colorado School of Mines
Colorado State University
Commission on Higher Education
Denver Community College
Fort Lewis College
Front Range Community College
Lamar Community College
Mesa College
Metropolitan State College
Morgan Community College
Otero Junior College
Pikes Peak Community College
Pueblo Vocational Community College
Red Rocks Community College
School for the Deaf and Blind
State Board for Community Colleges and Occuptional Education
Trinidad State Junior College
Trustees of State Colleges
University of Colorado at Boulder
University of Colorado at Colorado Springs
University of Colorado at Denver
University of Colorado Health Sciences Center
University of Northern Colorado
University of Southern Colorado
Western State College

SCHOOL DIVISION

Adams County
Adams County School District 14
Bennett School District 29J
Brighton School District 27J
Mapleton School District 1
Northglenn-Thornton School District 12
Strasburg School District 31J
Westminster School District 50

Alamosa County
Alamosa County School District Re-11J
Sangre De Cristo School District Re-22J

Arapahoe County
Aurora School District 28J (Adams-Arapahoe)
Byers School District 32J
Dear Trail School District 26J
Englewood School District 1
Littleton School District 6
Sheridan School District 2

Archuleta County
Archuleta County School District 50 Jt

Baca County
Campo School District RE-6
Pritchett School District RE-3
Springfield School District RE-4
Vilas School District RE-5
Walsh School District RE-1

Bent County
Las Animas School District RE-1
McClave School District RE-2

Boulder County
Boulder Valley School District RE-2
St. Vrain Valley School District RE1J

Chaffe County
Buena Vista School District R-31
Salida School District R-32(J)

Cheyenne County
Cheyenne County School District Re-5
Kit Carson School District R-1

Clear Creek County
Clear Creek School District RE-1

Conejos County
North Conejos School District RE1J
Sanford School District 6J
South Conejos School District RE 10

Costilla County
Centennial School District R-1
Sierra Grande School District RE-1

Crowley County
Crowley County School District RE-1

Custer County
Custer County Consolidated School District C-1

Delta County
Delta County School District 50(J)

Dolores County
Dolores County School District Re No. 1

Douglas County
Douglas County School District Re 1

Eagle County
Eagle County School District Re 50

Elbert County
Agate School District 300
Big Sandy School District 100J
Elbert School District 200
Elizabeth School District C-1
Kiowa School District C-2

El Paso County
Academy School District #20
Calhan School District RJ1
Cheyenne Mountain School District 12
Colorado Springs School District 11
Edison School District 54 Jt
Ellicott School District 22
Falcon School District 49
Fountain School District 8
Hanover School District 28
Harrison School District 2
Lewis-Palmer School District 38
Manitou Springs School District 14
Miami School District 60 Jt
Peyton School District 23 Jt
Widefield School District 3

Fremont County
Canon City School District Re-1
Cotopaxi School District Re-3
Florence School District Re-2

Garfield County
Garfield School District Re-2
Garfield School District 16
Roaring Fork School District Re-1

Gilpin County
Gilpin County School District Re-1

Grand County
East Grand County District 2
West Grand County District 1

Gunnison County
Gunnison Watershed School District Re1J

Hinsdale County
Hinsdale County School District Re-1

Huerfano County
Huerfano School District Re-1
La Veta School District Re-2

Jackson County
North Park School District R-1

Jefferson County
Jefferson County School District R-1

Kiowa County
Eads School District Re-1
Plainview School District Re-2

Kit Carson County
Arriba-Flagler Consolidated School District No. 20
Bethune School District R-5
Burlington School District Re-6J
Hi-Plains School District R-23
Stratton School District R-4

Lake County
Lake County School District R-1

La Plata County
Bayfield School District 10Jt-R
Durango School District 9-R
Ignacio School District 11 Jt

Larimer County
Park School District R-3
Poudre School District R-1
Thompson School District R-2J

Las Animas County
Aguilar Reorganized School District 6
Branson Reorganized School District 82
Hoehne Reorganized School District 3
Kim Reorganized School District 88
Primero Reorganized School District 2
Trinidad School District 1

Lincoln County
Genoa/Hugo School District C-113
Karval School District Re 23
Limon School District Re 4J

Logan County
Buffalo School District Re-4
Frenchman School District Re-3
Plateau School District Re-5
Valley School District Re-1

Mesa County
De Beque School District 49 Jt
Mesa County Valley School District 51
Plateau Valley School District 50

Mineral County
Creede Consolidated School District 1

Moffat County
Moffat County School District Re No. 1

Montezuma County
Dolores School District RE-4A
Mancos School District Re-6
Montezuma-Cortez School District Re 1

Montrose County
Montrose County School District Re-1J
West End School District Re-2

Morgan County
Brush School District Re-2 (J)
Fort Morgan School District Re-3
Weldon Valley School District Re-20 (J)
Wiggins School District Re-50 (J)

Otero County
Cheraw School District 31
East Otero School District R1
Fowler School District R-4J
Manzanola School District 3J
Rocky Ford School District R2
Swink School District 33

Ouray County
Ouray School District R-1
Ridgway School District R-2

Park County
Park County School District Re-2
Platte Canyon School District 1

Phillips County
Haxtun School District Re-2J
Holyoke School District Re-1J

Pitkin County
Aspen School District 1

Prowers County
Granada School District Re-1
Holly School District Re-3
Lamar School District Re-2
Wiley School District Re-13 Jt

Pueblo County
Pueblo City School District 60
Pueblo County School District 70

Rio Blanco County
Meeker School District RE1
Rangely School District RE4

Rio Grande County
Del Norte School District C-7
Monte Vista School District C-8
Sargent School District Re-33J

Routt County
Hayden School District Re 1
South Routt School District Re 3
Steamboat Springs School District Re 2

Saguache County
Center Consolidated School District 26Jt
Moffat School District 2
Mountain Valley School District Re 1

San Juan County
Silverton School District 1

San Miguel County
Norwood School District R-2J
Telluride School District R-1

Sedgwick County
Julesburg School District Re 1
Platte Valley School District Re 3

Summit County
Summit School District Re-1

Teller County
Cripple Creek-Victor School District Re-1
Woodland Park School District RE-2

Washington County
Akron School District R-1
Arickaree School District R-2
Lone Star School District 101
Otis School District R-3
Woodlin School District R-104

Weld County
Ault-Highland School District Re-9
Briggsdale School District Re-10
Eaton School District Re-2
Fort Lupton School District Re-8
Gilcrest School District Re-1
Greeley School District 6
Johnstown School District Re-5J
Keenesburg School District Re-3
Pawnee School District Re-12
Platte Valley School District Re-7
Prairie School District Re-11
Windsor School District Re-4

Yuma County
East Yuma County School District R-J-2
West Yuma County School District R-J-1

Boards of Cooperative Education Services (BOCES)
Adams County BOCES
Arkansas Valley BOCES
East Central BOCES
Northeast Colorado BOCES
Northern Colorado BOCES
South Central BOCES
South Platte Valley BOCES
Southeast Metropolitan BOCES
Southeastern BOCES
Weld BOCES

Boards of Cooperative Services (BOCS)
Delta-Montrose BOCS
Larimer County BOCS
Montezuma BOCS
Mountain BOCS
Northwest Colorado BOCS
Pikes Peak BOCS
San Juan BOCS
San Luis Valley BOCS
Southwest BOCS

Vocational Schools
Boulder Valley Vocational Technical Center
Delta-Montrose Area Vocational School
Larimer County Vocational Technical Center
San Juan Basin Area Vocational School
San Luis Valley Area Vocational School

Local District Colleges
Aims Community College
Colorado Mountain College
Colorado Northwestern Community College
Northeastern Junior College

MUNICIPAL DIVISION

Alamosa Housing Authority
Aurora Housing Authority
Blanca-Fort Garland Metropolitan District
Brush Housing Authority
Carbon Valley Park & Recreation District
Castle Pines Metropolitan District
Center Housing Authority
City of Alamosa
City of Arvada
City of Boulder
City of Colorado Springs
City of Durango
City of Fort Morgan
City of Lafayette
City of Lamar
City of Manitou Springs

City of Pueblo
City of Wray
City of Yuma
Colorado Housing Finance Authority
Colorado Springs Public Utilities
Costilla Housing Authority
East Larimer County Water District
Eastern Rio Blanco Parks & Recreation Department
Fairmont Fire Protection District
Fremont Sanitation District
Garfield Housing Authority*
Lamar Housing Authority
Longmont Housing Authority
Meeker Regional Library District
Memorial Hospital — Colorado Springs
Mountain Village Metropolitan District*
North Chaffee County Regional Library
Northeast Colorado Health Department
Parker Water & Sanitation District
Pueblo City-County Health Department
Pueblo Regional Library
Rio Blanco Western Recreation Parks
Saguache Housing Authority*
San Miguel County Public Library
Southwest Regional Library
Town of Bayfield
Town of Cedaredge
Town of Crawford
Town of Estes Park
Town of Firestone
Town of Parker
Town of Platteville
Town of Seibert
Tri-County Health Department
Weld County Health Department
Windsor-Severance Library District
Yuma Housing Authority

JUDICIAL DIVISION

1st-23rd District Court
24th District-Denver Probate Court
25th District-Denver Juvenile Court
Adams County Court
Alamosa County Court
Arapahoe County Court
Archuleta County Court
Baca County Court
Bent County Court
Boulder County Court
Chaffee County Court
Cheyenne County Court
Clear Creek County Court
Conejos County Court
Costilla County Court
Court of Appeals
Crowley County Court
Custer County Court
Delta County Court
Denver County Court
Dolores County Court
Douglas County Court
Eagle County Court
El Paso County Court
Elbert County Court
Fremont County Court
Garfield County Court
Gilpin County Court
Grand County Court
Gunnison County Court
Hinsdale County Court
Huerfano County Court
Jackson County Court
Jefferson County Court
Kiowa County Court
Kit Carson County Court
La Plata County Court
Lake County Court
Larimer County Court
Las Animas County Court
Lincoln County Court
Logan County Court
Mineral County Court
Moffat County Court
Montezuma County Court
Morgan County Court
Otero County Court
Ouray County Court
Park County Court
Phillips County Court
Pitkin County Court
Prowers County Court
Pueblo County Court
Rio Blanco County Court
Rio Grande County Court
Routt County Court
Saguache County Court
San Juan County Court
San Miguel County Court
Sedgwick County Court
Summit County Court
Supreme Court
Teller County Court
Washington County Court
Weld County Court
Yuma County Court

*Affiliated in 1988

*Other PERA Programs**

Public Employees' Retirement Association of Colorado

**unaudited*

Health Care Program

The PERA Health Care Program began covering benefit recipients and qualified dependents on July 1, 1986. This benefit was developed after legislation in 1985 established the Program and the Health Care Fund.

The Health Care Fund receives a portion of the monthly PERA contribution (0.8 percent of salary) from affiliated employers. This allocation is invested and any earnings are added to the Health Care Fund.

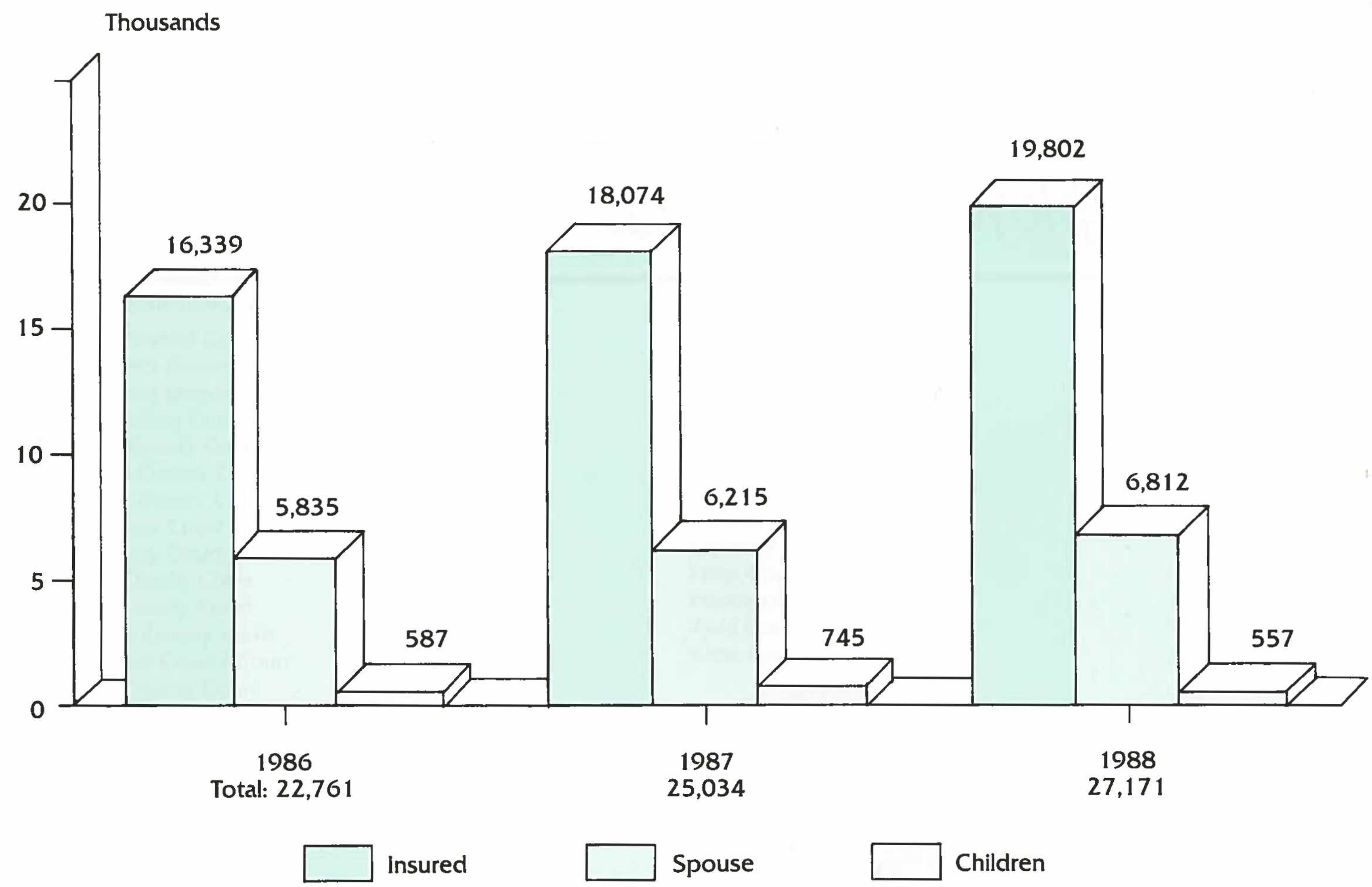
Under the Program, PERA subsidizes a portion of the monthly premium for health care coverage. The benefit recipient pays any remaining part of that premium through an automatic deduction from the monthly retirement benefit. In July 1988, the subsidy increased from $87.01 to $95 per month for benefit recipients who had 20 or more years of PERA service credit. For those with less service, the subsidy was reduced by 5 percent ($4.75) for each year under 20 years.

Monthly premium costs for participants depend on the health care plan selected, the number of persons being covered, Medicare eligibility and the number of years of service credit a retiree has.

Under the Program, PERA uses Blue Cross and Blue Shield of Colorado, a major medical indemnity carrier, and seven Health Maintenance Organizations around Colorado.

The annual open enrollment for the Health Care Program was held between May 1 and June 15, 1988. During that period, PERA benefit recipients could join the Program for the first time, transfer from one carrier to another and add or delete eligible dependents.

Health Care Enrollments



Life Insurance Program

PERA provides its members with access to two group life insurance programs. Members may join one or both of the plans, and may continue coverage into retirement.

During the annual open enrollment periods, members are not required to furnish evidence of good health for themselves or their dependents. Members may enroll outside the enrollment period, but must provide a health statement from a physician.

Monthly premiums are paid by payroll deduction; the premiums are $9 for Prudential and $10 for Rocky Mountain Life.

In 1986, PERA began administering a special Rocky Mountain Life plan for a group of retired state employees. This group is closed with no provisions for new participants.

After an extensive bid and review process in 1988, the PERA Board of Trustees voted to transfer the plan underwritten by New York Life Insurance Company to the Rocky Mountain Life Insurance Company effective October 1, 1988. With the transfer, a higher level of benefits became available and claims processing became more efficient. The life insurance plan underwritten by the Prudential Insurance Company also increased its benefit levels in 1988.

Additionally, a one-time, open enrollment period for all PERA retirees to enroll in Rocky Mountain Life was held between October 1 and December 31, 1988, with coverage beginning January 1, 1989. The number of new members as a result of this open enrollment is not reflected in the table below.

Life Insurance Enrollment

Year	New York/ Rocky Mountain Life	Prudential	Rocky Mountain Life (Closed Group)	Total Enrollments
1978	17,625	8,155		25,780
1979	17,691	9,425		27,116
1980	18,098	10,925		29,023
1981	17,729	11,472		29,201
1982	17,553	12,077		29,630
1983	18,242	12,298		30,540
1984	19,643	12,837		32,480
1985	21,296	13,635		34,931
1986	23,052	13,863	5,030	41,945
1987	24,394	14,113	4,800	43,307
1988	25,157	14,152	4,600	43,909

Life Insurance Dollars Paid

Year	New York/ Rocky Mountain Life	Prudential	Rocky Mountain Life (Closed Group)	Total Paid
1978	$1,086,319	$255,442		$1,341,761
1979	992,477	394,377		1,386,854
1980	1,026,473	442,340		1,468,813
1981	1,137,044	619,274		1,756,318
1982	1,388,697	528,458		1,917,155
1983	1,114,010	447,706		1,561,716
1984	1,484,583	872,860		2,357,443
1985	1,950,696	910,057		2,860,753
1986	1,670,531	802,016	$119,000	2,591,547
1987	2,097,665	865,783	212,000	3,175,448
1988	1,121,670	711,309	297,000	2,129,979

Voluntary Investment Program

The PERA Voluntary Investment Program (VIP) was established on July 1, 1985, under section 401(k) of the Internal Revenue Code. Program participation is voluntary and contributions are entirely separate from those that members make to the Association each month. VIP allows participants to defer taxes by investing some of their current income for retirement. Earnings on VIP investments are also tax-deferred.

In 1988, members were able to invest up to 18 percent of their annual gross salary, to a maximum of $7,313 in the Program. Contributions are deducted from the participant's monthly salary.

VIP offers members a choice of three funds in which they may invest. They are a Short-Term Fund, a Fixed Income (bond) Fund and a Growth Stock (equity) Fund. Each quarter, members may change their contribution amount, transfer their account balance between funds and change the contribution percentage designated to each fund. The Program also has loan and hardship withdrawal provisions.

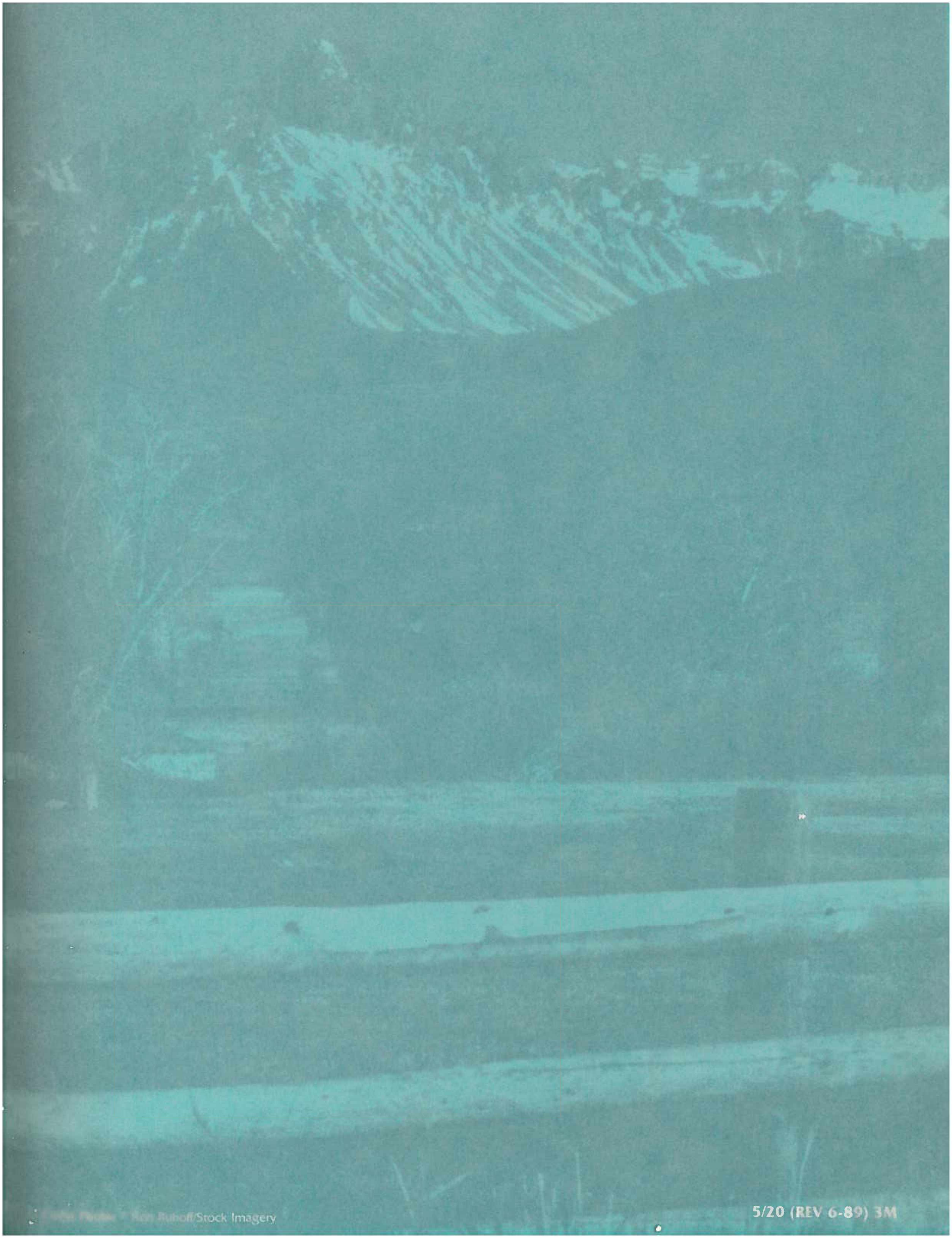
On December 31, 1988, VIP had accumulated assets of $7,975,075 and 1,596 participants.

Year	Assets	Number of Participants
1985 (Jul-Dec)	$ 203,272	236
1986	1,750,673	902
1987	4,292,351	1,322
1988	7,975,075	1,596

Fund Performance

	Jan-Mar 1988	Apr-Jun 1988	July-Sept 1988	Oct-Dec 1988	Calendar Year 1988	Calendar Year 1987	Calendar Year 1986	July-Dec 1985	Since Inception (7-1-85)
Short-Term	2.19%	2.15%	2.20%	2.20%	9.00%	9.40%	9.46%	10.54%	34.00%
Fixed Income......	3.04%	1.36%	1.70%	1.60%	7.90%	4.92%	13.16%	43.26%	50.30%
Growth Stock......	2.75%	5.99%	.70%	2.30%	12.30%	7.20%	5.43%	35.53%	46.00%

Note: The "time-weighted" or actual return a participant may have realized may be less or more, depending on when the member began investing in a particular fund and/or the amount of investments the member had in a respective fund during each calendar quarter. A "time-weighted" rate of return measures each quarter's earnings based on $1 invested in each fund for the period specified. The rate of return quoted is prior to the administrative charge.



Cover Photo • Ron Ruhoff/Stock Imagery

5/20 (REV 6-89) 3M

Cover Photo: © Ron Ruhoff/Stock Imagery

5/20 (REV 6-89) 3M

Public Employees' Retirement Association of Colorado