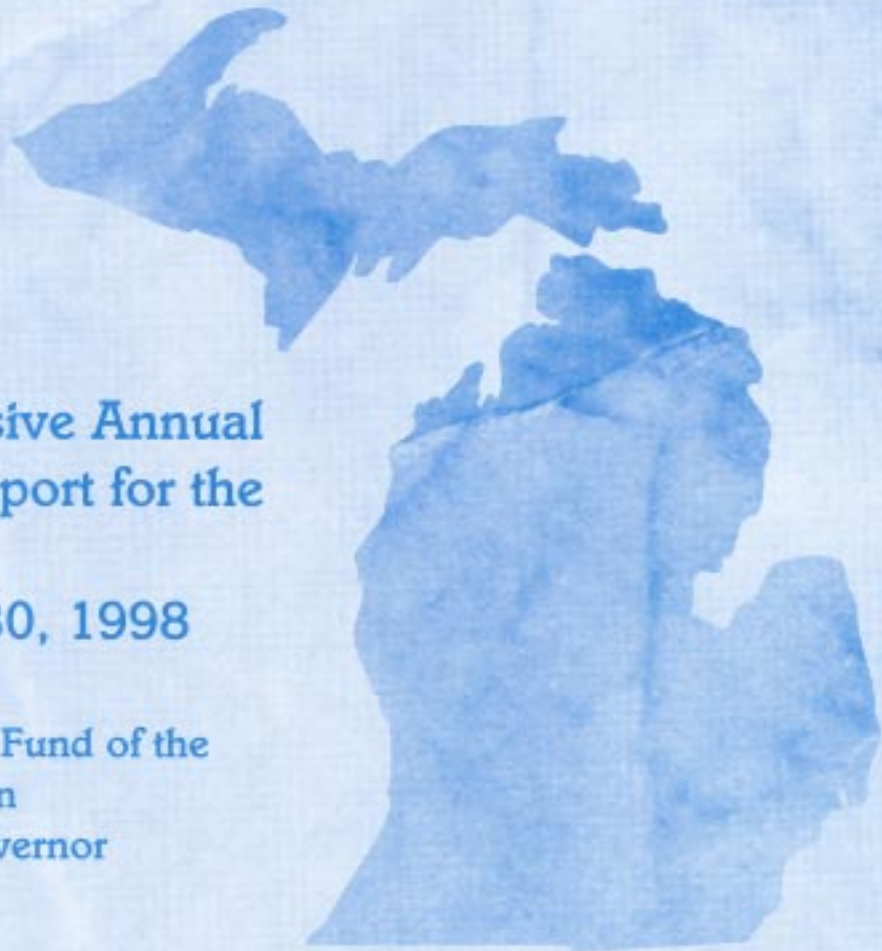


# **Michigan State Police Retirement System**

**Comprehensive Annual  
Financial Report for the  
Year Ended  
September 30, 1998**

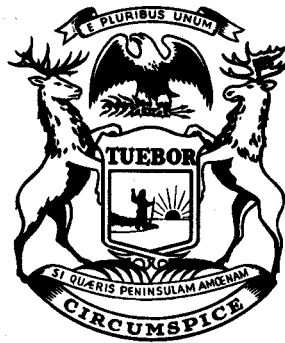
**A Pension Trust Fund of the  
State of Michigan  
John Engler, Governor**



# INTRODUCTORY SECTION

## Michigan State Police Retirement System

### Comprehensive Annual Financial Report for the Fiscal Year Ended September 30, 1998



# MSPRS

Prepared by:  
Office of Retirement Services  
Michigan State Police Retirement System  
7150 Harris Drive  
P.O. Box 30171  
Lansing, Michigan 48909-7671  
(517) 322-5103  
1-800-381-5111

# INTRODUCTORY SECTION

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The cost of printing this report was \$ 1,353.52 (3.38 each), which was paid for by the retirement system at no cost to taxpayers.

# INTRODUCTORY SECTION

Letter of Transmittal  
Board Members  
Advisors & Consultants  
Organization Chart

# INTRODUCTORY SECTION

## Letter of Transmittal

State Police Retirement System  
General Office Building, Third Floor  
P.O. Box 30171  
Lansing, Michigan 48909-7671  
Telephone (517) 322-5103  
Outside Lansing 1-800-381-5111

### STATE OF MICHIGAN

JOHN ENGLER, Governor

### DEPARTMENT OF MANAGEMENT AND BUDGET

February 16, 1999

The Honorable John Engler  
Governor, State of Michigan,

Members of the Legislature  
State of Michigan

Retirement Board Members  
and  
Members, Retirees and Beneficiaries

Ladies and Gentlemen:

We are pleased to present the annual report of the Michigan State Police Retirement System (MSPRS or System) for fiscal year 1998.

Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with the management of the System. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of the System.

The Michigan State Police Retirement System was established by legislation under Public Act 251 of 1935. It now operates under the provisions of Public Act 182 of 1986 as amended. The number of active and retired members and beneficiaries of the System is presented in Note 1 of the financial statements in the Financial Section of this report. The purpose of the System is to provide benefits for all state police. The services provided by the staff are performed to facilitate benefits to members.

The 1998 annual report is presented in five sections. The Introductory Section contains the transmittal letter, the identification of the administrative organization and professional consultants used by the System. The Financial Section contains the financial statements of the System and certain supplemental schedules. The Investment Section summarizes investment activities. The Actuarial Section contains the independent consulting actuary's certification, an outline of actuarial assumptions and methods, and other actuarial statistics. The Statistical Section contains statistical tables of significant data pertaining to the Retirement System.

## Letter of Transmittal (Continued)

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### MAJOR GOALS ACCOMPLISHED

The Office of Retirement Services (ORS) accomplished several major goals and initiatives in 1998 to improve services to the Michigan State Police Retirement System.

- » The Office of Retirement Services' Customer Information Center (CIC) initiated toll-free phone service on January 30, 1998 for active and retired members who live outside the Lansing area. The CIC receives approximately 20,000 phone calls per month. In addition, the Outreach Program now makes it possible for employees of all four retirement systems to receive retirement information at four locations - Detroit, Waterford, Holland and Lansing.
- » Active and retired members of the State Police Retirement System were notified in July that the State's pension contribution rate was reduced. Return on the fund's investments was higher than anticipated and various expenditures were less than expected. In the annual actuarial review of the system, the ratio of assets to all estimated current and future retirement benefits was greater than 100%, showing the system to be fully funded. Because of these factors, a lower contribution rate is required to continue the State Police Retirement System's solid, secure, fully-funded status.
- » In March of 1998 the Office of Retirement Services mailed the first issue of its new Connections newsletter to all retirees, with a second issue going out in October. The objectives for this newsletter are threefold: 1) To establish a direct connection with all retirees; 2) To remind retirees ORS is available to assist them and tell them how to access that assistance, and 3) To give retirees information that will assist them in doing business with the Office of Retirement Services.
- » Reengineering has redesigned the process for disability retirement whereas a common application, procedures, policies, tracking and process flow are now used for all four retirement systems. This has laid the groundwork for reducing total processing time by 50%.
- » The Office of Retirement Services is diligently working on a year 2000 plan to assure our computer hardware and software will be ready for the new millennium and beyond so that the customers of ORS will receive benefits and information in a timely manner.
- » A pension milestone was reached in August 1998 - an annualized \$2 billion in combined pension payments for State retirees, Public School retirees, State Police retirees, and retired Judges. The \$1 billion mark was reached just eight years ago. This trend reinforces our ranking as the 19th largest public retirement system in the nation based on assets.

### FINANCIAL INFORMATION

#### *Additions to Plan Net Assets*

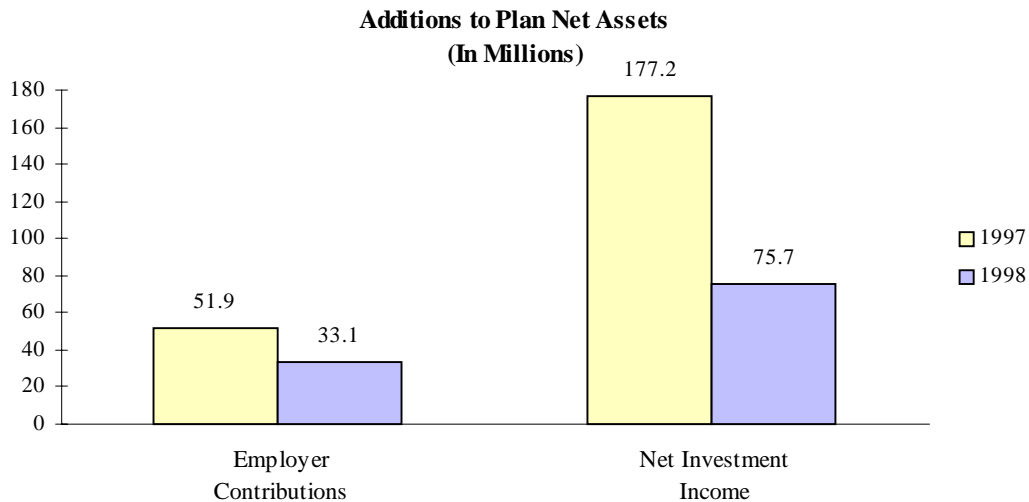
The reserves needed to finance retirement and health benefits are accumulated through the collection of employer contributions and through earnings on investments. Contributions and net investment income for fiscal year 1998 totaled approximately \$109.8 million.

Total contributions and net investment income decreased 52.2% from those of the prior year due primarily to decreased investment earnings. Employer pension contributions decreased 36.1% and net investment income decreased 57.3% from the prior year. The Investment Section of this report reviews the results of investment activity for 1998.

# INTRODUCTORY SECTION

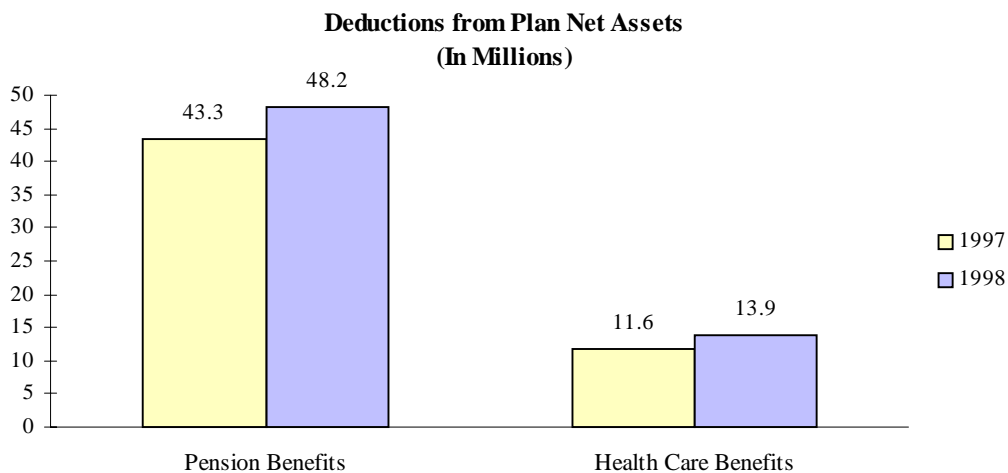
## Letter of Transmittal (Continued)

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### *Deductions From Plan Net Assets*

The primary expenditures of the System include the payment of pension benefits to members and beneficiaries, payments for health, dental and vision benefits, refund of contributions to former members, and cost of administering the System. Expenditures for health care increased by \$2.3 million from \$11.6 million to \$13.9 million during the fiscal year. Total deductions for fiscal year 1998 were \$62.3 million, an increase of 13.0% over 1997 deductions. The 11.3% increase in benefit expenditures resulted from a combination of increased benefits payments per retiree and increased number of retirees paid.



## Letter of Transmittal (Continued)

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### *Internal Control*

The management of the System is responsible for maintaining a system of adequate internal accounting control designed to provide reasonable assurance that transactions are executed in accordance with management's general or specific authorization, and are recorded as necessary to maintain accountability for assets and to permit preparation of financial statements in accordance with generally accepted accounting principles. The internal control structure is designed to provide reasonable assurance regarding the safekeeping of assets and reliability of all financial records.

### **INVESTMENT**

The State Treasurer is the investment fiduciary and custodian of all investments of the System pursuant to state law. The primary investment objective is to maximize the rate of return on the total investment portfolio, consistent with a high degree of prudence and sufficient diversity to eliminate inordinate risks and to meet the actuarial assumption for the investment return rate. The investment activity for the year produced a total rate of return on the portfolio of 8.3%. For the last five years, the System has experienced an annualized dollar weighted rate of return of 13.0%. A summary of asset allocation and rates of return can be found in the Investment Section of this report.

### **FUNDING**

Funds are derived from the excess of additions to plan net assets over deductions from plan net assets. Funds are accumulated by the System in order to meet future benefit obligations to retirees and beneficiaries. The percentage computed by dividing the actuarial value of assets by the actuarial accrued liability is referred to as the "funded ratio." This ratio provides an indication of the funding status of the System and, generally, the greater this percentage, the stronger the System. As of September 30, 1998, the actuarial value of the assets and actuarial accrued liability of the System were \$974 million and \$944 million resulting in a funded ratio of 103.2%. As of September 30, 1997, the amounts were \$929 million and \$877 million respectively.

A historical perspective of funding levels for the System is presented in the Required Supplementary Information in the Financial Section of this report.

### **PROFESSIONAL SERVICES**

An audit of the System was conducted by Andrews, Hooper & Pavlik P.L.C., independent auditors. The auditors' report on the System's financial statements is included in the Financial Section of this report.

Statute requires that an annual actuarial valuation be conducted. The purpose of the valuation is to evaluate the mortality, service, compensation and other financial experience of the System and to recommend employer funding rates for the subsequent year. This annual actuarial valuation was completed for the fiscal years ended September 30, 1998 and 1997, by the Segal Company. Actuarial certification and supporting statistics are included in the Actuarial Section of this report.



# INTRODUCTORY SECTION

## Letter of Transmittal (Continued)

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### ACKNOWLEDGMENTS

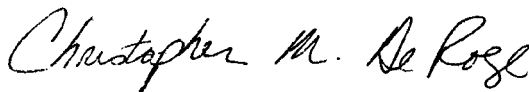
The preparation of this report was accomplished with the dedication and cooperation of many people. It is intended to provide complete and reliable information as a basis for making management decisions, as a means of determining compliance with legal provisions, and as a means for determining responsible stewardship of the funds of the System.

We would, therefore, like to express our appreciation for the assistance given by staff, advisors and many people who contributed to its preparation. We believe their combined efforts have produced a report that will enable the employer and plan members to better evaluate and understand the Michigan State Police Retirement System. Their cooperation contributes significantly to the success of MSPRS.

Sincerely,



Janet E. Phipps, Director  
Department of Management and Budget



Christopher M. DeRose, Director  
Office of Retirement Services

## Administrative Organization

### Retirement Board Members

Dr. James S. Neubecker, C.P.A, Chairperson  
Deputy Auditor General  
Statutory Member

D/Sgt. William E. Olney  
Representing Sergeants & Below  
Term Expires December 31, 2000

1st/Lt. Richard J. Darling  
Representing Lieutenant and Above  
Terms Expires December 31, 1998

James R. Snody, Jr.  
Retiree Member  
Term Expires December 31, 1999

Kenneth Harb  
General Public  
Term Expires December 31, 2000

Roy Pentilla  
Representing State Treasurer  
Statutory Member

Jan Miller  
Representing, State Employer  
Statutory Member

George M. Elworth  
Representing Attorney General  
Statutory Member

Capt. Gary Post  
Representing Director, Dept. of  
State Police  
Statutory Member

### Administrative Organization

**Department of Management and Budget  
Office of Retirement Services  
Third Floor, Wing A, General Office Building  
7150 Harris Drive  
P.O. Box 30171, Lansing, Michigan 48909-7671  
(517)322-5103  
1-800-381-5111**

### Advisors and Consultants

#### Actuary

The Segal Company  
Michael J. Karlin, F.S.A., M.A.A.A.  
New York, New York

#### Auditors

Thomas H. McTavish, C.P.A.  
Auditor General  
State of Michigan

#### Investment Manager and Custodian

Douglas B. Roberts  
State Treasurer  
State of Michigan

Andrews, Hooper & Pavlik P.L.C.  
Jeffrey J. Fineis, C.P.A.  
Okemos, Michigan

#### Legal Advisor

Frank J. Kelley  
Attorney General  
State of Michigan

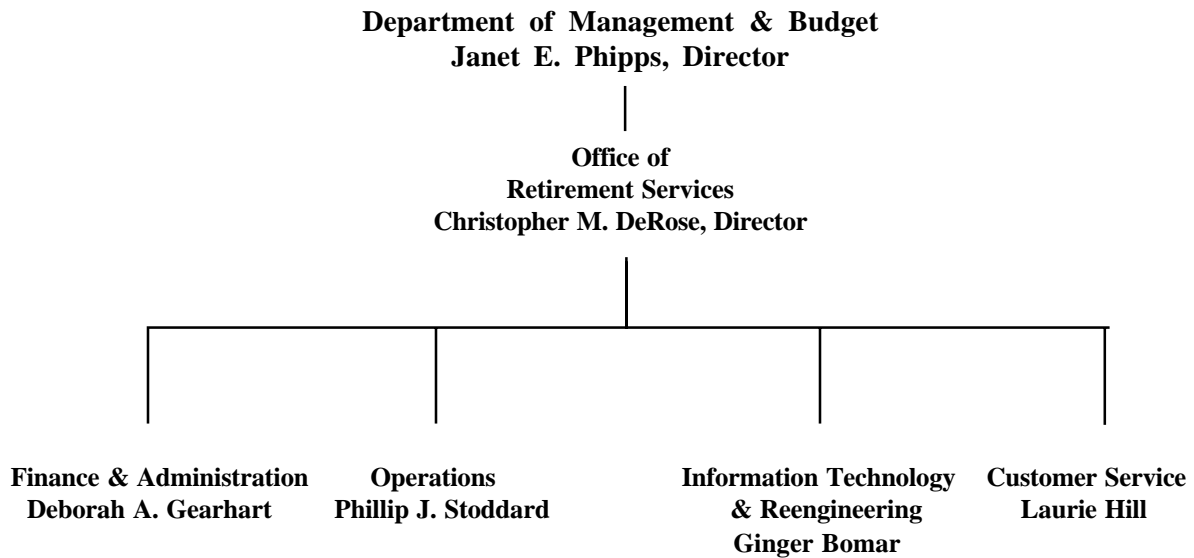
#### Investment Performance Measurement

Capital Resource Advisors  
Chicago, Illinois

# INTRODUCTORY SECTION

## Administrative Organization

### Organization Chart



# **INTRODUCTORY SECTION**

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# **FINANCIAL SECTION**

Independent Auditors' Report  
Statements of Plan Net Assets  
Statements of Changes in Plan Net Assets  
Notes to Financial Statements  
Required Supplementary Information  
Supporting Schedules

# Independent Auditors' Report



## ANDREWS HOOPER & PAVLIK P.L.C.

4295 Okemos Road, Suite 200 • Okemos, Michigan 48864

Ms. Janet Phipps, Director  
Department of Management and Budget  
Mr. Thomas H. McTavish, CPA  
Auditor General  
Michigan State Police  
Retirement System Board:

We have audited the accompanying statement of pension plan and postemployment healthcare plan net assets of the Michigan State Police Retirement System, as of September 30, 1998 and the related statements of changes in pension plan and postemployment healthcare plan net assets for the year then ended. These financial statements are the responsibility of the management of the Michigan State Police Retirement System. Our responsibility is to express an opinion on these financial statements based on our audit. The accompanying statement of pension plan and postemployment healthcare plan net assets of the Michigan State Police Retirement System, as of September 30, 1997, and the related statement of changes in pension plan and postemployment healthcare plan net assets for the year then ended were not audited by us and, accordingly, we do not express an opinion on them.

We conducted our audit in accordance with generally accepted auditing standards and *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit 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 audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to in the first paragraph present fairly, in all material respects, the financial position of the Michigan State Police Retirement System, as of September 30, 1998, and the changes in plan net assets for the year then ended in conformity with generally accepted accounting principles.

Our audit was conducted for the purpose of forming an opinion on the financial statements taken as a whole. The required supplementary information and supporting schedules listed in the table of contents are presented for the purpose of additional analysis and are not a required part of the basic financial statements. The required supplementary information and supporting schedules are the responsibility of the System's management. The Schedules of Funding Progress and Employer Contributions and related notes on pages 24 to 26 and the supporting schedules on pages 28 and 29 have been subjected to the auditing procedures applied in our audit of the basic financial statements and, in our opinion, are fairly stated in all material respects when considered in relation to the basic financial statements taken as a whole. The Year 2000 information on page 27 is not a required part of the basic financial statements but is supplementary information required by the Governmental Accounting Standards Board. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the supplementary information. However, we did not audit the information and do not express an opinion on it. In addition, we do not provide assurance that Michigan State Police Retirement System is or will become year 2000 compliant, that Michigan State Police Retirement System year 2000 remediation efforts will be successful in whole or in part, or that parties with which Michigan State Police Retirement System does business are or will become year 2000 compliant.

In accordance with *Government Auditing Standards*, we have also issued a report dated February 4, 1999 on our consideration of the Michigan State Police Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, and contracts.

*Andrews Hooper & Pavlik P.L.C.*

February 4, 1999

Okemos 517 487-5000 • Fax 517 487-9535 / Saginaw 517 497-5300 • Fax 517 497-5353

## Statement of Pension Plan and Postemployment Healthcare Plan Net Assets

	As of September 30, 1998			(unaudited) As of September 30, 1997		
	Pension Plan	Health Plan	Total	Pension Plan	Health Plan	Total
<b>Assets:</b>						
Cash	\$ 7,208,889	\$ 32,904	\$ 7,241,793	\$ 3,086,279	\$ 14,314	\$ 3,100,593
Receivables:						
Amounts due						
from employer	871,786	3,979	875,765	3,283,050	15,227	3,298,277
Interest and dividends	3,968,611	18,115	3,986,726	4,329,844	20,082	4,349,926
Sale of investments	684,214	3,123	687,337	1,710,116	7,932	1,718,048
Total receivables	5,524,611	25,217	5,549,828	9,323,010	43,241	9,366,251
Investments:						
Short-term investments	47,865,311	218,476	48,083,787	81,521,829	378,103	81,899,932
Bonds, notes mortgages and preferred stock	237,055,393	1,082,016	238,137,409	233,770,968	1,084,244	234,855,212
Common stock	476,971,444	2,177,090	479,148,534	435,049,378	2,017,786	437,067,164
Real estate	78,611,270	358,813	78,970,083	58,923,310	273,290	59,196,600
Alternative investments	85,927,799	392,209	86,320,008	60,465,903	280,445	60,746,348
International investments	39,642,333	180,943	39,823,276	49,347,523	228,877	49,576,400
Collateral on loaned securities	40,161,861	183,315	40,345,176	34,056,165	157,955	34,214,120
Total investments	1,006,235,411	4,592,862	1,010,828,273	953,135,076	4,420,700	957,555,776
Total assets	1,018,968,911	4,650,983	1,023,619,894	965,544,365	4,478,255	970,022,620
<b>Liabilities:</b>						
Warrants outstanding	(232,915)	(1,063)	(233,978)	(284,575)	(1,319)	(285,894)
Accounts payable and other accrued liabilities	(1,520,392)	(6,940)	(1,527,332)	(1,466,033)	(6,800)	(1,472,833)
Obligations under securities lending	(40,161,861)	(183,315)	(40,345,176)	(34,056,166)	(157,954)	(34,214,120)
Total liabilities	(41,915,168)	(191,318)	(42,106,486)	(35,806,774)	(166,073)	(35,972,847)
<b>Net Assets Held in Trust for</b>						
<b>Pension &amp; Healthcare Benefits*</b>	\$ 977,053,743	\$ 4,459,665	\$ 981,513,408	\$ 929,737,591	\$ 4,312,182	\$ 934,049,773

\*A schedule of funding progress is presented in the Required Supplementary Information of the Financial Section. The accompanying notes are an integral part of these financial statements.

## **Statement of Changes in Pension Plan and Postemployment Healthcare Plan Net Assets**

**For fiscal years ended September 30, 1998 and 1997**

	For year ended September 30, 1998			(unaudited) For year ended September 30, 1997		
	Pension Fund	Health Fund	Total	Pension Fund	Health Fund	Total
	<b>Additions:</b>					
Members contributions:						
Other		\$ 884,009	\$ 884,009	\$ 164	\$ 644,885	\$ 645,049
Military	\$ 38,727		38,727	67,750		67,750
Employer contributions	20,003,807	13,119,577	33,123,384	34,785,548	17,066,083	51,851,631
Investment income:						
Investment income	76,404,676		76,404,676	177,335,323		177,335,323
Securitized lending income	1,757,372		1,757,372	1,250,729		1,250,729
Less investment expenses	-		-	-		-
Real estate operating expenses	(65,891)		(65,891)	(32,091)		(32,091)
Securities lending expenses	(1,701,125)		(1,701,125)	(1,209,338)		(1,209,338)
Other investment expenses	(668,755)		(668,755)	(215,894)		(215,894)
Interest income					107,113	107,113
Miscellaneous income				50		50
<b>Total additions</b>	<u>95,768,811</u>	<u>14,003,586</u>	<u>109,772,397</u>	<u>211,982,241</u>	<u>17,818,081</u>	<u>229,800,322</u>
<b>Deductions:</b>						
Benefits paid to plan members and beneficiaries						
Retirement benefits	48,227,332		48,227,332	43,318,234		43,318,234
Health benefits		12,786,623	12,786,623		10,491,142	10,491,142
Dental/vision benefits		1,069,480	1,069,480		1,103,019	1,103,019
Administrative expenses	225,327		225,327	202,828		202,828
<b>Total deductions</b>	<u>48,452,659</u>	<u>13,856,103</u>	<u>62,308,762</u>	<u>43,521,062</u>	<u>11,594,161</u>	<u>55,115,223</u>
<b>Net Increase (Decrease)</b>	47,316,152	147,483	47,463,635	168,461,179	6,223,920	174,685,099
<b>Net Assets Held in Trust for Pension and Healthcare Benefits:</b>						
<b>Beginning of Year</b>	<u>929,737,591</u>	<u>4,312,182</u>	<u>934,049,773</u>	<u>761,276,412</u>	<u>(1,911,738)</u>	<u>759,364,674</u>
<b>End of Year *</b>	<u>\$ 977,053,743</u>	<u>\$ 4,459,665</u>	<u>\$ 981,513,408</u>	<u>\$ 929,737,591</u>	<u>\$ 4,312,182</u>	<u>\$ 934,049,773</u>

\* A schedule of funding progress is presented in the Required Supplementary Information of the Financial Section. The accompanying notes are an integral part of these financial statements.



# FINANCIAL SECTION

## Notes to General Purpose Financial Statements

### NOTE 1 - PLAN DESCRIPTION

#### ORGANIZATION

The Michigan State Police Retirement System (MSPRS) is a single employer, state-wide, defined benefit public employee retirement plan governed by the State of Michigan (State), originally created under Public Act 251 of 1935, recodified and currently operating under Public Act 182 of 1986. MSPRS was established by the State to provide retirement, survivor and disability benefits to Michigan State Police. MSPRS is a qualified trust fund under section 401(a) of the Internal Revenue Code.

MSPRS' financial statements are included as a pension trust fund in the combined financial statements of the State of Michigan.

MSPRS operates within the Michigan Department of Management and Budget, Office of Retirement Services. The Department Director appoints the Office Director who serves as Executive Secretary to the MSPRS' board, with whom the general oversight of the System resides. The State Treasurer serves as the investment officer and custodian for the System.

#### MEMBERSHIP

At September 30, 1998, and 1997, the System's membership consisted of the following:

Retirees and beneficiaries currently receiving benefits:	<b>1998</b>	<b>1997</b>
Regular benefits .....	1,695	1,589
Survivor benefits .....	319	298
Disability benefits .....	124	131
<b>Total</b> .....	<u>2,138</u>	<u>2,018</u>
Current employees:		
Vested .....	1,177	1,183
Non-vested .....	1,043	907
<b>Total</b> .....	<u>2,220</u>	<u>2,090</u>
Inactive employees entitled to benefits and not yet receiving them .....	21	43
<b>Total All Members</b> .....	<u>4,379</u>	<u>4,151</u>

Enrollment in the health care fund is voluntary. The number of participants is as follows:

Eligible participants .....	<b>1998</b>	<b>1997</b>
	<u>2,138</u>	<u>2,018</u>
Participants receiving benefits:		
Health .....	1,929	1,850
Dental .....	1,887	1,782
Vision .....	1,891	1,787

## Notes to General Purpose Financial Statements

### **BENEFIT PROVISIONS**

#### *Introduction*

Benefit provisions of the defined benefit pension plan are established by state statute, which may be amended. Public Act 182 of 1986, State Police Retirement Act, as amended, establishes eligibility and benefit provisions for the defined benefit pension plan. Retirement benefits are determined by final average compensation and years of service. Members are eligible to receive a monthly benefit when they meet certain age and service requirements. MSPRS also provides duty disability, non-duty disability and survivor benefits.

A member who leaves State Police employment may request a refund of his or her member contribution account. A refund cancels a former member's rights to future benefits and there is no provision for repaying the refund of contributions to restore the service represented by the refund.

#### *Regular Retirement*

The retirement benefit is available if a member retires after 25 years of credited service (employment). The retirement benefit equals 60% of a member's final average compensation and is payable monthly over the lifetime of a member. Final average compensation is the average annual salary for a member's last two years of service with the Department of State Police.

#### *Deferred Retirement*

Any member with 10 or more years of credited service who terminates covered employment but has not reached the age of 50 is a deferred member and is entitled to receive a monthly allowance upon reaching age 50, provided the member's accumulated contributions have not been refunded. The deferred benefit is equal to two percent of the final average compensation times the years of service credit.

#### *Non-Duty Disability Benefit*

A member with 10 or more years of credited service who becomes totally and permanently disabled not due to performing duties as an employee of the State Police is eligible for a non-duty disability pension. The non-duty disability benefit is 2.4% of the final average compensation times years of credited service (but not more than 25 years).

#### *Duty Disability Benefit*

A member who becomes totally and permanently disabled from performing duties as a State Police Officer is eligible for a duty disability pension. The amount, payable monthly, is equal to 60% of the final average compensation.

#### *Survivor Benefit*

Upon the death of a member who completed at least 10 years of service, the surviving spouse receives a benefit based on 2.4% of the final average compensation for each year of credited service. If there is no spouse, surviving children are entitled to equally share the benefit until age 18. If death occurs in the line of duty, the surviving spouse receives a benefit of 60% of the final average compensation. Children receive \$100 each month until age 18. A \$1,500 funeral expense is also authorized by statute.

Effective October 1, 1996, the monthly pension paid to beneficiaries was increased 10% if certain requirements were met. This was a one-time increase.

Each October 1, the benefit increases 2% (not to exceed \$500). This non-compounding increase is paid to beneficiaries who have been receiving benefits for 12 months.

# FINANCIAL SECTION

## Notes to General Purpose Financial Statements

### *Post Retirement Adjustments*

Effective October 1, 1996, the monthly pension was increased 10% if certain requirements were met. This was a one-time increase.

Each October 1, the benefits of all pension recipients increase 2% (not to exceed \$500). This non-compounding increase is paid to persons who have been retired 12 months.

### *Contributions*

Member Contributions — Members currently participate in MSPRS on a noncontributory basis. Under certain circumstances, members may contribute to the System for the purchase of creditable service, such as military, maternity or paternity leave, Peace Corps or VISTA service. If a member terminates MSPRS covered employment before a retirement benefit is payable, the member's contribution and interest on deposit are refunded. If the member dies before being vested, the member's contribution and interest are refunded to the designated beneficiaries.

Employer Contributions — The statute requires that the employer contribute to finance the benefits of plan members. These employer contributions are determined annually by the System's actuary and are based upon level-percent-of-payroll funding principles so that the contribution rates do not have to increase over time. A chart showing the employer contribution rates is included on the Schedule of Revenue by Source in the Statistical Section.

### *Other Post Employment Benefits*

Under the State Police Retirement Act, all retirees have the option of continuing health, dental and vision coverage. Retirees with this coverage contribute 5% and 10% of the monthly premium amount for the health, dental and vision coverage, respectively. The State funds 95% of the health and 90% of the dental and vision insurance. The payroll contribution rate was 10.84% and 14.89% for 1998 and 1997 respectively.

Retirees are provided with life insurance coverage equal to 25% of the active life insurance coverage, \$1,000 for spouse and \$1,000 for each dependent under age 23. Premiums are fully paid by the State.

## **NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

### *Basis of Accounting and Presentation*

MSPRS' financial statements are prepared using the accrual basis of accounting. Contributions from the State are recognized as revenue in the period in which employees provide service. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

### *Reserves*

Public Act 182 of 1986, as amended, created the Reserve for Employees' Contributions, Reserve for Retired Benefit Payments, Reserve for Employer Contributions, Reserve for Undistributed Investment Income, and Reserve for Health Benefits and Dental and Vision Benefits. The financial transactions of the plan are recorded in these accounts as required by Public Act 182 of 1986, as amended.

Reserve for Employees' Contributions — Members do not contribute to this fund except to purchase eligible service credit. This fund represents active member contributions and interest less amounts transferred to the Pension Reserve for regular

## Notes to General Purpose Financial Statements

and disability retirement, amounts refunded to terminated members, and unclaimed amounts transferred to the income account. At September 30, 1998, and 1997, the balance in this account was \$614 thousand and \$847 thousand respectively.

Reserve for Retired Benefit Payments — This represents the reserves for payment of future retirement benefits to persons already on the retirement rolls. At retirement, a member's accumulated contributions plus interest are transferred into this reserve from the Reserve for Employees' Contributions. Monthly benefits, which are paid to the retirees, reduce this reserve. At the end of each fiscal year, an amount is transferred from the Reserve for Employer Contributions to bring the balance into balance with the actuarial present value of retirement allowances. At September 30, 1998, and 1997, the balance in this account was \$522 million and \$528 million respectively.

Reserve for Employer Contributions — All employer contributions are credited to this reserve. Interest from the Reserve for Undistributed Investment Income is credited annually. Amounts are transferred annually from this reserve to the Reserve for Retired Benefit Payments to fund that reserve. At September 30, 1998, and 1997, the balance in this account was \$246 million and \$209 million respectively.

Reserve for Undistributed Investment Income — The reserve is credited with all investment earnings and changes in fair value of assets. Interest is transferred annually to the other reserves. Administrative expenses are paid from this reserve account. The legislature appropriates the funds necessary to defray and cover the administration of the plan. At September 30, 1998, and 1997, the balance of this reserve was \$209 million and \$192 million respectively.

Reserve for Health Related Benefits — This reserve is credited with employer contributions for retirees' health benefits. From this reserve, the retirement system pays 95% of the premiums for hospitalization and medical coverage insurance and 90% of the monthly premium for dental and vision coverage insurance. At September 30, 1998, and 1997, the balance in this account was \$4.5 million and a \$4.3 million respectively.

### ***Fair Value of Investments***

Plan investments are reported at fair value, except for short-term investments. Short-term investments are carried at cost, which approximates fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Corporate bonds not traded on a national or international exchange are based on equivalent values of comparable securities with similar yield and risk. Real estate debt is valued on the basis of future principal and interest payments and is discounted at prevailing interest rates for similar instruments. The fair value of real estate investments is based on independent appraisals. Other investments that do not have an established market are recorded at estimated fair value.

### ***Reporting Entity***

MSPRS is a pension trust fund of the State of Michigan. As such, MSPRS is considered part of the State and is included in the State's comprehensive annual financial report as a pension trust fund. MSPRS and the MSPRS' board are not financially accountable for any other entities or other organizations. Accordingly, MSPRS is the only entity included in this financial report.

### ***Investment Income***

Dividend income is recognized based on the ex-dividend date and interest income is recognized on the accrual basis as earned. Fair value changes are recorded as investment income or loss. Purchases and sales of investments are recorded as of the trade date (the date upon which the transaction is initiated), except for purchase and sale of mortgages, real estate, and alternative investments which are recorded as of the settlement date (the date upon which the transaction is ultimately completed). The effect of recording such transactions as of the settlement date does not materially affect the financial statements.

# FINANCIAL SECTION

## Notes to General Purpose Financial Statements

### *Property and Equipment*

Office space is leased from the State on a year to year basis. Office equipment is capitalized if the value exceeds \$5,000. These assets are recorded at cost and are reported net of depreciation in the Statement of Plan Net Assets. Such assets are depreciated on a straight line basis over 10 years. MSPRS does not have equipment that falls within these parameters.

### *Related Party Transactions*

Leases and Services — The Retirement System leases operating space and purchases certain administrative, data processing, legal and investment services from the State. The space and services are not otherwise available by competitive bid. The following summarizes costs incurred by MSPRS for such services.

	<u>1998</u>	<u>1997</u>
Building Rentals .....	\$3,870	\$ 14,520
Data processing services.....	17,228	7,710
Legal .....	10,368	19,740
Investment .....	150,248	184,790

Common Cash — The cash account includes \$7,241,793 and \$3,100,593, on September 30, 1998, and 1997, respectively, which represents funds deposited in a common cash investment pool maintained for various State operating funds. The participating funds in the common cash pool earn interest at various rates depending upon prevailing short-term interest rates. Earnings from these activities amounted to \$383,894 and \$262,330 for the years ended September 30, 1998, and 1997, respectively.

### *Reclassification of Prior Year Amounts*

Certain prior year amounts have been reclassified or restated to conform with the current year presentation.

## NOTE 3 - CONTRIBUTIONS

Members currently participate in MSPRS on a non-contributory basis. Under certain circumstances, members may contribute to the System for the purchase of creditable service, such as military service or maternity leave. The State is required by Public Act 182 of 1986 as amended, to contribute amounts necessary to finance the benefits of its employees. Contribution provisions are specified by state statute and may be amended only by action of the state legislature.

Periodic employer contributions to MSPRS are determined on an actuarial basis using the entry age normal actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the actuarial valuation is allocated on a level basis over the service of the individual between entry age and assumed exit age. The portion of this cost allocated to the current valuation year is called the normal cost. The remainder is called the actuarial accrued liability. Normal cost is funded on a current basis. The unfunded actuarial accrued liability is funded over a 38-year period for the 1997-98 fiscal year.

Actual employer contributions for retirement benefits were \$20,003,807 and \$34,785,548 representing 18.5% and 31.6% of annual covered payroll, for the years ended September 30, 1998, and 1997, respectively. Required employer contributions for pensions included:

1. \$25,121,396 and \$24,334,421 for fiscal years 1998 and 1997, respectively, for normal cost of pensions representing 22.8% and 22.8%, respectively, of annual covered payroll.
2. (\$2,121,493) and \$5,523,207 for fiscal years 1998 and 1997, respectively, for amortization of (overfunded)/unfunded actuarial liability, representing (1.93%) and 5.2%, respectively, of annual covered payroll.

## Notes to General Purpose Financial Statements

### NOTE 4 - INVESTMENTS

#### *Investment Authority*

Under Public Act 380 of 1965, as amended, the authority for the purchase and the sale of investments resides with the State Treasurer. Investments are made subject to the Michigan Public Pension Investment Act, Public Act 314 of 1965, as amended. The Michigan Public Pension Investment Act authorizes, with certain restrictions, the investment of pension fund assets in stock, corporate and government bonds and notes, mortgages, real estate, and certain short term and alternative investments. Investments must be made for the exclusive purposes of providing benefits to active members, retired members and beneficiaries, and of defraying the expenses of investing the assets.

Under Public Act 314 of 1965, as amended, the State Treasurer may invest up to 5% of the System's assets in alternative investments and up to 15% of the System's assets in investments not otherwise qualified under the act. Alternative investments include limited partnerships and distributions from these partnerships in the form of bonds, common stock and preferred stock.

#### *Derivatives*

The State Treasurer does not employ the use of derivatives in the investment of the Common Cash or the investment of trust funds other than the pension trust funds.

Derivatives are used for a small amount of the pension trust fund portfolios. However, derivatives are not used for speculation and they are not used to leverage the investment portfolios. Less than 6% of the total pension trust fund's portfolio has been invested from time to time in future contracts, collateralized mortgages and swap agreements. Swap agreements represent the largest category of derivatives used and represented 4.1% of the total portfolio at market values.

To further diversify the pension fund's portfolio into international equities, the State Treasurer has entered into swap agreements with investment grade counterparties which are tied to stock market indices in eighteen foreign countries. The notional amounts of the swap agreements at September 30, 1998, and 1997, were \$40.62 million and \$41.23 million, respectively. One half of the notional amount is hedged against foreign currency fluctuations. The swap agreements provide that the retirement system will pay quarterly, over the term of the swap agreements, interest indexed to the three month London InterBank Offer Rate (LIBOR), adjusted for an interest rate spread, on the notional amount stated in the agreements. At the maturity of the swap agreements the pension fund will either receive the increase in the value of the international equity indices from the level of the indices at the inception of the agreements, or pay the decrease in the value of the indices. Swap agreement maturities range from October 1998 to December 2001.

U. S. domestic LIBOR based floating rate notes were purchased in the open market to correspond with the notional amount of the swap agreements. The State Treasurer maintains custody and control of these notes.

The value of these synthetic equity structures is a combination of the value of the swap agreements and the value of the notes. The book value represents the cost of the notes. The current value represents the current value of the notes and the change in value of the underlying indices from the inception of the swap agreements. The current value is used as a representation of the fair value based upon the intention to hold all swap agreements until maturity. Since the inception of the international equity investment program, over \$11.6 million of gains on international equity exposure and excess interest received have been realized. The unrealized loss of \$1.6 million at September 30, 1998, reflects the decrease in international indices and higher notional cost levels following realization of gains in the months prior to September.

# FINANCIAL SECTION

## Notes to General Purpose Financial Statements

The respective September 30, 1998 and 1997 values are as follows:

	<u>Notional Value</u>	<u>Book Value</u>	<u>Current Value</u>
9/30/98 (dollars in millions)	\$40.62	\$41.43	\$39.82
9/30/97 (dollars in millions)	41.23	40.83	49.58

### *Investments Exceeding 5% of Plan Net Assets*

MSPRS did not hold an individual investment (other than U.S. Government securities) that exceeded 5% of net assets available for benefits at September 30, 1998 or 1997.

### *Securities Lending*

State statutes do not prohibit the retirement system from participating in securities lending transactions, and the retirement system has, via a Securities Lending Authorization Agreement, authorized the agent bank to lend its securities to broker-dealers and banks pursuant to a form of loan agreement.

During the fiscal year, the agent bank lent, at the direction of the retirement system, the retirement system's securities and received cash (United States and foreign currency), securities issued or guaranteed by the United States government, sovereign debt rated A or better, convertible bonds, and irrevocable bank letters of credit issued by a person other than the borrower or an affiliate of the borrower as collateral. The agent bank did not have the ability to pledge or sell collateral securities delivered absent a borrower default. Borrowers were required to deliver collateral for each loan equal to: (i) in the case of loaned securities denominated in United States dollars or whose primary trading market was located in the United States or sovereign debt issued by foreign governments, 102% of the market value of the loaned securities; and (ii) in the case of loaned securities not denominated in United States dollars or whose primary trading market was not located in the United States, 105% of the market value of the loaned securities.

The retirement system did not impose any restrictions during the fiscal year on the amount of the loans that the agent bank made on its behalf. There were no failures by any borrowers to return loaned securities or pay distributions thereon during the fiscal year. Moreover, there were no losses during the fiscal year resulting from a default of the borrowers or the agent bank.

During the fiscal year, the retirement system and the borrowers maintained the right to terminate all securities lending transactions on demand. The cash collateral received on such loan was invested, together with the cash collateral of other qualified tax-exempt plan lenders, in a collective investment pool. As of September 30, 1998, such investment pool had an average duration of 64 days and an average weighted maturity of 504 days. Because the loans were terminable at will, their duration did not generally match the duration of the investments made with cash collateral. On September 30, 1998, the retirement system had no credit risk exposure to borrowers. The collateral held and the market value of securities on loan for the retirement system as of September 30, 1998, were \$41,736,993 and \$40,136,624 respectively. Gross income from security lending for the fiscal year was \$1,757,372. Expenses associated with this income amounted to \$1,682,389 for the borrower's rebate and \$18,736 for fees paid to the agent.

### *Categories of Investment Risk*

Investments made by the fund, including repurchase agreements and information concerning reverse repurchase agreements, are summarized below. The investments that are represented by specific identifiable investment securities are classified as to credit risk in three categories.

# FINANCIAL SECTION

## Notes to General Purpose Financial Statements

Category 1 includes investments that are insured, registered, or held by MSPRS or its agent in MSPRS' name. Category 2 includes uninsured and unregistered investments that are held by the counterparty's trust department or agent in MSPRS' name. Category 3 includes uninsured and unregistered investments that are held by the counterparty, its trust department, or agent, but not in MSPRS' name.

At September 30, 1998, all investments of the pension trust fund were classified as Category 1, except for certain investments that were not categorized.

The following table summarizes the investments:

<b><u>Category 1</u></b>	<b><u>1998</u></b>	<b><u>1997</u></b>
Prime Commercial Paper	\$ 35,497,888	\$ 65,680,851
Short Term Note	12,585,899	16,219,082
Government Securities	116,123,706	121,223,813
Corporate Bonds & Notes	99,127,024	89,334,974
Convertible Bonds	0	445,147
Preferred Stock	25,283	10,890
Equities	464,167,265	421,676,293
Real Estate	7,205,128	6,538,258
Alternative Investments	3,214,865	2,960,611
Derivatives (International)	39,823,276	49,576,400
<b>Total Category 1</b>	<b>\$ 764,793,205</b>	<b>\$ 773,666,319</b>
<b><u>Non-Categorized</u></b>		
Private Placements	10,179,805	\$ 3,335,090
Mortgages	1,861,461	2,638,642
Real Estate	71,764,955	52,658,342
Alternative Investments	83,105,143	57,785,737
Cash Collateral	40,345,176	34,214,119
Securities on Loan:		
Government Securities	21,793,119	17,744,535
Corporate Bonds & Notes	2,004,140	122,125
Equities	14,981,269	15,390,867
<b>Total Non-Categorized</b>	<b>\$ 246,035,068</b>	<b>\$ 183,889,457</b>
<b>Grand Total</b>	<b>\$ 1,010,828,273</b>	<b>\$ 957,555,776</b>

### NOTE 5 - COMMITMENTS AND CONTINGENCIES

Under the Administrative Procedures Act, members may appeal a decision by the Board. Once the administrative procedure has been exhausted, the decision may be appealed in Michigan's court system. Various cases that have exhausted the administrative procedures have been appealed in the court system. These cases are in the normal course of business and the System does not anticipate any material loss as a result of the contingent liabilities.



# FINANCIAL SECTION

## Required Supplementary Information

### Schedule of Funding Progress

Expressing the net assets available for benefits as a percentage of the actuarial accrued liability provides one indication of MSPRS' funding status. Analysis of this percentage over time indicates whether the System is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the system. Trends in unfunded actuarial accrued liability and annual covered payroll are both affected by inflation. Expressing the unfunded or overfunded actuarial accrued liability as a percentage of annual covered payroll approximately adjusts for the effects of inflation and aids analysis of progress made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the system.

#### Retirement Benefits

Valuation Date Sept 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability <sup>1</sup> (AAL) Entry Age (b)	Unfunded (Overfunded) Accrued Liability (UAAL) (b-a)	Funded Ratio AAL (a/b)	Covered Payroll <sup>(2)</sup> (c)	UAAL as a % of Covered Payroll (b-a)/c
1989	425,015,900	468,935,300	43,919,400	90.6	86,187,000	51.0
1990	442,932,818	506,320,250	63,387,432	87.5	88,885,729	71.3
1990 <sup>2</sup>	442,932,818	541,446,390	98,513,572	81.8	88,885,729	110.8
1991	468,303,512	595,180,034	126,876,522	78.7	91,626,979	138.5
1992	488,711,130	632,040,727	143,329,597	77.3	89,899,102	159.4
1992 <sup>3</sup>	488,711,130	644,370,241	155,659,111	75.8	89,899,102	173.1
1993	526,192,904	680,511,499	154,318,595	77.3	86,791,793	177.8
1993 <sup>2</sup>	530,936,296	680,511,499	149,575,203	78.0	86,791,793	172.3
1994	566,541,199	709,298,262	142,757,063	79.9	88,623,068	161.1
1994 <sup>4</sup>	566,541,199	711,840,905	145,299,706	79.6	88,623,068	164.0
1995	622,625,951	798,820,493	176,194,542	77.9	104,500,048	168.6
1996	697,922,641	823,461,255	125,538,614	84.8	106,826,290	117.5
1997	787,239,852	880,325,872	93,086,020	89.4	110,085,690	84.6
1997 <sup>3</sup>	928,714,323	880,325,872	(48,388,451)	105.5	110,085,960	(44.0)
1997 <sup>5</sup>	928,714,323	876,759,081	(51,955,242)	105.9	110,085,960	(47.2)
1998	974,364,628	943,724,818	(30,639,810)	103.2	108,183,040	(28.3)

<sup>1</sup> Based on entry age normal actuarial method.

<sup>2</sup> Benefits amended.

<sup>3</sup> Change in asset valuation method.

<sup>4</sup> Assumption change.

<sup>5</sup> Change in inflation.

**Required Supplementary Information  
(Continued)**

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**Schedule of Employer Contributions**

<b>Fiscal Year Ending Sept. 30</b>	<b>Annual Required Contribution (ARC)</b>	<b>Actual Contributions</b>	<b>Percentage Contributed</b>
1988	\$16,387,658	\$ 16,182,984	98.7 %
1989	17,106,748	16,182,984	94.6
1990	18,214,516	17,103,431	93.9
1991	23,045,761	22,146,976	96.1
1992	23,277,902	20,554,387	88.3
1993	23,909,930	20,371,260	85.2
1994	23,768,031	23,363,974	98.3
1995	24,353,043	25,034,928	102.8
1995 <sup>(1)</sup>	27,916,677	25,041,259	89.7
1996	35,149,438	35,993,026	102.4
1997	30,821,696	34,785,548	112.9
1998	20,257,237	20,003,807	98.7

<sup>(1)</sup> Changes in actuarial assumptions.

# FINANCIAL SECTION

## Notes to Required Supplemental Information

### NOTE A - DESCRIPTION

Ten year historical trend information designed to provide information about MSPRS' progress made in accumulating sufficient assets to pay benefits when due is presented in the preceding schedules. Other ten year historical trend information related to the pension plan is presented in the Statistical and Actuarial Sections of the report. This information is presented to enable the reader to assess the progress made by MSPRS in accumulating sufficient assets to pay pension benefits as they become due.

The comparability of trend information is affected by changes in actuarial assumptions, benefit provisions, actuarial funding methods, accounting policies, and other changes. Those changes usually affect trends in contribution requirements and in ratios that use the pension benefit obligation as a factor.

The Schedule of Funding Progress and Schedule of Employer Contributions are reported as historical trend information. The Schedule of Funding Progress is presented to measure the progress being made to accumulate sufficient assets to pay benefits when due. The Schedule of Employer Contributions is presented to show the responsibility of the Employer in meeting the actuarial requirements to maintain the System on a sound financial basis.

### NOTE B - SUMMARY OF ACTUARIAL ASSUMPTIONS

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows.

Valuation Date	09/30/98
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percent Closed
Remaining Amortization Period	38 Years
Asset Valuation Method	5-Year Smoothed Market
Actuarial Assumptions:	
Investment Rate of Return	8%
Projected Salary Increases	3 - 14%
Includes Inflation at	3% for one year, 4% thereafter
Cost-of-Living Adjustments	2% annual non-compounded with maximum annual increase of \$500

## **Required Supplementary Information (Continued)**

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### **YEAR 2000**

In October 1998, the Governmental Accounting Standards Board (GASB) issued Technical Bulletin 98-1, entitled *Disclosures about Year 2000 Issues*. The provisions of the GASB technical bulletin, as amended by Technical Bulletin 99-1, require the System to make disclosures about its readiness in addressing year 2000 issues for its computer systems and other electronic equipment.

The year 2000 issue is the result of shortcomings in the manner in which "year" information is stored and interpreted by many electronic data processing systems and other electronic equipment. Operations may be adversely affected if critical systems and equipment are not made year 2000 compliant. The year 2000 issue will impact not only internal operations, but also interactions with external parties such as other governmental entities and critical vendors. To address the year 2000 issues, the State established the Year 2000 Project Office within the Department of Management and Budget (DMB). The Year 2000 Project Office's mission is to lead, support, and facilitate achievement of year 2000 compliance throughout the state's executive branch to ensure uninterrupted service to Michigan's citizens. The Year 2000 Project Office is monitoring year 2000 compliance efforts at the various agencies and is providing assistance and assigning resources to accelerate compliance for all mission critical systems and equipment. Additional disclosure regarding the status of statewide systems year 2000 compliance efforts upon which MSPRS is dependent can be found in the State of Michigan's Comprehensive Annual Financial Report.

MSPRS' in conjunction with the Year 2000 Project Office, DMB, is subjecting those systems and equipment to the following stages of work to address year 2000 issues:

- Awareness stage — Establishing a budget and project plan for dealing with the year 2000 issue.
- Assessment stage — Identifying the systems and components for year 2000 compliance.
- Remediation stage — Making changes to systems and equipment.
- Validation/testing stage — Validating and testing the changes that were made during the remediation stage.

MSPRS has identified the computer systems and electronic equipment that are critical to its operations, and the following is a summary of progress towards achieving year 2000 compliance:

#### **Internal Systems:**

Common Pension Payroll -- MSPRS has completed the assessment, remediation, validation and testing stages of these systems. In addition, in 1999 there will be additional testing of these systems and on other non-critical systems.

As of year-end, MSPRS has a commitment to spend approximately \$4 thousand to make critical computer systems and equipment year 2000 compliant.

#### **External Factors:**

There can be no assurance that organizations and governmental agencies with which MSPRS interacts, including banks, vendors, customers, state and federal governments will be year 2000 compliant. With regard to these external organizations, MSPRS is currently in the process of obtaining assurances that their systems will be ready for the year 2000. If issues are identified, action plans will be instituted as necessary. However, even if the systems of both are compliant in a timely manner, problems could arise with communications between systems if compliance is achieved through inconsistent approaches or methodologies.

Because of the unprecedented nature of the year 2000 issue, its effects and the success of related remediation efforts will not be fully determinable until the year 2000 and thereafter. Management cannot assure that MSPRS is or will be year 2000 ready, or that MSPRS' remediation efforts have been successful in whole or in part. However, management believes that it has instituted a plan to minimize the impact that the year 2000 issue may have on critical operations.

# FINANCIAL SECTION

## Supporting Schedules

### Comparative Summary Schedule of Pension Plan Administrative Expenses for the Years Ended September 30, 1998 and 1997

	<u>1998</u>	<u>1997</u>
<b>Personnel Service:</b>		
Staff salaries	\$ 40,228	\$ 43,350
Retirement and social security	7,646	9,479
Other fringe benefits	5,047	3,853
	<hr/>	<hr/>
Total	52,921	56,682
	<hr/>	<hr/>
<b>Professional Services:</b>		
Actuarial	60,620	37,008
Accounting, records management and mail	13,862	10,119
Data processing	17,228	7,710
Legal	10,368	19,740
Audit	23,200	25,200
Medical	6,815	1,813
	<hr/>	<hr/>
Total	132,093	101,590
	<hr/>	<hr/>
<b>Building and Equipment:</b>		
Building rentals	3,870	14,520
Equipment purchase, maintenance, and rentals	1,101	0
	<hr/>	<hr/>
Total	4,971	14,520
	<hr/>	<hr/>
<b>Miscellaneous:</b>		
Customer Information Center	1,329	881
Office administrative support	2,487	2,502
Department administrative support	751	8,716
Travel and board meetings	601	227
Postage, telephone and other	30,174	17,710
	<hr/>	<hr/>
Total	35,342	30,036
	<hr/>	<hr/>
<b>Total Administrative Expenses</b>	<u>\$ 225,327</u>	<u>\$ 202,828</u>

**Supporting Schedules (continued)**

**Schedule of Investment Expenses**

	<u>1998</u>	<u>1997</u>
Securities Lending Expense	\$1,701,125	\$1,209,338
Real Estate Operating Expense	65,891	32,091
Other Investment Expenses	<u>668,755</u>	<u>215,894</u>
<b>Total Investment Expenses</b>	<u><u>\$2,435,771</u></u>	<u><u>\$1,457,323</u></u>

**Schedule of Payments to Consultants**

	<u>1998</u>	<u>1997</u>
Auditor General	\$ 23,200	\$ 25,200
Attorney General	10,368	19,740
Actuary	60,620	37,008
<b>Total Payment to Consultants</b>	<u><u>\$ 94,188</u></u>	<u><u>\$ 81,948</u></u>

# FINANCIAL SECTION

## Supporting Schedules (continued)

### Detail of Changes in Plan Net Assets (Pension and Postemployment Healthcare Benefits)

	For Year Ended September 30, 1998					Total
	Employee Contributions	Employer's Contributions	Retired Benefits Payments	Undistributed Investment Income	Health Related Benefits	
<b>Additions:</b>						
Members contributions:						
Other					\$ 884,009	\$ 884,009
Military	\$ 38,727					38,727
Employer contributions		\$ 20,003,807			13,119,577	33,123,384
Investment income:						
Investment income				\$ 76,404,676		76,404,676
Securities lending income				1,757,372		1,757,372
Less investment expenses						
Real estate operating expenses				(65,891)		(65,891)
Securities lending expenses				(1,701,125)		(1,701,125)
Other investment expenses				(668,755)		(668,755)
Interest Income						
Miscellaneous income						
<b>Total additions</b>	<u>38,727</u>	<u>20,003,807</u>		<u>75,726,277</u>	<u>14,003,586</u>	<u>109,772,397</u>
<b>Deductions:</b>						
Benefits paid to plan members and beneficiaries						
Retirement benefits			\$ 48,227,332			48,227,332
Health benefits					12,786,623	12,786,623
Dental/vision benefits					1,069,480	1,069,480
Administrative expenses				225,327		225,327
<b>Total deductions</b>			<u>48,227,332</u>	<u>225,327</u>	<u>13,856,103</u>	<u>62,308,762</u>
<b>Net Increase (Decrease)</b>	38,727	20,003,807	(48,227,332)	75,500,950	147,483	47,463,635
<b>Other Changes in Net Assets:</b>						
Interest allocation	23,446	16,729,867	42,201,480	(58,954,793)		
Transfers upon retirements	(295,484)		295,484			
Transfers of employer shares						
<b>Total other changes in net assets</b>	<u>(272,038)</u>	<u>16,729,867</u>	<u>42,496,964</u>	<u>(58,954,793)</u>	<u>-</u>	<u>-</u>
<b>Net Increase (Decrease) After Other Changes</b>	(233,311)	36,733,674	(5,730,368)	16,546,157	147,483	47,463,635
<b>Net Assets Held in Trust for Pension and Healthcare Benefits:</b>						
<b>Beginning of Year</b>	<u>847,359</u>	<u>209,123,340</u>	<u>527,518,500</u>	<u>192,248,392</u>	<u>4,312,182</u>	<u>934,049,773</u>
<b>End of Year</b>	<u>\$ 614,048</u>	<u>\$ 245,857,014</u>	<u>\$ 521,788,132</u>	<u>\$ 208,794,549</u>	<u>\$ 4,459,665</u>	<u>\$ 981,513,408</u>

## Supporting Schedules (continued)

### Detail of Changes in Plan Net Assets (Pension and Postemployment Healthcare Benefits)

	For Year Ended September 30, 1997 (Unaudited)					Total
	Employee Contributions	Employer's Contributions	Retired Benefits Payments	Undistributed Investment Income	Health Related Benefits	
<b>Additions:</b>						
Members contributions:						
Other	\$ 164				\$ 644,885	\$ 645,049
Military	67,750					67,750
Employer contributions		\$ 34,785,548			17,066,083	51,851,631
Investment income:						
Investment income				\$ 177,335,323		177,335,323
Securities lending income				1,250,729		1,250,729
Less investment expenses						
Real estate operating expenses				(32,091)		(32,091)
Securities lending expenses				(1,209,338)		(1,209,338)
Other investment expenses				(215,894)		(215,894)
Interest Income					107,113	107,113
Miscellaneous income				50		50
<b>Total additions</b>	<u>67,914</u>	<u>34,785,548</u>		<u>177,128,779</u>	<u>17,818,081</u>	<u>229,800,322</u>
<b>Deductions:</b>						
Benefits paid to plan members and beneficiaries						
Retirement benefits			\$ 43,318,234			43,318,234
Health benefits					10,491,142	10,491,142
Dental/vision benefits					1,103,019	1,103,019
Administrative expenses					202,828	202,828
<b>Total deductions</b>			<u>43,318,234</u>	<u>202,828</u>	<u>11,594,161</u>	<u>55,115,223</u>
<b>Net Increase (Decrease)</b>	67,914	34,785,548	(43,318,234)	176,925,951	6,223,920	174,685,099
<b>Other Changes in Net Assets:</b>						
Interest allocation	32,401	11,712,311	35,119,682	(46,864,394)		
Transfers upon retirements	(436,314)		436,314			
Transfers of employer shares		(42,515,026)	42,515,026			
<b>Total other changes in net assets</b>	<u>(403,913)</u>	<u>(30,802,715)</u>	<u>78,071,022</u>	<u>(46,864,394)</u>		
<b>Net Increase (Decrease) After Other Changes</b>	(335,999)	3,982,833	34,752,788	130,061,557	6,223,920	174,685,099
<b>Net Assets Held in Trust for Pension and Healthcare Benefits:</b>						
<b>Beginning of Year</b>	<u>1,183,358</u>	<u>205,140,507</u>	<u>492,765,712</u>	<u>62,186,835</u>	<u>(1,911,738)</u>	<u>759,364,674</u>
<b>End of Year</b>	<u>\$ 847,359</u>	<u>\$ 209,123,340</u>	<u>\$ 527,518,500</u>	<u>\$ 192,248,392</u>	<u>\$ 4,312,182</u>	<u>\$ 934,049,773</u>



# **FINANCIAL SECTION**

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# INVESTMENT SECTION

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# INVESTMENT SECTION

## Report on Investment Activity

### INTRODUCTION

The State Treasurer reports quarterly the investment activity to the Investment Advisory Committee (IAC) which reviews the investments, goals and objectives of the retirement funds and may submit recommendations regarding them to the State Treasurer. The Investment Advisory Committee may also, by a majority vote, direct the State Treasurer to dispose of any holdings which, in the committee's judgement, are not suitable for the funds involved, and may, by unanimous vote, direct the State Treasurer to make specific investments.

The IAC was created by Act 380 of the Public Acts of 1965. The three public members of the five-member committee are appointed by the Governor with the advice and consent of the Senate for three-year terms. The Director of the Department of Consumer and Industry Services and the Director of the Department of Management and Budget are ex-officio members. The members of the IAC are as follows: Mr. Samuel Valenti III (public member), Farris W. Womack (public member), Jerry L. Tubergen (public member), Kathleen M. Wilbur (ex-officio member), and Janet E. Phipps (ex-officio member). The public members serve without pay, but are paid actual and necessary travel and other expenses.

### INVESTMENT POLICY & GOAL

The primary function of the MSPRS is to provide retirement, survivor and disability benefits to its members. The State Treasurer is the sole investment fiduciary and custodian of the System's investments pursuant to state law. The primary investment objective is to maximize the rate of return on the total investment portfolio, consistent with a high degree of prudence and sufficient diversity to eliminate inordinate risks and to meet the actuarial assumption for the investment rate of return, at a reasonable cost achieved by cultivating a motivated team of dedicated professionals. The goals of the fund are:

1. To outperform the actuarial assumption over the long-term.
2. To produce competitive results at a low cost.
3. To achieve a delicate balance between risk and return.
4. To perform in the top half of the Capital Resource Advisors public plan universe.
5. To exceed individual asset class benchmarks over the long-term.

The strategy for achieving these goals is carried out by investing the assets of the system according to a five-year asset allocation model which currently has seven different asset classes which provides for a well diversified portfolio.

Investment Category	Asset Allocation	
	As of 9/30/98 Actual %	Target %
Mortgages	0.2%	0.0%
International Equity	4.1%	7.5%
Real Estate	8.1%	8.5%
Alternative Investments	8.8%	7.5%
Short Term Investments	5.6%	1.5%
Fixed Income	24.2%	25.5%
Domestic Equity	49.0%	49.5%
TOTAL	100.0%	100.0%

## Report on Investment Activity

### STATE LAW

Pursuant to State Law (Section 91 of Act No. 380 of the Public Acts of 1965, as amended), the State Treasurer, State of Michigan, is the investment fiduciary for the following four State sponsored retirement systems: Michigan Public School Employees' Retirement System; Michigan State Employees' Retirement System; Michigan State Police Retirement System; and Judges' Retirement System.

Act No. 314 of the Public Act of 1965, as amended, authorizes the investment of assets of public employee retirement systems or plans created and established by the state or any political subdivision.

### PROXY VOTING POLICY

MSPRS' Proxy Voting Policy sets forth directives on the following issues: Board of Directors, Corporate Governance, Social Issues, corporate restructurings and defenses. All proxies are reviewed and voted in accordance with the above mentioned items.

### INVESTMENT RESULTS

#### *Total Portfolio Result*

For the fiscal year ended September 30, 1998, the total portfolio returned 8.3%, compared to the median of 6.6% of state plans, including MSPRS, as compiled by Capital Resource Advisors. For the three-year period, the fund returned 15.5%, and for the five-year period the fund returned 13.0%. This compares with the median fund return of 12.9% for the three-year period and 11.9% for the five-year period.

During the fiscal year ending September 30, 1998, the nation's economy was characterized by full employment, low inflation, declining interest rates, and moderate economic growth. The equity markets experienced a significant correction in the quarter ending September 30, 1998. The S&P 500 was off 9.9%, while the Dow Jones Industrial Average fell 12.0% during this time frame. This tended to reduce the one-year return on the S&P 500 to 9.1%, with the Dow Jones Industrial Average returning 0.5%. Because of declining interest rates, the Lehman Brothers Government/Corporate Bond Index experienced a return of 12.8% for the year ending September 30, 1998, and the Salomon Brothers Broad Grade Index experienced a return of 11.5%.

The returns were calculated using a time weighted rate of return in accordance with Standards of the Association for Investment Management and Research (AIMR), unless a modification is described in the discussion of the return.

The MSPRS is well diversified among asset classes. As of September 30, 1998, the portfolio consisted of 49.0% domestic equities, 24.4% fixed income (includes 0.2% in mortgages), 8.8% alternative investments, 8.1% real estate, 5.6% short-term investments, and 4.1% international equities.

#### *Domestic Stocks - Active*

The objective of the actively-managed domestic stock division is long-term capital appreciation by investing primarily in publicly-traded stocks of U.S.-based companies.

Fiscal year 1998 witnessed considerable volatility in the equity markets as competing factors pulled in different directions. On the positive side, low inflation, declining interest rates, low unemployment, and moderate growth in the U.S. economy helped the markets achieve new highs. On the negative side, concerns about corporate earnings growth, deflation fears, questions about presidential integrity, and worries about the health of a number of international economies and financial markets caused some temporary market declines.

Domestic stock returns closed the fiscal year with a 5.1% increase compared with a 9.1% increase for the S&P 500 Index and a 0.5% increase for the Dow Jones Industrial Average. This compared with a median return of 3.7% for state plans, including

# INVESTMENT SECTION

## Report on Investment Activity

MSPRS, as compiled by Capital Resource Advisors. The markets were led by a 44.0% gain for communication stocks, followed by 38.3% for health care, and 31.0% for utilities. Three-year and five-year results for the actively-managed domestic stock portfolio were 20.6% and 17.4%, respectively, on an annualized basis. This compared with 22.6% and 19.9% for the S&P 500, and 12.9% and 11.9% for the median state plans.

At the end of the fiscal year, actively-managed domestic stocks represented 37.1% of the portfolio compared with 36.7% at the end of 1997, and 35.5% at the close of 1996.

### *Domestic Stocks - Passive*

The objective of the enhanced S&P 500 and S&P MidCap Index Funds is to closely match the return performance of their benchmarks. The S&P 500 Index return for the fiscal year was 10.1% versus the benchmark's 9.1%. The S&P MidCap Index Fund return for the fiscal year was a negative 4.3% versus its benchmark of a negative 6.3%. The enhancements to the returns were the result of strategic allocations of additional funds to passive equity investments during market corrections and the opportunistic use of derivative programs. At the end of fiscal year, passive domestic stock portfolios represented 11.9% of total assets, with the S&P 500 Index Fund accounting for 11.0% and the S&P MidCap Index Fund accounting for 0.9%. Indexed stock portfolios represented 10.5% of total assets at the end of the prior fiscal year.

### *International Equities*

Passive exposure to international equity returns is achieved by investing in a combination of fixed income notes and equity swap agreements on foreign stock indices in developed markets. Interest on the dedicated notes is exchanged for international stock index returns, and the notional amount of the swap agreements is held in the approximate proportions of the Salomon Smith Barney Broad Market Index (BMI) Europe and Pacific Composite (EPAC) country weightings for the larger component countries. The passive investment program using swap agreements was established in 1993. During fiscal 1998, \$7 million of exposure was withdrawn from the combination structure, lowering international equity investments to 4.1% of the portfolio.

The benchmark used to evaluate international equity returns is a custom version of the Salomon Smith Barney BMI-EPAC adjusted for net dividends. Fifty percent of the benchmark is hedged to the U.S. dollar and the other 50% is impacted by foreign currency exchange rate changes. The composite international equity return of a negative 4.7% in fiscal year 1998 compared favorably with the Salomon Smith Barney BMI-EPAC return of a negative 8.1%. The composite international equity return of 8.4% for 3 years compared well with the benchmark's return of 6.6% over the same period.

The international equity exposure through the combination of fixed income LIBOR notes and equity swap agreements was valued at \$40 million on September 30, 1998. That valuation included a net unrealized loss on equity index exposures of \$1.1 million and an unrealized loss of \$0.5 million on LIBOR note investments held. Unrealized equity losses reflect both the decline of several targeted international equity indices later in the year and the increase in index exposure cost levels throughout the year. As older swap agreements matured, equity gains were realized and new replacement swap exposures were established at higher index levels. At the end of September, total realized gains and net interest received in excess of counterparty obligations reached a record \$11.6 million since the program began. During fiscal 1998, \$7.3 million of gains on equity exposures were realized, and \$1.3 million of interest in excess of obligations on completed swaps was also recognized.

### *Fixed Income (Excluding Mortgages)*

For the fiscal year ending September 30, 1998, the fixed income portfolio returned 10.0% compared to the median of 10.9% for the state plans, including MSPRS, as compiled by Capital Resource Advisors evaluations. For the three-year period, the portfolio returned 8.5%, and for the five-year period the portfolio returned 7.6%. This compares with the median portfolio return of 8.7% for the three-year period and 7.2% for the five-year period.

As the year progressed, rates declined and quality spreads widened as investors purchased the long-term treasury issues in a flight to quality. The fixed income market, therefore, rewarded higher grade, longer-term issues. MSPRS' fixed income

## Report on Investment Activity

portfolio had a shorter duration than the Lehman Government and Corporate Index. As a result, the fund under-performed the Lehman Index for the one-year period, 10.0% versus 12.8%, but was still in line for the three-year period, 8.5% versus 8.9%, and out-performed the index for the five-year period, 7.6% versus 7.2%. Relative to the Salomon Brothers Broad Grade Index, MSPRS' fixed income portfolio under-performed in the one-year time horizon, 10.0% to 11.5% and in the three year period, 8.5% to 8.7%, and was ahead in the five-year period 7.6% to 7.2%.

Fixed Income represented 24.2% of the total portfolio compared with 25.1% last year. The corporate sector represented 47.2% of fixed income securities with government securities representing 52.8%. Last year, corporates represented 40.2% of the total with governments representing 59.8%. The high level of corporates was due to a concerted strategy to acquire investment grade issues where spreads had widened significantly. The lower holding of governments can be attributed to a substantial increase in the number of issues called, particularly government sponsored enterprises.

### *Real Estate Equity*

As of the year ending September 30, 1998, 8.1% of the portfolio was invested in equity real estate. This compares to 6.4% and 6.4% for the fiscal years ending September 30, 1997 and 1996, respectively. The asset allocation for equity real estate investment was increased to 8.5% of the portfolio from 7.5% for fiscal year ending September 30, 1997.

The one-year, three-year and five-year total equity real estate net returns for the fiscal year ending September 30, 1998, were 11.5%, 11.8% and 8.2%, respectively, as quoted by Capital Resource Advisors. This compares to the National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index returns of 17.3%, 12.5% and 9.9% relating to the same time periods. The NCREIF portfolio of properties is heavily weighted in the office sector, 41.3% versus the MSPRS portfolio at 28.9%. However, the historical volatility of the office sector returns make it a more risky asset class. This variation in portfolio weighting gives the NCREIF portfolio a much higher level of risk than MSPRS has chosen to assume. In addition, the NCREIF Index does not account for fees/overhead, while MSPRS' returns quoted above are after fees/overhead.

The real estate investments are broadly diversified geographically, across the country, by type of property, and by class of property, to reduce risk. Major property types include the following: Central Business District (CBD) office, suburban office, regional malls, neighborhood and community shopping centers, industrial/warehouse buildings and apartments. MSPRS, through its advisors and private real estate operating companies it controls, acquires, develops, redevelops and disposes of real estate with the goal of maximizing returns while maintaining an *acceptable* level of risk. The properties are held in various investment vehicles: Partnerships, LLC's, Trusts, Commingled funds, and REIT stock. These legal entities allow MSPRS to enjoy the benefits of real estate ownership while limiting the liability associated with this asset class. In all new investments, MSPRS retains approval rights over critical decisions. The properties are regularly valued by independent appraisers to establish market values. The market values established by the appraisers are utilized in computing the real estate portfolio appreciation return. The appreciation return coupled with the income return produced from the real estate holdings are utilized to derive the equity real estate portfolio total return.

### *Real Estate Debt (Mortgages)*

As of the year ending September 30, 1998, 0.2% of the portfolio was invested in mortgages. This compares to 0.3% and 3.0% for the fiscal years ending September 30, 1997 and 1996, respectively. The asset allocation objective is to reduce mortgage holdings to 0% over time. In the current interest rate environment, MSPRS cannot meet actuarial return requirements in new mortgage loans.

The one-year, three-year and five-year total returns for the mortgage portfolio, for the fiscal year ending September 30, 1998, were 11.8%, 7.8% and 7.1%, respectively. This compares to Salomon Brothers Broad Grade Index returns of 11.5%, 8.7% and 7.2% relating to the same time periods. Since the majority of the mortgage portfolio is federally insured mortgages, and therefore less risky, the returns generated by the mortgage portfolio would normally be less than the index.

During the previous year, the majority of the mortgage portfolio was sold to take advantage of the favorable low interest rate environment. The low interest rates, existing in the overall economy, resulted in premium prices being paid for the mortgages sold. The sale of the mortgages resulted in realized gains to the portfolio. On average, MSPRS received sale

# INVESTMENT SECTION

## Report on Investment Activity

prices of between 101% and 105% of the unpaid principal balance of the notes compared to purchase prices of between 55% and 60% of face value for these same loans when purchased back in the late 1970's and early 1980's. The remaining mortgage holdings are mainly comprised of federally insured multifamily mortgages and a few multi-tenant commercial office buildings. The mortgage portfolio is concentrated in Michigan and the Midwest.

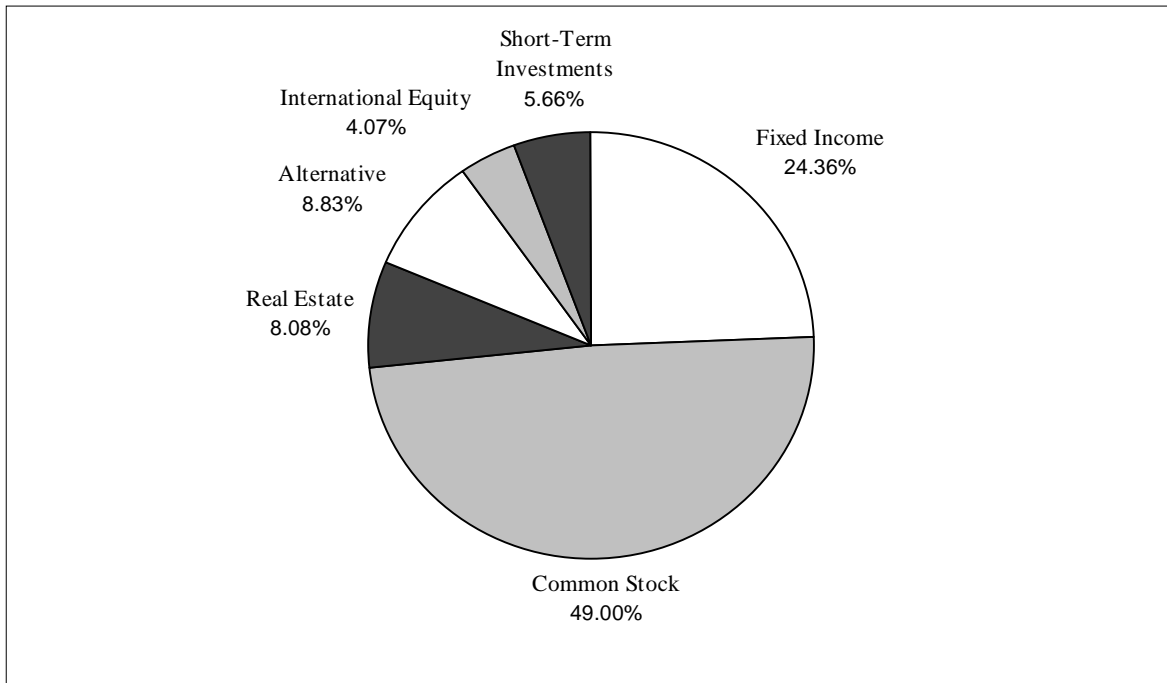
### *Alternative Investments*

Alternative Investments are investments in the private equity market, either directly in companies or indirectly through limited partnerships. Through September 30, 1998, approximately 90% of alternative investments were made through limited partnerships. Of the investments in limited partnerships, approximately 8% were in partnerships investing internationally. The remaining 10% were direct private equity investments and public stock distributions received from the limited partnerships. The percentage of assets in alternative investments has consistently increased from 4.8% as of September 30, 1993, to 8.8% as of September 30, 1998. The asset allocation for alternative investments is 8.8% while the long-term target asset allocation is 7.5%.

The one-year, three-year and five-year total alternative investment returns for the fiscal year ending September 30, 1998, were 26.4%, 25.7% and 21.9%, respectively.

## Report on Investment Activity

### Asset Allocation



### Investment Results Periods Ending September 30, 1998

Investment Category	Current Year	Annualized Rate of Return		
		3 Years	5 Years	10 Years
Total Portfolio	8.3 %	15.5 %	13.0 %	11.4 %
Median	6.6	12.9	11.9	11.4
Domestic Equities Stock - Active	5.1	20.6	17.4	13.6
Domestic Equities Stock - Passive*	8.4	22.4	19.2	17.7
Standard & Poor's (S&P 500)	9.1	22.6	19.9	17.3
International Equities	(4.7)	8.4	6.6	N/A
Net Salomon BMI - EPAC 50/50	(8.1)	6.6	6.0	N/A
Fixed Income Bonds (U.S. Corp and Govt)	10.0	8.5	7.6	9.6
Salomon Brothers Broad Grade Index	11.5	8.7	7.2	9.3
Real Estate - Debt (Mortgages)	11.8	7.8	7.1	N/A
Salomon Brothers Broad Grade Index	11.5	8.7	7.2	9.3
Real Estate - Equity	11.5	11.8	8.2	N/A
NCREIF	17.3	12.5	9.9	5.3
Alternative Investments	26.4	25.7	21.9	16.0

\* Passive portfolio consists of a S&P 500 fund and a S&P MidCap fund. The return is a weighted average of the two funds.



# INVESTMENT SECTION

## Report on Investment Activity

### Largest Assets Held

#### Largest Stock Holdings (By Market Value) September 30, 1998

<u>Rank</u>	<u>Shares</u>	<u>Stocks</u>	<u>Market Value</u>
1	164,518	Microsoft Corporation	\$ 18,107,262
2	206,505	General Electric Corporation	16,430,054
3	180,738	Warner-Lambert Company	13,645,719
4	121,119	Pfizer Incorporated	12,808,334
5	177,247	Amoco Corporation	9,549,182
6	156,679	McDonald's Corporation	9,351,778
7	187,980	Chrysler Corporation	8,999,543
8	121,349	Federal National Mortgage Association	7,796,673
9	238,280	Compaq Computer Corporation	7,535,605
10	135,615	Wal-Mart Stores Incorporated	7,407,969

#### Largest Bond Holdings (By Market Value) September 30, 1998

<u>Rank</u>	<u>Par Amount</u>	<u>Bonds &amp; Notes</u>	<u>Market Value</u>
1	\$ 7,957,000	U.S. Treasury Bonds at 9.125% Due 5-15-2009	\$ 9,728,706
2	7,393,310	U.S. Treasury 0% Callable Principal Due 5-15-2011	5,235,203
3	6,352,500	U.S. Treasury 0% Coupon Strips Due 8-15-2003	5,144,763
4	4,620,000	Morgan, J.P. FRN Due 3-13-2000	4,596,900
5	5,243,700	U.S. Treasury 0% Callable Principal Due 11-15-2011	3,622,767
6	3,465,000	FHLMC Debenture 6.70% Due 7-23-2008	3,509,006
7	3,685,000	U.S. Treasury Tiger 14 0% Due 8-15-2004	2,841,356
8	2,627,625	FHLMC Debenture 6.51% Due 8-18-2008	2,655,136
9	2,330,443	First Chicago FRN Due 7-28-2003	2,362,417
10	2,310,000	FHLMC - Global 6.55% Due 11-13-2001	2,314,320

A complete list of stock and bond holdings is available from the Michigan Department of Treasury.

## Report on Investment Activity

### Schedule of Investment Fees

The State Treasurer is the investment fiduciary and custodian of the System's funds pursuant to state law. Outside advisors are utilized to augment the State Treasurer's internal staff in the real estate and alternative investment markets. Only 8.5% of the total investment portfolio is managed by fully discretionary outside advisors. Outside advisor's fees are netted against the partnership or trust fund income. The Michigan Department of Treasury's cost of operations applicable to the System for the fiscal year amounted to \$150.2 thousand or less than two basis points (.02%) of the average fair market value of the portfolio.

#### Schedule of Investment Fees

*Investment Managers' Fees:*

	Assets under Management (in thousands)	Fees (in thousands)	Basis Points*
State Treasurer	\$894,681.8	150.2	1.7
Outside Advisors - Alternative Real Estate	78,908.6 4,334.5	524.8 -	66.5 -
Total	\$977,924.9		

*Other Investment Services Fees:*

	Assets in Custody**	
Custody Fees	\$695,924.0	3.3
Security Lending Fees	40,136.6	1,701.1

\* Outside Advisors Fees are netted against the income of the partnership and trust income. The partnership agreements define the management fees, which range from 150 to 250 basis points of the committed capital, in most cases the fees are netted against income. For Real Estate the asset management fee ranges from 25 to 90 basis points and is netted against current year's income.

\*\* Other investment service fees are charged on assets managed by the State Treasurer held at its custodial bank in the amount of \$695.9 million; \$40.1 million of the assets were on loan at fiscal year end.

# INVESTMENT SECTION

## Report on Investment Activity

### Schedule of Commissions

	Fiscal Year Ended 9-30-98		
	Number of Shares Traded	Commissions Paid <sup>(1)</sup>	Average Commission Rate per Share
<b>Investment Performance Measurement Consultant:</b>			
Capital Resource Advisors (Directed brokerage included below)	40,135	\$ 2,408	0.06
<b>Investment Brokerage Firms:</b>			
Merrill Lynch & Company	270,092	\$ 15,503	0.06
Salomon Smith Barney, Inc.	204,405	12,264	0.06
Paine Webber, Inc.	185,969	11,158	0.06
Bear Stearns & Company	163,543	9,320	0.06
Donaldson, Lufkin & Jenrette Securities Corp.	129,367	7,762	0.06
Bridge Trading Company	115,789	6,947	0.06
Schroder & Company	114,514	6,739	0.06
Sanford C. Bernstein & Company	93,876	5,633	0.06
C.S. First Boston Corporation	83,279	4,997	0.06
Prudential Securities Inc.	73,126	4,388	0.06
Goldman, Sachs & Company	73,394	4,282	0.06
Lehman Brothers, Inc.	72,067	4,209	0.06
Morgan Stanley & Company	64,759	3,871	0.06
Oppenheimer & Company	63,705	3,707	0.06
J.P. Morgan Securities, Inc.	60,196	3,612	0.06
Capital Inst. Services	50,638	3,038	0.06
S.G. Cowen & Company	45,489	2,729	0.06
Charles Schwab & Company, Inc.	44,059	2,644	0.06
The Citation Group	37,593	2,209	0.06
Wilshire Associates	35,994	2,160	0.06
Everen Securities	34,657	2,079	0.06
Standard & Poor's Securities	34,449	2,067	0.06
Montgomery Securities	24,290	1,457	0.06
Deutsche/Morgan/Grenfell	22,070	1,324	0.06
SoundView Financial Group	15,239	914	0.06
Subtotal (25 highest)	2,112,559	\$ 125,013	0.06 <sup>(2)</sup>
All Other Brokerage Firms	27,836	1,670	0.06 <sup>(3)</sup>
Total	2,140,395	\$ 126,683	0.06 <sup>(4)</sup>

<sup>(1)</sup> These amounts are included in purchase and sale prices of investments.

<sup>(2)</sup> The average commission rate per share for the top 25 brokerage firms.

<sup>(3)</sup> The average commission rate per share for all other brokerage firms, excluding the top 25 brokerage firms.

<sup>(4)</sup> The average commission rate per share for all brokerage firms.

# INVESTMENT SECTION

## Report on Investment Activity

### Investment Summary

	1998		1997	
	Market Value*	Percent of Total Market Value	Market Value*	Percent of Total Market Value
Fixed Income:				
Government Bonds	\$ 124,939,696	12.78 %	\$ 138,968,344	15.00 %
Corporate Bonds & Preferred Stocks	111,336,252	11.39	92,802,958	10.02
Convertible Bonds	0	0	445,147	0.05
Mortgages	1,861,461	0.19	2,638,763	0.28
Total Fixed Income	\$ 238,137,409	24.36 %	\$ 234,855,212	25.35 %
Common Stock	479,148,534	49.00	437,067,164	47.18
Real Estate	78,970,083	8.08	59,196,600	6.39
Alternative	86,320,008	8.83	60,746,348	6.56
International Equity	39,823,276	4.07	49,576,400	5.35
Short-Term Investments**	55,325,580	5.66	85,000,525	9.17
<b>Total</b>	\$ 977,724,890	100.00 %	\$ 926,442,249	100.00 %

\* Short-term investments are at cost, which approximates market.

\*\* Includes equity in the State Treasurer's Common Cash Fund, but excludes amounts payable and receivable for sales and purchases of securities with a settlement date after September 30 for each fiscal year. Amount also excludes \$40,345,176 and \$34,214,120 in cash collateral for security lending for fiscal year 1998 and 1997 respectively.

# ACTUARIAL SECTION



Actuary's Certification  
Summary of Actuarial Assumptions and Methods  
Schedule of Active Member Valuation Data  
Retirant and Beneficiary Data  
Prioritized Solvency Test  
Summary of Plan Provisions

# Actuary's Certification

## THE SEGAL COMPANY

One Park Avenue  
New York, New York  
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January 22, 1999

Michael J. Karlin, F.S.A., M.A.A.A.  
Senior Vice President & Actuary

Ms. Janet E. Phipps  
Director  
Department of Management and Budget  
and  
Retirement Board  
Michigan State Police Retirement System  
P.O. Box 30176  
Lansing, Michigan 48909

Ladies and Gentlemen:

The Michigan State Police Retirement System (MSPRS) is funded on an actuarial reserve basis. The basic financial objective of MSPRS is to establish and receive contributions that remain approximately level as a percentage of active member payroll over a long period of years.

Actuarial valuations are prepared annually to determine MSPRS's actuarial liabilities and the employer contributions required to fund the System in accordance with the actuarial reserve funding provisions of the governing State Statute. The most recent actuarial valuation as of September 30, 1998 included a total of 4,379 members of MSPRS. The actuarial value of MSPRS's assets amounted to approximately \$974 million on September 30, 1998.

The actuarial assumptions used in the 1998 valuation are the same as those used in the previous annual actuarial valuation. These assumptions produce valuation results which we consider to be reasonably indicative of the plan's underlying cost. Also, in our opinion, the actuarial assumptions and methods used for funding purposes meet the parameters for the disclosures presented in the financial section by GASB Statement No. 25.

Our actuarial valuation of MSPRS as of September 30, 1998 was performed by qualified actuaries in accordance with accepted actuarial procedures. In our opinion, the calculated contribution rate meets the fundamental objectives of State law. Based on the 1998 valuation results, it is also our opinion that the Michigan State Police Retirement System continues in sound condition, in accordance with actuarial principles of level cost financing.

Most of the information used in the supporting schedules in the Actuarial and Statistical Sections, as well as the Schedules of Funding Progress and the employer contributions shown in the Schedules of Employer Contributions in the Financial Section of this report were provided by our firm.

Sincerely,



Michael Karlin, F.S.A., M.A.A.A.  
Senior Vice President & Actuary

# ACTUARIAL SECTION

## Summary of Actuarial Assumptions and Methods

---

1. The investment return rate used in making the valuations was 8% per year, compounded annually. This rate of return is not the assumed real rate of return. Considering other financial assumptions, this 8% investment return rate translates to an assumed real rate of return of 5% for 5 years beginning October 1, 1994, and 4% thereafter.
2. The mortality table used in evaluating allowances to be paid was the 1983 Group Annuity Mortality Table, set forward one year for men and 2 years for women. Adopted 1994.
3. Sample probabilities of retirement with an age and service allowance are shown in Schedule I on the next page. Adopted 1994.
4. Sample probabilities of withdrawal from service and disability, together with individual pay increase assumptions, are shown in Schedule II on the next page.
5. Total active member payroll is assumed to increase 3% per year for the next 5 years, beginning October 1, 1994, and 4% thereafter. This represents the portion of the individual pay increase assumptions attributable to inflation. In effect, this assumes no change in the number of active members.
6. An individual entry age actuarial cost method of valuation was used in determining age and service allowance actuarial liabilities and normal cost. Unfunded actuarial accrued liabilities, including actuarial gains and losses, are financed over a declining period of 50 years, beginning October 1, 1986.
7. During 1998, the Department of Management and Budget approved the use of market value of assets as of September 30, 1997 for actuarial valuation purposes. For investment gains or losses that occur after that date, a 5-year smoothing technique will be used. Specifically, the excess (shortfall) of actual investment income (including interest, dividends, realized and unrealized gains or losses) over the imputed income at the valuation interest rate is considered the gain (loss), which is spread over 5 years.
8. The data about persons now covered and about present assets was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary.
9. The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA).

## Summary of Actuarial Assumptions and Methods (Continued)

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### SCHEDULE 1

#### Percent of Eligible Active Members Retiring Within Next Year

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year
44-47	10 %
48-63	30
64 and over	100

### SCHEDULE 2

#### Separation From Active Employment Before Age & Service Retirement & Individual Pay Increase Assumptions

Sample Ages	Years Service	Percent of Active Members Withdrawing Within Next Year (Men and Women)	Percent of Active Members Becoming Disabled Within Next Year	Percent Increase In Pay During Next Year
All	0	8.00 %		
	1	3.00		
20	2 & Over	2.00	0.04 %	13.00 %
25	"	2.00	0.06	12.81
30	"	1.50	0.17	8.10
35	"	0.60	0.19	5.45
40	"	0.35	0.24	4.24
45	"	0.35	0.44	3.89
50	"		1.15	3.86
55	"		1.25	3.68
60	"		1.45	3.00



# ACTUARIAL SECTION

## Actuarial Valuation Data

### Schedule of Active Member Valuation Data

Valuation Date Sept. 30	Number	Reported Annual Payroll	Average Annual Pay	% Increase	Average Age	Average Service
1989	2,238	\$ 86,187,000	\$ 38,511	6.4 %	38.7 years	14.9 years
1990	2,255	88,885,729	39,417	2.4	38.6	14.9
1991	2,139	91,626,979	42,836	8.7	39.2	15.4
1992	1,985	89,899,102	45,289	5.7	39.4	15.3
1993	1,885	86,791,793	46,043	1.7	39.9	15.1
1994	1,992	88,623,068	44,490	(3.4)	38.8	13.4
1995	2,181	104,500,048	47,914	7.7	37.9	13.0
1996	2,135	106,826,272	50,036	4.4	38.2	13.1
1997	2,090	110,085,960	52,673	5.3	38.2	12.9
1998	2,220	108,183,040	48,731	(7.5)	37.5	11.6

### Retirant and Beneficiary Data Rolls End of Year

Year Ended Sept. 30	Number			Average Monthly Benefit			Average Age		
	Pensioners	Widows	Children	Pensioners	Widows	Children	Pensioners	Widows	Children
1989	967	230	5	1,393	850	100	61.1	66.1	14.1
1990	1,050	246	3	1,426	847	100	61.2	66.2	13.5
1991	1,142	263	3	1,510	854	100	60.8	66.6	13.4
1992	1,267	281	3	1,620	868	100	60.4	66.6	14.4
1993	1,357	282	3	1,697	879	100	60.4	66.7	15.3
1994	1,483	273	3	1,721	938	100	60.5	69.5	16.4
1995	1,548	279	4	1,770	962	100	60.8	69.6	14.8
1996	1,612	397	6	1,845	1,001	100	61.6	69.3	10.3
1997	1,703	310	5	1,963	1,192	419	62.5	70.4	10.7
1997	1,820	314	5	2,062	1,225	499	62.8	71.0	10.1

## Prioritized Solvency Test

MSPRS' funding objective is to meet long term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will pay all promised benefits when due -- the ultimate test of financial soundness. Testing for level contribution rates is the long-term solvency test.

A prioritized solvency test is another means of checking a system's progress under its funding program. In a short condition test, the plan's present assets (cash and investments) are compared with: (1) active member contributions on deposit; (2) the liabilities for future benefits to present retired lives; and (3) the liabilities for service already rendered by active members. In a system that has been following the discipline of level percent of payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (liability 3) is normally partially covered by the remainder of present assets. Generally, if the System has been using level-cost financing, the funded portion of liability 3 will increase over time. Liability 3 being fully funded is not necessarily a byproduct of level percent of payroll funding methods.

The schedule below illustrates the history of the liabilities of the System and is indicative of MSPRS' policy of following the discipline of level percent of payroll financing.

Valuation Date Sept. 30	Actuarial Accrued Liability (\$ in Millions)			Valuation Assets	Portion of Present Value Covered by Assets			
	(1)	(2)	(3)		(1)	(2)	(3)	(4)**
	Active Member Contributions	Retirants and Beneficiaries	Active Members (Employer Financed Portion)					
1989	\$ 3,713	\$ 187,986	\$ 277,236	\$ 425,016	100 %	100 %	84.2 %	90.6 %
1990	3,256	213,228	289,836	442,933	100	100	78.1	87.5
1990 <sup>#</sup>	3,256	213,228	324,962	442,933	100	100	69.7	81.8
1991	2,747	251,716	340,717	468,304	100	100	62.8	78.7
1992	2,127	301,927	340,316	488,711	100	100	54.3	75.8
1993	2,133	330,629	347,749	526,193	100	100	55.6	77.3
1993 <sup>***</sup>	2,133	330,629	347,749	530,936	100	100	57.0	78.0
1994	1,770	370,681	336,847	566,541	100	100	57.6	79.9
1994 <sup>*</sup>	1,770	394,292	315,779	566,541	100	100	54.0	79.6
1995	1,497	422,960	374,363	622,626	100	100	52.9	77.9
1996	1,183	459,985	362,293	697,923	100	100	65.3	84.8
1997	847	516,379	363,100	787,240	100	100	74.4	89.4
1997 <sup>***</sup>	847	516,379	363,100	928,714	100	100	113.3	105.5
1997 <sup>+</sup>	847	516,379	395,533	928,714	100	100	104.0	101.7
1998	614	593,169	349,941	974,365	100	100	108.8	103.2

\* Revised actuarial assumptions.

# Benefits amended.

\*\*\* Revised asset valuation method.

\*\* Percent funded on a total valuation asset and total actuarial accrued liability basis.

+ Revised inflation assumption

# ACTUARIAL SECTION

## Summary Of Plan Provisions

Our actuarial valuation of MSPRS as of September 30, 1998, is based on the present provisions of Public Act 182 of 1986, as amended.

### ***Regular Retirement***

Eligibility — 25 years of credited service with no age requirement; or age 50 with 10 years credited service.

Annual Amount — If member has 25 or more years of credited service, 60% of final average compensation; if member has less than 25 years of credited service, total credited service time 2% of final average compensation.

Type of Final Annual Compensation — Average of 2 final years.

### ***Early Retirement***

None.

### ***Deferred Retirement (vested benefit)***

Eligibility — 10 years of credited service. Benefit commences at age 50.

Annual Amount — Computed as Regular Retirement benefit based on credited service and final average compensation at termination.

### ***Duty-Disability Retirement***

Eligibility — No age or service requirement.

Annual Amount — 60% of final average compensation. Disability benefit plus workers' compensation benefit, if any, shall not exceed 100% of final average compensation.

### ***Non-Duty Disability Retirement***

Eligibility — 10 years of credited service.

Annual Amount — 2.4% of final average compensation times years of credited service, to a maximum of 60% of final average compensation.

### ***Duty Death Before Retirement***

Eligibility — No age or service requirement

Annual Amount — 60% of final average compensation is payable to surviving spouse; additional \$1,200 per year for each child under 18 is also payable. If no surviving spouse, children under 18 share in 60% benefit until attainment of age 18. If no spouse or children, dependent parents are eligible for 60% benefit (plus \$1,200 per dependent sibling under 18). Retirement benefit plus workers' compensation, if any shall not exceed 100% of final average compensation.

Lump Sum Payment — A \$1,500 funeral benefit is also payable.

## Summary Of Plan Provisions (continued)

### *Non Duty Death Before Retirement*

Eligibility — 10 years of credited service.

Annual Amount — 2.4% of final average compensation times years of credited service, to a maximum of 60% of final average compensation, payable to surviving spouse. If no surviving spouse, children under 18 share in benefit until attainment of age 18.

### *Death After Retirement*

The retired member's benefit continues to the surviving spouse. If no surviving spouse, children under 18 share in the continued benefit until attainment of age 18.

### *Post-Retirement Cost-of-Living Adjustments*

All members retiring (or leaving employment with vested benefits), and their survivors, are eligible for automatic 2% annual (non-compounded) benefit increases, with a maximum annual increase of \$500.

### *Post - Retirement Health Insurance Coverage*

Persons in receipt of retirement allowances, and their dependents, are eligible for 95% State-paid health insurance coverage and 90% State-paid dental and vision insurance.

### *Member Contributions*

None.

# STATISTICAL SECTION

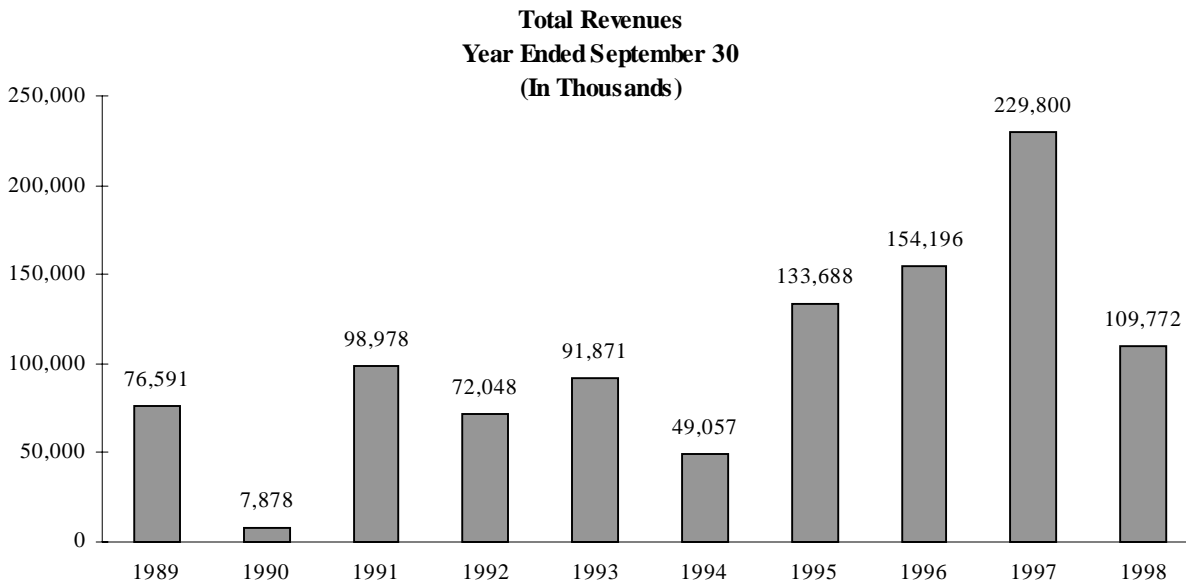


Schedule of Revenues by Source  
Schedule of Expenses by Type  
Schedule of Benefit Expenses by Type  
Schedule of Retired Members by Type of Benefit  
Schedule of Average Benefit Payments  
Ten Year History of Membership

## Schedule of Revenues by Source

Fiscal Year Ended Sept. 30	Member Contributions**	Employer Contributions		Net Investment & Other Income	Total
		Dollars	% of Annual Covered Payroll		
1989	\$ 76,245	\$ 19,675,670	22.8 %	\$ 56,839,293	\$ 76,591,208
1990	96,290	22,367,961	25.2	(14,586,666)	7,877,585
1991	57,617	28,732,958	31.4	70,187,267	98,977,842
1992	72,117	29,203,071	32.5	42,772,851	72,048,039
1993	30,065	31,183,021	35.9	60,657,772	91,870,858
1994	45,384	35,945,995	40.6	13,065,959	49,057,338
1995	71,008	37,754,338	36.1	95,862,258	133,687,604
1996	76,743	53,135,642	49.7	100,983,575	154,195,960
1997	712,799	51,851,631	47.1	177,235,892	229,800,322
1998	922,736	33,123,384	30.6	75,726,277	109,772,397

\*\*1997, and after, includes amounts withheld from retiree's pension check for health.



# STATISTICAL SECTION

## Schedule of Expenses by Type

<b>Fiscal Year Ended Sept. 30</b>	<b>Benefit Payments*</b>	<b>Refunds and Transfers</b>	<b>Administrative Expenses</b>	<b>Total</b>
1989	\$ 20,468,503	\$ 6,162	\$ 227,713	\$ 20,702,378
1990	24,660,315		371,904	25,032,219
1991	28,686,901		393,003	29,079,904
1992	34,207,792	586	465,435	34,673,813
1993	40,446,933	1,743	359,160	40,807,836
1994	44,629,521		449,033	45,078,554
1995	45,639,290		493,400	46,132,690
1996	48,795,509		429,986	49,225,495
1997	54,912,395		202,828	55,115,223
1998	62,083,435		225,327	62,308,762

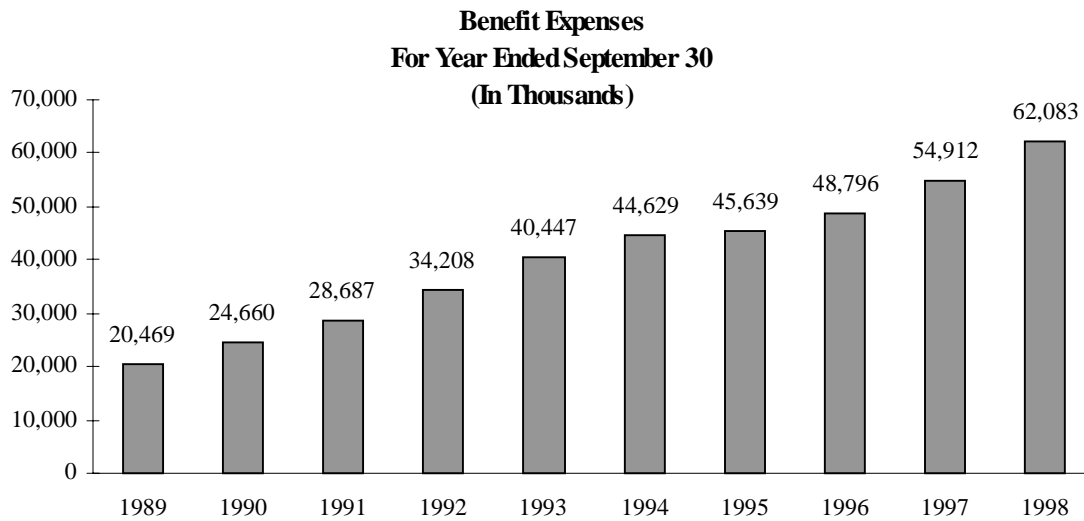
\*Includes health, dental and vision benefits.



**Schedule of Benefit Expenses by Type**

<b>Fiscal Year Ended Sept. 30</b>	<b>Regular Benefits</b>	<b>Disability Benefits</b>	<b>Funeral Benefits</b>	<b>Health Benefits*</b>	<b>Total</b>
1989	\$ 15,735,408	\$ 1,240,742		\$ 3,492,353	\$ 20,468,503
1990	18,014,908	1,379,133		5,266,274	24,660,315
1991	20,573,564	1,534,544		6,578,793	28,686,901
1992	23,797,297	1,760,059	\$ 3,000	8,647,436	34,207,792
1993	27,681,161	1,957,605	1,500	10,806,667	40,446,933
1994	30,915,357	2,127,957	3,000	11,583,207	44,629,521
1995	33,141,186	2,366,398		10,131,706	45,639,290
1996	35,794,961	2,482,429	1,500	10,516,619	48,795,509
1997	40,536,134	2,782,100		11,594,161	54,912,395
1998	45,216,692	3,010,640		13,856,103	62,083,435

\*Includes vision and dental benefits





# STATISTICAL SECTION

## Schedule of Retired Members by Type of Benefit September 30, 1998

Amount Monthly Benefit	Number of Retirees	Type of Retirement *						Option
		1	2	3	4	5	6	Life
\$001 - 400	37	28	1	2	3	3	0	37
401 - 800	114	82	5	2	9	0	16	114
801 - 1,200	459	248	148	31	5	19	8	459
1,201 - 1,600	305	224	35	24	10	6	6	305
1,601 - 2,000	154	122	7	9	6	3	7	154
2,001 - 2,400	242	193	22	17	8	0	2	242
2,401 - 2,800	412	394	4	9	1	2	2	412
2,801 - 3,200	301	293	4	3	1	0	0	301
3,201 - 3,600	80	78	0	1	0	0	1	80
3,601 - 4,000	19	19	0	0	0	0	0	19
Over 4,000	15	15	0	0	0	0	0	15
Totals	2,138	1,696	226	98	43	33	42	2,138

\* Type of Retirement

- 1 - Normal retirement for age & service
- 2 - Survivor payment - normal retirement
- 3 - Duty disability retirement
- 4 - Non-duty disability retirement
- 5 - Survivor payment - duty death in service
- 6 - Survivor payment - Non-duty death in service

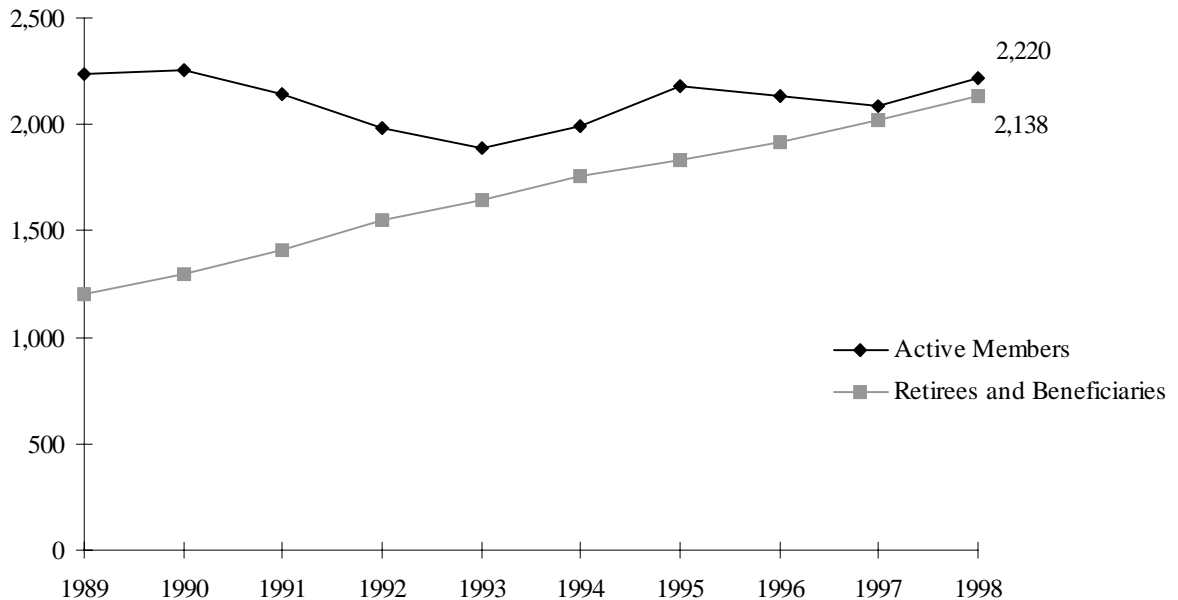
Option

Life - 100% Joint and Survivors

**Schedule of Average Benefit Payments**

<u>Retirement Effective Dates</u>	<u>Average Monthly Benefit</u>	<u>Number of Active Retirants</u>
Period 10/01/91 to 09/30/92	\$ 1,481	1,551
Period 10/10/92 to 09/30/93	1,546	1,642
Period 10/01/93 to 09/30/94	1,597	1,759
Period 10/01/94 to 09/30/95	1,644	1,831
Period 10/01/95 to 09/30/96	1,709	1,915
Period 10/01/96 to 09/30/97	1,840	2,018
Period 10/01/97 to 09/30/98	1,936	2,138

**10 Year History of Membership  
Fiscal Years Ended September 30**



## **ACKNOWLEDGMENTS**

The Michigan State Police Retirement System's Comprehensive Annual Financial Report is prepared by the Office of Retirement Services, Finance and Administration Division. Finance staff of the division for the fiscal year 1997-1998 report included:

Deb Braun  
Lorie Herendeen  
Al Juderjohn  
Barbara Kirkland, CPA  
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Denise Omo  
Deb Strzelec  
Paula Webb  
Patty Wethy  
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Darlene Workman, MBA, CPA

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