Missouri Department of Transportation and Highway Patrol Employees' Retirement System A Component Unit of the State of Missouri

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 2007Comprehensive Annual Financial Report
forthe fiscal year ended June 30,2007
for the fiscal year ended June 30, 2007

Missouri Department of Transportation and Highway Patrol Employees' Retirement System A Component Unit of the State of Missouri

Comprehensive Annual Financial Report for the fiscal year ended June 30, 2007 2007

Norm Robinson, Executive Director
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## Table of Contents

Introductory Section
Certificate of Achievement for Excellence in Financial Reporting ..... 6
Public Pension Coordinating Council (PPCC) Award ..... 6
Letter of Transmittal. ..... 7
Board of Trustees ..... 11
Retirement System Staff ..... 12
Administrative Organization ..... 13
Professional Services ..... 15
Financial Section
Independent Auditors' Report ..... 18
Management's Discussion and Analysis ..... 19
Basic Financial Statements
Statements of Plan Net Assets ..... 22
Statements of Changes in Plan Net Assets ..... 23
Notes to the Financial Statements ..... 24
Required Supplementary Information
Schedule of Funding Progress ..... 36
Notes to the Schedules of Trend Information ..... 36
Schedule of Employer Contributions ..... 37
Supplementary Information
Schedules of Administrative Expenses. ..... 38
Schedules of Investment Expenses ..... 39
Schedules of Professional and Consultant Expenses ..... 40
Investment Section
Chief Investment Officer Report ..... 42
Investment Consultant Report ..... 43
Investment Activity Overview ..... 44
Summary of Investment Policy ..... 44
Market Value of Investments ..... 44
Investment Performance. ..... 44
Asset Allocation Overview ..... 46
Investment Summary ..... 47
Largest Investment Holdings ..... 48
Schedule of Investment Expenses ..... 49
Schedule of Brokerage Commissions ..... 50

## Table of Contents

Actuarial Section
Actuary's Certification Letter ..... 52
Summary of Actuarial Methods and Assumptions ..... 53
Summary of Member Data Included in Valuations ..... 58
Active Members by Attained Age and Years of Service ..... 59
Schedule of Active Member Valuation Data ..... 62
Solvency Test ..... 63
Derivation of Financial Experience ..... 64
Schedule of Retirees and Beneficiaries Added and Removed ..... 65
Summary of Plan Provisions ..... 66
Legislative Changes ..... 67
Statistical Section
Changes in Net Assets ..... 70
Benefit Payments by Type ..... 71
Schedule of Retired Members by Type of Benefit ..... 72
Schedule of Average Monthly Benefit Payments ..... 74
Active Member Data ..... 77
Terminated Vested Member Data ..... 80
Benefit Recipients. ..... 82
Membership Distribution ..... 82
Average Years of Service for New Retirees ..... 83
Final Average Pay for New Retirees ..... 83
Location of MPERS Retirees ..... 84

## MoDOT\&Patrol Employees' Retirement System



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Jefferson City, Missouri 65102-1930

Street Address
1913 William Street
Jefferson City, Missouri 65109

## Fax Numbers

## Administrative <br> Benefits

(573) 526-5895
(573) 522-6111

E-Mail Address
mpers@modot.mo.gov

## Office Directory

(573) 298-6081

WebSite
www.mpers.org



## Public Pension Coordinating Council Award



# Norm Robinson <br> Executive Director <br> MoDOT \& Patrol Employees’ Retirement System 

Susie Dahl<br>Assistant Executive Director

October 1, 2007
To the Board of Trustees and System Members:
We are pleased to present the MoDOT and Patrol Employees' Retirement System (MPERS) Comprehensive Annual Financial Report for the fiscal year ended June 30, 2007.

## Report Contents and Structure

This Comprehensive Annual Financial Report has been prepared to enhance the knowledge and understanding of the retirement system. The material has been prepared in a manner to be useful and informative to the members, to the management of the Missouri Department of Transportation (MoDOT) and the Missouri State Highway Patrol (Highway Patrol), and to the elected officials of the State of Missouri.

MPERS management is responsible for the accuracy and completeness of the information in this report. To the best of our knowledge and belief, the information presented is accurate in all material respects and is reported in a manner designed to fairly present the financial position of the fund. This report is also designed to comply with the reporting requirements of Sections 104.480, 104.1006 and 105.661 of the Revised Statutes of Missouri (RSMo.) as amended.

## Background Information

MPERS was established by Senate Bill 66 in 1955. Under that legislation, employees of MoDOT and the Highway Patrol became members of the retirement system on September 1, 1955. Effective October 1, 1955, the system accepted 109 retirements. The system initially provided only regular retirement and disability benefits and required the employees to share in the cost of the plan.

The plan provisions have changed many times over the years. Today, at no cost to the employees, the system offers not only enhanced retirement and disability benefits, but also benefits for survivors of active and retired members, benefits for qualified terminated vested members and death benefits.

A ten-member Board of Trustees is responsible for the oversight of MPERS. Although MPERS is an instrumentality of the state, as a separate legal entity MPERS is not subject to the state's legislative appropriations process, although the system's administrative spending is governed by a Board-approved "internal" budget. The system's financial information is included in the state's Comprehensive Annual Financial Report as a component unit.

MPERS is financed by employer contributions and investment earnings. All funding from MoDOT and approximately $85 \%$ of funding from the Highway Patrol comes from the State Highway and Transportation Fund. Although Missouri, like most of the country, is facing budget constraints, the employers continue to provide the required contributions.

## Fiscal Year 2007 Highlights

During Fiscal Year 2007, MPERS began working on a project to replace the aging technology used to process thousands of contribution and benefit transactions every year. We are currently in the beginning months of a 23 -month project to implement a total pension management information solution. This project has three components. The first component is the implementation of a new accounting system that went live in early October 2007. The second component, which is already underway, is the implementation of an electronic document management (imaging) system. Back file conversion is scheduled to begin in January of 2008. The final component of this project is the replacement of our current member database and payroll system. The software solution that is being implemented is the latest version of Pension Gold Public Edition. The result of this multimillion-dollar, multiyear project will be a system that is more efficient, reliable and flexible, with enhanced online services for members and employers.

In the last year MPERS has significantly increased interest in a new member education program called Benefit Basics. This program is being offered on an ad hoc basis as requested by the district and troop offices. The Benefit Basics program is designed for younger members to increase the awareness and understanding of our defined benefit plan and its value to our members.

In July, we went live with the first MPERS website. In the past, we disseminated our benefit information through our employers' (MoDOT and the Highway Patrol) websites. In addition to being a place where our members and employers can access our publications and forms, the site provides basic information about the system and the benefits we provide. One of the new site features that has reduced mailing costs and added efficiency for the system is the online retirement seminar enrollment. The new MPERS website can be found at www.mpers.org.

## Financial Information

This report has been prepared in accordance with generally accepted accounting principles for governmental accounting and reporting. The independent firm of Williams Keepers has issued an unqualified opinion (meaning no audit findings) on MPERS financial statements. Internal controls have been established by management to provide reasonable assurance that the financial statements are free of any material misstatements.

As reported in the Financial Section, the system's net assets improved by $\$ 227.3$ million during the fiscal year. The Management's Discussion and Analysis, beginning on page 19 assesses the financial position of the system, and provides an overview of the year's financial activities.

## Actuarial Funding Status

The funding objective of MPERS is to meet future benefit obligations of retirees and beneficiaries through contributions and investment earnings. Our independent actuarial firm determines the actuarial soundness of the plan based on its long term obligations and the sufficiency of current contribution levels to fund the liabilities over a reasonable time frame. In our most recent valuation dated June 30, 2007, our actuary concluded that the System is operating on an actuarially sound basis.

The June 30, 2007 valuation determined the funding ratio to be $58.2 \%$, recognizing an Unfunded Actuarial Accrued Liability (UAAL) of $\$ 1.211$ billion.

## Investment Activities

The state statutes allow the system to make investments using the same care, skill, and diligence that a prudent person acting in a similar capacity would use. In fulfilling this obligation, the Board of Trustees has established a formal investment policy to clearly define the roles and responsibilities of the Board, staff and consultants, and to ensure that system assets are invested in a diversified portfolio following prudent investment standards. The Board of Trustees determines the broad asset allocation policies and return objectives of the Plan, and retains investment staff, consultants, a master custodian and other advisors to implement and execute these policies.

Led by the performance of international equities and real estate, MPERS' fiscal year 2007 return of 18.1 percent (net of fees) ranks in the top twelve percentile of all funds in the ICC public fund universe (MPERS' peer universe). More importantly, MPERS' three and five-year returns now rank in the top 3 and 10 percentile of our peer universe, respectively, which is a testimony that the restructuring of years past is beginning to pay benefits. This year's investment section begins on page 42, and contains additional performance information along with discussion from our chief investment officer regarding initiatives currently underway that we believe will enhance future returns.

## Certificate of Achievement

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to MPERS for its comprehensive annual financial report for the fiscal year ended June 30, 2006. This was the second consecutive year that MPERS has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

## Public Pension Standards Award

MPERS also received the Public Pension Coordinating Council’s Public Pension Standards 2006 Award. It is the third consecutive year during which MPERS applied for and received the Council's award in recognition of meeting professional plan design and administration standards. The Public Pension Coordinating Council is a confederation of the National Association of State Retirement Administrators, the National Conference on Public Employee Retirement Systems, and the National Council on Teacher Retirement.

## Acknowledgements

This report, prepared by the MPERS staff, is intended to provide comprehensive and reliable information about the System, to demonstrate compliance with legal provisions, and to allow for the evaluation of responsible stewardship of the funds of the System.

Copies of this report are provided to the Governor, the State Auditor, and the Joint Committee on Public Employee Retirement. It is also being distributed to all MoDOT divisions and district offices and Highway Patrol general headquarters and troop headquarters. These offices form the link between MPERS and its members, and their cooperation contributes significantly to the success of MPERS. We hope all recipients of this report find it informative and useful. Additional copies will be furnished upon request.

We express our gratitude to the members of the Board, the staff, the consultants, and the many people who have worked so diligently to assure the continued successful operation of MPERS.

Respectfully submitted,


Norm Robinson
Executive Director


Duane Michie Chairman

MPERS is governed by a Board of Trustees. As set out in Section 104.160 of the Revised Statutes of Missouri, the Board is comprised of ten members:


Duane Michie Board Chairman
Highways \& Transportation
Commissioner
Term Expires 3-1-2009


James B. Anderson Commission Member
Highways \& Transportation
Commissioner
Term Expires 3-1-2009


Pete Rahn
Director of the Missouri Department of Transportation Ex-Officio Member


Sue Cox MoDOT Employees' Representative
Elected by MoDOT Employees
Term Expires 7-1-2010


Representative Charlie Schlottach State Representative District 111


Mike Kehoe
Board Vice-Chairman
Highways \& Transportation
Commissioner
Term Expires 3-1-2011


Senator John Griesheimer State Senator

District 26
Appointed by
President Pro-Tem of the Senate


Bob Sfreddo
Retiree Representative Elected by Retired
Members of MPERS
Term expires 7-1-2010


Colonel Jim Keathley Superintendent of the Missouri State Highway Patrol Ex-Officio Member


Lieutenant Juan Villanueva Highway Patrol Employees' Representative
Elected by Patrol Employees Term Expires 7-1-2010

## Retirement System Staff

Our Mission is to provide a foundation for financial security to plan participants by delivering quality benefits and exceptional member service through professional plan administration and prudent management of assets, at a reasonable cost to the taxpayers of Missouri.


Bottom Row: Julie Berhorst, Lois Wankum \& Mariel Hale
Middle Row: Larry Krummen, Susie Dahl, Norm Robinson \& Dan Pritchard
Top Row: Bev Wilson, Angel Backes, Mary Jordan, Jennifer Schmitz \& Jennifer Even

## Director's Office

The Director's Office staff provides administrative oversight and support in the areas of legislation, operations, benefits, and investments.

## Financial Services

The Financial Services section is responsible for maintaining all the financial records of MPERS. The senior financial officer (accountant) interacts with the investment custodian, the auditors, the depository bank, Missouri's Department of Revenue, and the Internal Revenue Service. In addition, the accountant assists the chief investment officer in tracking and predicting target cash balances, participates in annual budget development, prepares monthly budget-to-actual reports, and calculates monthly premium payments to the long-term disability insurer. The accountant also processes MPERS' semi-monthly office payrolls, reconciles monthly benefit payments and contributions/payrolls posted, and reconciles investment activity.

## Investments

The Investment section works closely with the general investment consultant to oversee the investment portfolio and provide consulting services to the board and the executive director. This includes, but is not limited to: a) formulating investment policy and asset recommendations; b) providing recommendations on the selection, monitoring and evaluation of external investment advisors; c) measuring and reporting on investment performance; d) conducting market research on political, financial, and economic developments that may affect the system; and e) serving as a liaison to the investment community.

## Legal Services

The Legal Services section is responsible for reviewing contracts (including investment contracts) for any legal problems, defending and prosecuting lawsuits, giving legal advice to staff on the application of state and federal statutes and cases to the operation of the retirement system and responding to legal inquiries from members and their attorneys.

## Member Services

The Member Services section consists of two units devoted to serving member needs.

The Benefits Unit is responsible for contact with the membership regarding the benefit programs administered by MPERS, which include retirement and disability. The benefit staff is responsible for preparing and delivering the pre-retirement and benefit basics seminars in addition to assisting with the development of member communication material.

The Payroll Unit is responsible for establishing and maintaining all membership records including maintenance of member data on the retirement master and verifying retirement calculations; balancing payroll deductions; verifying SAM II data against exception reports; and entering payroll, service, and leave data into the system's computerized database.

## Administrative Organization

The Executive Director of MPERS has charge of the offices and records of the system and hires such employees deemed necessary, subject to the approval of the Board of Trustees. The system employs twelve full-time staff.


## Professional Services

The following firms were retained at fiscal year-end by the Board of Trustees to serve in professional capacities or provide consultant services. Please refer to pages 49 and 50 in the Investment Section for the Schedule of Investment Expenses and Brokerage Commissions for the investment professionals.

| Actuary | Legislative Consultant |
| :---: | :---: |
| Gabriel, Roeder, Smith \& Company Southfield, Michigan | Jim Moody <br> Jefferson City, Missouri |
| Auditor | Master Trustee/Custodian |
| Williams-Keepers Jefferson City, Missouri | The Northern Trust Company Chicago, Illinois |
| Business Consultant | Risk Management/Insurance Consultant |
| MAXIMUS <br> Waltham, Massachusetts | The Standard Insurance Company Portland, Oregon Charlesworth Benefits Overland Park, Kansas |
| Investment Consultant |  |
| Summit Strategies Group St. Louis, Missouri |  |

## Professional Services (continued)

## Investment Managers

Aberdeen Asset Management Philadelphia, Pennsylvania
Acadian Asset Management Boston, Massachusetts
AEW Partners Boston, Massachusetts
Albourne America San Francisco, California
Algert Coldiron Investments (ACI) San Francisco, California
Apollo Real Estate .New York, New York
AQR Capital Management Greenwich, Connecticut
Assiduous Strategic Investment (ASI) .Charlotte, North Carolina
Audax Group. Boston, Massachusetts
AXA Rosenberg Orinda, California
Barclays Global Investors San Francisco, California
BlackRock, Inc. ..... New York, New York
Bridgewater Associates Westport, Connecticut
CQS Management London England
CarVal Investors (CVI) .Minnetonka, Minnesota
EIF Management. ..... Needham, Massachusetts
Enhanced Investment Technologies (INTECH) ..... Palm Beach Gardens, Florida
GMO Boston, Massachusetts
Grove Street Advisors Wellesley, Massachusetts
ING Clarion New York, New York
Julius Baer Investment Management New York, New York
Och-Ziff Real Estate. New York, New York
Paulson and Co. ..... New York, New York
Pinnacle Associates New York, New York
Principal Global Investors ..... Des Moines, Iowa
RMK Timberland. Winston-Salem, North Carolina
Rothschild Asset Management New York, New York
Silchester International Investors Limited New York, New York
Stark Investments (Sheperd) Milwaukee, Wisconsin
The Northern Trust Company

$\qquad$
Chicago, Illinois
Urdang Plymouth Meeting, Pennsylvania
Vicis Capital ..... New York, New York
Western Asset Management Company ..... Pasadena, California

## Financial Section

2005 West Broadway, Suite 100, Columbia, MO 65203
OfficE (573) 442-6171 fax (573) 777-7800
3220 West Edgewood, Suite E, Jefferson City, MO 65109
Office (573) 635-6196 $\operatorname{FAx}$ (573) 644-7240
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The Board of Trustees of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System

We have audited the accompanying statements of plan net assets of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System) as of June 30, 2007 and 2006, and the related statements of changes in plan net assets for the years then ended. These financial statements are the responsibility of the System's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with U.S. generally accepted auditing standards. 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 audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the plan net assets of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System at June 30, 2007 and 2006, and the changes in plan net assets for the years then ended, in conformity with U.S. generally accepted accounting principles.

The management's discussion and analysis on pages 19 through 21 and the schedules of funding progress and employer contributions on pages 36 and 37 are not a required part of the basic financial statements but are supplementary information required by the Governmental Accounting Standards Board. The required supplementary information is the responsibility of management of the System. Limited procedures were applied by other auditors to the required supplemental information for the years ended June 30, 2005, 2004, 2003, and 2002 and the management's discussion and analysis for the year ended June 30, 2005. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the required supplementary information, for the years ended June 30, 2007 and 2006. However, we did not audit the information and express no opinion on it.

Our audit was made for the purpose of forming an opinion on the financial statements taken as a whole. The supplementary information included on pages 38 through 40 is presented for purposes of additional analysis and is not a required part of the basic financial statements of the System. Such information has been subjected to the auditing procedures applied in the audits of the financial statements and, in our opinion, is fairly stated in all material respects in relation to the financial statements taken as a whole.


November 16, 2007

American Institute of Certified Public Accountants Missouri Society of Certified Public Accountants PKF North American Network

## Management's Discussion and Analysis

The management of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System, or MPERS) provides this discussion and analysis of the System's financial performance during fiscal year 2007 (FY07) and fiscal year 2006 (FY06). While this discussion is intended to summarize the financial status of the System, readers should consider this information in conjunction with the information that is furnished in the more detailed financial statements.

## BASIC FINANCIAL STATEMENTS DESCRIPTIONS

As required by the Governmental Accounting Standards Board (GASB) accounting standards, this financial report consists of Management's Discussion and Analysis (this section), the basic financial statements (including notes to the basic financial statements), and other required supplementary information.

Financial Statements report information about the System, using accounting methods similar to those used by private-sector companies, by using the economic resources measurement focus and accrual basis of accounting. These statements provide both long-term and short-term information about the System's overall financial status. These statements follow this Management's Discussion and Analysis section:

- The Statement of Plan Net Assets includes all the System's assets and liabilities, with the difference between the two reported as net assets.
- The Statement of Changes in Plan Net Assets accounts for all the current year's additions (income) and deductions (expenses), regardless of when cash is received or paid.

Notes to the Financial Statements are included following the financial statements. The notes to the financial statements provide additional information that is essential to a full understanding of the data provided in the financial statements.

Required Supplementary Information follows the notes and further supports the information in the financial statements.

## FINANCIAL ANALYSIS

Following is summarized data from the financial statements for the years ended June 30, 2007, 2006, and 2005. The section entitled "Assessment of Overall Financial Position and Results of Operations" provides explanation and analyses of the major reasons for changes in the condensed financial statements.

## CONDENSED FINANCIAL STATEMENTS

The System's combined net assets were $\$ 1.825$ billion at the end of FY07, an increase of $\$ 227$ million over the beginning balance of $\$ 1.598$ billion.

The System's investments represent the main component (92\%) of total assets. The System's investments include holdings of stock, government sponsored enterprises, bonds, mortgages, real estate, timber, securities lending collateral, limited partnerships, and other fixed income investments.

The largest component of liabilities is securities lending collateral. This represents the amount owed for collateral to be returned as the result of securities lent, which is a direct offset to the corresponding asset.

## Summarized Statements of Plan Net Assets <br> (in thousands of dollars)

|  | 6/30/2007 | 6/30/2006 | 6/30/2005 |
| :---: | :---: | :---: | :---: |
| Cash and Receivables | \$ 17,500 | \$ 18,259 | \$ 32,942 |
| Investments | 1,820,831 | 1,595,468 | 1,416,616 |
| Invested Securities Lending Collateral | 150,040 | 118,819 | 158,193 |
| Capital Assets | 627 | 653 | 691 |
| Other Assets | 5 | 2 | 8 |
| Total assets | \$1,989,003 | \$1,733,201 | \$1,608,450 |
| Accounts Payable | 13,753 | 16,452 | 9,188 |
| Securities Lending Collateral | 150,040 | 118,819 | 158,193 |
| Long-Term Debt | 6 | 10 | 14 |
| Total liabilities | \$ 163,799 | \$ 135,281 | \$ 167,395 |
| Total net assets | \$1,825,204 | \$1,597,920 | \$1,441,055 |

Net investment income, a primary component of plan additions, resulted in a gain of $\$ 283.5$ million. This is a $33.62 \%$ increase over the net gain of $\$ 212.2$ million in FY06. The section below further describes and analyzes the major changes between the fiscal years.

## Summarized Statements of Changes in Plan Net Assets (in thousands of dollars)

|  | 6/30/2007 | 6/30/2006 | 6/30/2005 |
| :---: | :---: | :---: | :---: |
| Contributions | \$ 121,794 | \$ 111,543 | \$ 102,605 |
| Net investment income | 283,549 | 212,206 | 144,641 |
| Other income | 32 | 41 | 31 |
| Total additions | \$ 405,375 | \$ 323,790 | \$ 247,277 |
| Benefits | 175,970 | 164,997 | 157,742 |
| Administrative expenses | 2,121 | 1,928 | 1,917 |
| Total deductions | \$ 178,091 | \$ 166,925 | \$ 159,659 |
| Change in net assets | \$ 227,284 | \$ 156,865 | \$ 87,618 |
| Net assets, beginning of year | 1,597,920 | 1,441,055 | 1,353,437 |
| Net assets, end of year | \$1,825,204 | \$1,597,920 | \$1,441,055 |

## ASSESSMENT OF OVERALL FINANCIAL POSITION AND RESULTS OF OPERATIONS

Overall, the financial position of the System improved by $\$ 227.3$ million, reported as the "change in net assets."
The main component of the increase in contributions to the System is in employer contributions. The contribution rate, based on an actuarial recommendation approved by the Board of Trustees, increased effective July 1, 2006. The rate applied to non-uniformed payroll (MoDOT, Civilian Patrol, and MPERS) increased from 30.49\% to 31.10\%. The rate applied to Uniformed Patrol payroll increased from $44.27 \%$ to $44.28 \%$. This increase was intended to improve the funded status of the System.

Net investment income totaled $\$ 283.5$ million in FY07, representing a $18.1 \%$ return for the period. This return compares very favorably to the System's assumed actuarial rate of return of $8.25 \%$, with the total investment income showing an increase of $33.62 \%$ relative to FY06. The return of the System's policy benchmark (the return that would have been earned by investing passively across the broad investment markets) was $17.24 \%$ in FY07, up $4.81 \%$ when compared to a $12.43 \%$ return in FY06. Annual fluctuations within the broad investment markets are outside of the control of the System and are expected to fluctuate from year to year. The Board of Trustees has approved a diversified asset allocation that, over time, is expected to realize the assumed actuarial rate of return of $8.25 \%$.

## CURRENTLY KNOWN FACTS AND RECENT EVENTS

The Board of Trustees approved a decrease in the required state contribution, effective July 1, 2007. The rate applied to non-uniformed payroll (MoDOT, Civilian Patrol, and MPERS) will decrease from 31.10\% to $31.01 \%$. The rate applied to Uniformed Patrol payroll will decrease from $44.28 \%$ to $42.61 \%$. This decrease is a reflection of the favorable investment returns achieved over the last couple of years.

## CONTACTING THE RETIREMENT SYSTEM'S MANAGEMENT

This financial report is designed to provide a general overview of the System's finances. Questions about this report or requests for additional financial information should be sent to the MoDOT and Patrol Employees' Retirement System, P.O. Box 1930, Jefferson City, MO 65102-1930.

## Statements of Plan Net Assets

## ASSETS:

Cash
Receivables
Contributions
Accrued interest and income
Investment sales
Other
Total Receivables
Investments, at fair value (Note 2)
Stocks and Rights/Warrants
Government obligations
Corporate bonds
Real estate
Mortgages and Asset-Backed Securities
Absolute Return
Tactical Fixed Income
Short term investments
Venture Capital \& Partnerships Total Investments

Invested securities lending collateral
Prepaid expenses
Capital Assets
Land
Building
Equipment
Accumulated depreciation
Net Capital Assets

## TOTAL ASSETS

## LIABILITIES:

Capital lease
Accounts payable
Accrued BackDROP payments payable
Security lending collateral
Investment purchases
TOTAL LIABILITIES

## NET ASSETS HELD IN TRUST

 FOR PENSION BENEFITS\$ 232,164

4,951,436
4,572,315
7,011,360
$\begin{array}{r}732,843 \\ \hline 17,267,954\end{array}$
\$ 837,782,481
17,886,454
18,506,718
232,630,969
61,488,806
369,634,853
80,384,553
80,350,769
$\begin{array}{r}122,165,133 \\ \hline 1820,830,736\end{array}$
\$ 150,040,049
4,820

84,000
581,619
133,066
$\begin{array}{r}(171,307) \\ \hline 627,378\end{array}$
\$1,989,003,101
\$
5,889
2,767,175
150,040,049
10,985,699
\$ 163,798,812
\$1,825,204,289
\$ 43,242

$$
\begin{array}{r}
4,705,398 \\
3,264,658 \\
9,695,370 \\
549,847 \\
\hline 18,215,273
\end{array}
$$

\$ 755,607,984
19,995,631
20,290,346
231,154,178
51,035,766
249,143,634
75,289,564
140,652,835
52,298,214
1,595,468,152
\$ 118,819,364
1,914

84,000
581,619
122,751
$(135,560)$
652,810
\$1,733,200,755
\$ 10,206
2,112,487
5,970
118,819,364
14,332,658
\$ 135,280,685
\$1,597,920,070

[^0]See accompanying Notes to Financial Statements.

# Statements of Changes in Plan Net Assets 

## ADDITIONS:

Contributions-employer
Contributions-other
Total Contributions

Investment Income - from investing activities
Net appreciation and income
Less: investment expenses
Net Investment Income
Investment Income - from securities lending activities
Security lending gross income
Less: investment expenses
Net Investment Income

Other Income

## TOTAL ADDITIONS

DEDUCTIONS:
Monthly benefits
Administrative expenses

## TOTAL DEDUCTIONS

NET INCREASE IN PLAN NET ASSETS
NET ASSETS HELD IN TRUST
FOR PENSION BENEFITS
Beginning of Year
End of Year
$\begin{array}{r}\$ \quad 121,264,532 \\ 529,926 \\ \hline 121,794,458\end{array}$
\$ 300,593,854
(17,512,525)
283,081,329
\$ 7,136,443
$\begin{array}{r}(6,668,348) \\ \hline 468,095\end{array}$
\$ 31,580
\$ 405,375,462
\$ 175,970,479
2,120,764
\$ 178,091,243
\$ 227,284,219

1,597,920,070
\$1,825,204,289
\$ 111,271,679
$\begin{array}{r}271,038 \\ \hline 111,542,717\end{array}$
\$ 224,165,361
$(12,453,181)$
211,712,180
\$ $5,592,832$
$(5,098,774)$
494,058
\$ 41,542
\$ 323,790,497
\$ 164,997,406
1,927,594
\$ 166,925,000
\$ 156,865,497

1,441,054,573
\$1,597,920,070

[^1]
## NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

As established under Section 104.020, the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is a body corporate and an instrumentality of the State of Missouri. Due to the nature of MPERS' reliance on funding from the Missouri Department of Transportation (MoDOT) and the Missouri State Highway Patrol (MSHP) and control of the overall plan document by the legislative and executive branches of state government, MPERS is considered a part of the State of Missouri financial reporting entity and is included in the State's financial reports as a component unit shown as a pension trust fund.

## Note 1 (a) - Basis of Accounting

The financial statements were prepared using the accrual basis of accounting. Contributions are due to MPERS when employee services have been performed and paid. Contributions are recognized as revenues when due, pursuant to statutory requirements. Benefits are recognized when due and payable and expenses are recorded when the corresponding obligations are incurred. Dividend income is recognized when dividends are declared. Interest income is recognized when earned.

## Note 1 (b) - Method Used to Value Investments

Investments are reported at fair value on a trade date basis. Bonds and stocks traded on a national or international exchange are valued at the reported sales price at current exchange rates. Mortgages are valued on the basis of future principal and interest payments
and are discounted at prevailing interest rates for similar instruments. The fair value of real estate investments are based on net asset value estimates provided by the general partners' administrators or portfolio managers, which are compared to independent appraisals. The value of private equity and other alternative investments that do not have an established market are determined based upon the most current net asset values and activities through year end. When not readily available, alternative investments are valued based on good faith determination by the General Partner.

## Note 1 (c) - Capital Assets

MPERS capitalizes assets with an expected useful life greater than one year with a cost of greater than $\$ 1,000$. Capital assets are depreciated on the straight-line method over the estimated useful lives of the related assets. The estimated useful lives are as follows:

$$
\begin{array}{lr}
\text { Furniture and Equipment } & 5-10 \text { years } \\
\text { Building and Improvements } & 30 \text { years }
\end{array}
$$

## Note 1 (d) - Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

## NOTE 2 - PLAN DESCRIPTION

MPERS, established under Section 104.020, is a body corporate and an instrumentality of the state as a multiple-employer, public employee retirement system with two primary benefit structures known as the Closed Plan and the Year 2000 Plan. These plans provide retirement, survivor, and disability benefits for employees of MoDOT, MSHP, and MPERS staff. These plans are administered in accordance with the requirements of a cost sharing, multiple-employer, public employee retirement plan and in accordance with the Revised Statutes of Missouri. In MPERS are vested the powers and duties specified in sections 104.010 to 104.312 and 104.601 to 104.805 and 104.1003 to 104.1093 , RSMo.,
and such other powers as may be necessary or proper to enable it, its officers, employees, and agents to carry out fully and effectively all the purposes outlined pursuant to these sections. Responsibility for the operation and administration of the system is vested in the Board of Trustees. Detailed information regarding contributions can be found in Note 5.

Generally, all covered employees hired before July 1, 2000 are eligible for membership in the Closed Plan. Generally, all covered employees hired on or after July 1, 2000 are eligible for membership in the Year 2000 Plan.

Membership in the Closed and Year 2000 Plans as of June 30, consists of the following:

|  | FYY7 |  | FY07 | FY06 |
| :--- | :---: | :---: | :---: | :---: |
| Total |  |  |  |  |$|$| Year 2000 |
| :--- |

## Closed Plan Description

Employees covered by the plan are fully vested for benefits upon receiving five years of creditable service. Under the Closed Plan, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 65 with 4 or more years of creditable service (active);
- Age 65 with 5 or more years of creditable service (terminated \& vested);
- Age 60 with 15 or more years of creditable service (active or terminated \& vested); or
- "Rule of 80 " - at least age 48 with sum of your age and service equaling 80 or more (active or terminated \& vested).

For uniformed patrol members the following provisions apply:

- Age 55 with 4 or more years of creditable service (active);
- Age 55 with 5 or more years of creditable service (terminated \& vested);
- "Rule of 80 " - at least age 48 with sum of your age and service equaling 80 or more (active or terminated \& vested); or
- Mandatory retirement at age 60 (active).

All non-uniformed members may retire early with reduced benefits at age 55 with at least 10 years of creditable service.

The base benefit in the Closed Plan is equal to $1.6 \%$ multiplied by the final average pay multiplied by years of creditable service. For members of the uniformed patrol, the base benefit is calculated by applying the same formula and then multiplying the product by 1.333333 .

Retired uniformed members will receive an additional benefit of $\$ 90$ per month plus cost-of-living adjustments (COLAs) until attainment of age 65. This payment however, is reduced by any amount earned during gainful employment. This benefit is not available to uniformed members hired after January 1, 1995.

For members employed prior to August 28, 1997, COLAs are provided annually based on $80 \%$ of the change in the consumer price index for all urban consumers for the United States (CPI-U) with a minimum rate of $4 \%$, and a maximum rate of $5 \%$, until the cumulative amount of COLAs equals $65 \%$ of the original benefit. Thereafter the $4 \%$ minimum rate is eliminated and the annual COLAs rate will be equal to $80 \%$ of the increase in the CPI-U with an annual maximum of $5 \%$. For members employed on or after August 28, 1997, COLAs are provided annually based on $80 \%$ of the increase in the CPI-U up to a maximum rate of $5 \%$.

The BackDROP is a payment option that is available to eligible members upon retirement. This option provides for a benefit to be calculated as if the member elected to retire at a previous date. If the BackDROP is elected, the monthly benefit payable on the actual retirement date is based on the benefit that would have been received by the member had he/she left employment and retired on the BackDROP date. In addition, the member will receive a lump sum payment equal to $90 \%$ of the life income annuity amount the member would have received during the BackDROP period. This lump sum amount includes any COLAs and other benefit increases; also, credit will be received for the unused sick leave balance as of the date of retirement.

The life income annuity payment option (which contains no provision for survivorship) and the life income with 60 or 120 month guaranteed payment options are available to all members. Joint and $50 \%$ or $100 \%$ survivor options are available if married at the time of retirement. In the Closed Plan, the reduction for the
joint \& $100 \%$ survivor option is based on the difference between the age of the member and the survivor. There is no reduction for the joint and $50 \%$ survivor option.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement and the spouse preceded the member in death and then a remarriage occurred.

The member has one year from the date of marriage to re-elect and name a new spouse.

All members who retire from active employment or longterm disability, or begin receiving normal or work-related disability benefits, on or after September 28, 1985, are provided a $\$ 5,000$ death benefit payable to designated beneficiaries.

## Year 2000 Plan Description

Employees covered by the plan are fully vested for benefits upon receiving five years of creditable service. Under the Year 2000 Plan, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:

- Age 62 and with 5 or more years of creditable service (active or terminated $\&$ vested);
- "Rule of 80 " - at least age 48 with sum of your age and service equaling 80 or more (active or terminated $\&$ vested).

For uniformed patrol members the following provisions apply:

- "Rule of 80 " - at least age 48 with sum of your age and service equaling 80 or more (active or terminated $\&$ vested);
- Mandatory retirement at age 60 with 5 or more years of creditable service (active only).

All members may retire early with reduced benefits at age 57 with at least 5 years of creditable service. For the Years Ended June 30, 2007 and 2006

The base benefit in the Year 2000 Plan is equal to $1.7 \%$ multiplied by the final average pay multiplied by years of creditable service. Members retiring under the Rule of 80 and uniform patrol members retiring at the mandatory retirement age (currently 60) with five years of creditable service, receive an additional temporary benefit until age 62, equivalent to $0.8 \%$ multiplied by final average pay multiplied by years of creditable service.

COLAs are provided annually based on $80 \%$ of the change in the CPI-U up to a maximum rate of $5 \%$.

The BackDROP is a payment option that may be available to members upon retirement. This option provides for a monthly benefit to be calculated as if the member elected to retire at a previous date. If the BackDROP is elected, the monthly benefit payable on the actual retirement date is based on the benefit that would have been received by the member had they left employment and retired on the BackDROP date. In addition, the member will receive a lump sum payment equal to $90 \%$ of the life income annuity amount the member would have received during the BackDROP period. This lump sum amount includes any temporary benefits, COLAs and other benefit increases; also, credit will be received for the unused sick leave balance as of the date of retirement.

The life income annuity payment option (with no provision for survivorship) and the life income with 120 or 180 months guaranteed payment options are available
to all members. Joint and $50 \%$ or $100 \%$ survivorship options are available if married at the time of retirement. The reduction for the joint and $50 \%$ or $100 \%$ survivor options are based on the member's age at retirement, as well as the age difference between the age of the member and the survivor.

If a reduced joint and survivor option is chosen at the time of retirement and the spouse precedes the member in death, the benefit will revert back (pop-up) to a normal annuity.

Members may name a new spouse if:

- They were single at retirement and since married;
- They elected a spouse option at the time of retirement and the spouse preceded the member in death and then a remarriage occurred.

The member has one year from the date of marriage to re-elect and name a new spouse.

All members who retire from active employment or longterm disability, or begin receiving work related disability benefits, on or after July 1, 2000, are provided a $\$ 5,000$ death benefit payable to designated beneficiaries.

Additionally, administrative expenses for both plans are financed through the contribution rate.

## NOTE 3 - DEPOSITS AND INVESTMENTS

The Board of Trustees has established policies and procedures by which funds are invested by bank custodians and investment managers. Section 104.150, RSMo., provides the authority for the Board to invest MPERS funds.

Note 3 (a) - Deposit and Investment Policies

## Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the MPERS' investment in a single issuer. Unless otherwise permitted under an
investment management agreement, MPERS policies limit each equity manager to investing a maximum of $5 \%$ of the market value of the portfolio in any single company. Similarly, fixed income managers are limited to investing $3 \%$ of the portfolio into obligations of a single corporation unless authorized in the investment management agreement. Obligations of the U.S. Government or U.S. Government agencies may be held in any amount.

## Investment Custodial Credit Risk

Custodial credit risk is an investment risk in that, in the event of the failure of the counterparty to a transaction, MPERS will not be able to recover the value of its investment or the collateral securities in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in MPERS' name, and are held by either: a) the counterparty or b) the counterparty's trust department or agent but not in MPERS' name. It is MPERS policy to require all investments be clearly marked as to ownership and, to the extent possible, registered in MPERS name.

## Cash Deposit Custodial Credit Risk

Cash deposit custodial credit risk is the risk that, in the event of the failure of a depository financial institution, MPERS will not be able to recover deposits or will not be able to recover collateral securities in the possession of an outside party. Missouri state law requires all public funds be collateralized with acceptable securities having market values of at least $100 \%$ of the amount of funds on deposit, less any amount covered by FDIC insurance.

## Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment.
MPERS' formal investment policy does not limit investment maturities as a means of managing its exposure to interest rates. Interest rate risk is most prevalent within the fixed income allocation, where the Board of Trustees has set a target allocation as reflected in the investment policy. MPERS' investments include terms related to interest rate changes. These options are incorporated into individual manager strategies. The investments include benchmark indices, reset dates, and embedded options such as calls, puts, and mortgage prepayments. All such items are reported at fair value on the Statement of Plan Net Assets.

## Investment Credit Risk

Investment credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Unless otherwise permitted under an investment management agreement, it is MPERS' policy to limit fixed income managers to purchasing securities
possessing a minimum credit rating of "Baa" by Moody's and "BBB" by Standard \& Poor's. Issues subsequently downgraded below these ratings must be sold as soon as is prudently possible unless the Board of Trustees approves retention.

## Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. MPERS is subjected to foreign currency risk through its exposure to fixed income and equity investments that are denominated in a foreign currency. While the valuation of assets denominated in foreign currencies is clearly impacted by movements in exchange rates, they also provide diversification within the overall investment portfolio by offering protection against a depreciating U.S. dollar. To manage foreign currency risk, the Board of Trustees established a formal investment policy that includes target and permissible ranges of foreign securities within the investment portfolio.

## Note 3 (b) - Cash Deposits

Cash balances include short-term securities held by the custodial bank to meet future obligations and operating balances held by the depository bank. As of June 30, 2007 and 2006, MPERS had carrying amount of deposits of $(\$ 1,020,908)$ and $(\$ 1,314,549)$, respectively, and a bank balance of $\$ 345$ and $\$ 219$, respectively. The FDIC covered the bank balances. To maximize investment income, cash is invested in overnight repurchase agreements, thus causing the negative cash amounts disclosed above. The balances in these repurchase agreements for 2007 and 2006 were $\$ 1,253,071$ and $\$ 1,357,791$ respectively. As of June 30, 2007 and 2006, no investments were held as repurchase agreements that were uninsured or unregistered, with securities held by the counter party or by its trust department or agent but not in MPERS' name.

## Note 3 (c) - Concentrations

No investments in any one organization (other than those issued or sponsored by the U.S. government and those in pooled investments) represent five percent of plan net assets.

# Notes to the Financial Statements For the Years Ended June 30, 2007 and 2006 

Note 3 (d) - Investments
The following table presents the summary of MPERS' investments by type at June 30, 2007 and 2006.

\left.|  | 2007 |  | 2006 |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Fair |  |  |  |  |
| Fair |  |  |  |  |$\right)$

## Note 3 (e) - Investment Interest Rate Risk

The following table summarizes the maturities of government obligations, corporate bonds, mortgages and asset-backed securities, and tactical fixed income on the Statement of Plan Net Assets as of June 30, 2007, which are exposed to interest rate risk.

| Investment Type | Fair Value | Investment Maturities (in years) as of 6/30/07 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Less than 1 | 1-5 | 6-10 | More than 10 |
| Asset-Backed Securities | \$ 4,498,917 | \$ 0 | \$ 239,733 | \$ 0 | \$ 4,259,184 |
| Commercial Mortgage- |  |  |  |  |  |
| Backed Securities | 43,732,109 | 0 | 0 | 602,879 | 43,129,230 |
| Corporate Bonds | 18,506,718 | 0 | 2,148,737 | 2,875,526 | 13,482,455 |
| Government Agencies | 196,339 | 0 | 0 | 196,339 | 0 |
| Government Bonds | 12,933,775 | 0 | 7,331,196 | 224,737 | 5,377,842 |
| Government Mortgage |  |  |  |  |  |
| Backed Securities | 13,257,781 | 0 | 121,569 | 942,574 | 12,193,638 |
| Municipal/Provincial Bonds | 4,756,339 | 0 | 0 | 3,047,851 | 1,708,488 |
| Total | \$ 97,881,978 | \$ 0 | \$9,841,235 | \$7,889,906 | \$80,150,837 |
| Pooled Investments | 80,384,553 |  |  |  |  |
| Grand Total | \$178,266,531 |  |  |  |  |

## Note 3 (f) - Investment Credit Ratings

The following table summarizes the credit ratings of the government obligations, corporate bonds, mortgages and asset-backed securities, and tactical fixed income reported on the Statements of Plan Net Assets.

| Investment Type | Quality Rating | 06/30/07 <br> Fair Value | 06/30/06 <br> Fair Value |
| :---: | :---: | :---: | :---: |
| Asset-Backed Securities | A | \$ 0 | \$ 135,349 |
| Asset-Backed Securities | AAA | 4,498,917 | 6,960,948 |
| Commercial Mortgage-Backed Securities | A- | 294,150 | 0 |
| Commercial Mortgage-Backed Securities | AA | 505,076 | 495,208 |
| Commercial Mortgage-Backed Securities | AAA | 31,151,675 | 23,558,548 |
| Commercial Mortgage-Backed Securities | BBB+ | 344,838 | 0 |
| Commercial Mortgage-Backed Securities | not rated | 11,436,369 | 6,570,489 |
| Corporate Bonds | A | 831,361 | 1,904,162 |
| Corporate Bonds | A- | 1,468,528 | 3,252,305 |
| Corporate Bonds | A+ | 992,294 | 1,195,382 |
| Corporate Bonds | AAA | 1,801,377 | 1,215,170 |
| Corporate Bonds | BB+ | 1,567,312 | 1,229,877 |
| Corporate Bonds | BBB | 4,867,033 | 2,467,475 |
| Corporate Bonds | BBB- | 2,073,911 | 2,813,368 |
| Corporate Bonds | BBB+ | 2,145,074 | 2,718,072 |
| Corporate Bonds | Treasury | 435,760 | 0 |
| Corporate Bonds | not rated | 2,324,069 | 3,494,534 |
| Government Agencies | Agency | 196,339 | 0 |
| Government Bonds | AAA | 12,933,775 | 13,921,439 |
| Government Mortgage-Backed Securities | Agency | 13,257,781 | 11,782,250 |
| Government Mortgage-Backed Securities | not rated | 0 | 1,532,974 |
| Municipal/Provincial Bonds | A | 0 | 931,930 |
| Municipal/Provincial Bonds | AAA | 4,756,339 | 5,142,262 |
| Pooled Investments | not rated | 80,384,553 | 75,289,564 |
| Total |  | \$178,266,531 | \$166,611,306 |

For the Years Ended June 30, 2007 and 2006

## Note 3 (g) - Investment Foreign Currency Risk

MPERS' exposure to foreign currency risk as of June 30, 2007 and 2006 was as follows:

| Foreign Currency | Cash and <br> Equivalents | Equities | $06 / 30 / 07$ <br> Total | $06 / 30 / 06$ <br> Total |
| :--- | ---: | ---: | ---: | ---: |
| Australian dollar | $\$ 100,680$ | $\$ 10,756,117$ | $\$ 10,856,797$ | $\$ 9,649,779$ |
| British pound sterling | $1,589,257$ | $47,708,853$ | $49,298,110$ | $51,284,107$ |
| Canadian dollar | 105,760 | $12,336,053$ | $12,441,813$ | $16,722,627$ |
| Czech koruna | $(724,474)$ | $2,435,286$ | $1,710,812$ | $1,430,438$ |
| Danish krone | 60,647 | $2,097,145$ | $2,157,792$ | $1,199,226$ |
| Euro | $(1,349,380)$ | $168,342,258$ | $166,992,878$ | $137,978,091$ |
| Hong Kong dollar | 115,645 | $4,551,730$ | $4,667,375$ | $11,379,624$ |
| Hungarian forint | $(877,227)$ | $5,547,632$ | $4,670,405$ | 0 |
| Indonesian rupiah | 0 | 96,666 | 96,666 | 202,866 |
| Japanese yen | $10,097,856$ | $49,202,971$ | $59,300,827$ | $66,333,620$ |
| Mexican peso | 1,590 | $1,428,654$ | $1,430,244$ | 641,520 |
| New Zealand dollar | 7,134 | 335,381 | 342,515 | 486,163 |
| Norwegian krone | 47,897 | $2,673,125$ | $2,721,022$ | $4,187,911$ |
| Philippine peso | 59,004 | 24,805 | 83,809 | 131,754 |
| Polish zloty | $(777,068)$ | 0 | $(777,068)$ | $(816,441)$ |
| Singapore dollar | 32,721 | 681,970 | 714,691 | $1,146,725$ |
| South African rand | 0 | 0 | 0,676 |  |
| South Korean won | 43,829 | $2,190,164$ | $2,233,993$ | $2,477,022$ |
| Swedish krona | 151,863 | $14,739,403$ | $14,891,266$ | $6,828,128$ |
| Swiss franc | 6,395 | $18,662,703$ | $18,669,098$ | $19,222,640$ |
| Thai baht | 132,341 | 175,551 | 307,892 | 242,155 |
| Turkish Lira | $(332,633)$ | $4,085,068$ | $3,752,435$ | $4,056,504$ |
| Total Exposure Risk | $\underline{\$ 8,491,837}$ | $\underline{\underline{\$ 348,071,535}}$ | $\underline{\underline{\$ 356,563,372}}$ | $\underline{\$ 334,788,135}$ |

## Note 3 (h) - Securities Lending

In accordance with the Board of Trustees' investment policy, MPERS participates in a securities lending program. The Northern Trust Company administers the program. There are no restrictions on the amount of securities that may be lent.

Securities that may be loaned include U.S. government and agency securities, corporate equity, and fixed income securities. Collateral may include cash, U.S. government securities and irrevocable letters of credit. U.S. securities are loaned in exchange for collateral
valued at $102 \%$ of the market value of the securities plus any accrued interest. Non-U.S. securities are loaned in exchange for collateral valued at $105 \%$ of the market value of the securities plus any accrued interest. On June 30, 2007 and 2006, MPERS had no credit risk exposure to borrowers since the amount of collateral exceeded the amount of the loans.

Non-cash collateral cannot be pledged or sold unless the borrower defaults. The average term of the System's loans was approximately 79 days and 108 days as of June 30, 2007 and June 30, 2006, respectively. Cash open collateral is invested in a short-term investment

## Notes to the Financial Statements For the Years Ended June 30, 2007 and 2006

pool, which had an interest sensitivity of 39 days and 41 days as of June 30, 2007 and June 30, 2006, respectively. Cash collateral may also be invested separately in "term loans", in which case the investments match the loan term. These loans can be terminated on demand by either lender or borrower. There were no known violations of legal or contractual provisions, or borrower or lending agent default losses. There are no dividends or coupon payments owing on the securities lent. Securities lending earnings are credited on approximately the fifteenth day of the following month.

Indemnification deals with a situation in which a client's securities would not be returned due to the insolvency of a borrower and Northern Trust Company would fail to live up to its contractual responsibilities relating to the lending of those securities. Northern Trust's responsibilities include performing appropriate borrower and collateral investment credit analyses and demanding adequate types and levels of collateral.

The collateral held (including both cash collateral recognized in the Statements of Plan Net Assets and non-cash collateral) was as follows at June 30:

| Investment Type | 2007 | 2006 |
| :--- | ---: | ---: |
| Equities | $\$ 139,444,727$ | $\$ 104,319,294$ |
| Government \& government |  |  |
| sponsored securities | $12,135,999$ | $13,934,935$ |
| Corporate bonds | 2,658,480 | 6,012,091 |

## NOTE 4 - RECEIVABLES

Receivables consist primarily of pending investment trades, interest and dividends, and employer contributions.

| Type | $\mathbf{2 0 0 7}$ | $\mathbf{2 0 0 6}$ |
| :--- | ---: | ---: |
| Contributions-MoDOT | $\$ 3,300,519$ | $\$ 3,224,827$ |
| Contributions-MSHP Non-Uniformed | 507,683 | 476,568 |
| Contributions-MSHP Uniformed | $1,123,593$ | 995,356 |
| Contributions-Retirement System | 19,641 | 8,647 |
| Commission Recapture | 1,148 | 1,952 |
| Securities Lending | 729,115 | 545,315 |
| Amounts Due From Members | 2,580 | 2,580 |
| Investment Interest \& Income | $4,572,315$ | $3,264,658$ |
| Investment Sales | $\underline{7,011,360}$ | $9,695,370$ |
|  | $\underline{\underline{\$ 17,267,954}}$ | $\underline{\underline{\$ 18,215,273}}$ |

# Notes to the Financial Statements For the Years Ended June 30, 2007 and 2006 

## NOTE 5 - CONTRIBUTIONS

MoDOT, MSHP, and MPERS make contributions to the System. As a non-contributory defined benefit plan, employees do not contribute to the System. MPERS' funding policy provides for actuarially determined employer contributions using the entry-age normal cost method on a closed group basis (consisting of normal cost and amortization of any unfunded accrued liabilities over a 30 -year period, beginning
July 1, 2006). (The objective is to reduce the period by one year each year.) Actuarially determined rates, expressed as percentages of annual covered payroll, provide for amounts sufficient to fund those benefits designated by State statute to be funded in advance.

Actuarial assumptions used to compute contribution requirements are the same as those used to compute the pension benefit obligation.

Required employer contributions totaling $\$ 121,264,532$ and $\$ 111,271,679$ for fiscal years 2007 and 2006, respectively, represent funding of normal costs and amortization of the unfunded accrued liability. Actual contributions made were $100 \%$ of required contributions. Contribution rates determined by the System's actuary for the years ended June 30, 2007 and 2006 are shown below. The Board established actual rates to be the same as the actuarially determined rates.

| 200 Total Contribution Rate |  |  |  |
| :---: | :---: | :---: | :---: |
| 2007 |  |  |  |
| MoDOT, MPERS | Uniformed | MoDOT, MPERS | Uniformed |
| \& Civilian Patrol | Patrol | \& Civilian Patrol | Patrol |
| 31.10\% | 44.28\% | 30.49\% | 44.27\% |

## NOTE 6 - RELATED PARTY TRANSACTIONS

MPERS reimbursed MODOT \$0 and \$52,304 for accounting services in FY07 and FY06, respectively.

MoDOT rents office space from MPERS. This contract is effective from June 2003 through May 2008. This amounted to other income of $\$ 31,104$ during both FY07 and FY06, respectively.

## NOTE 7 - PERSONAL SERVICES AND RETIREMENT PLAN

MPERS employed 12 full-time employees on June 30, 2007 and 2006. Four former MPERS' employees have retired. Full-time employees are also members of the System. For these employees, MPERS accrued $31.10 \%$ of payroll during FY07, amounting
to $\$ 246,318$; and $30.49 \%$ of payroll during FY06, amounting to $\$ 209,301$. This amount has been recorded as both a contribution and administrative expense. Information regarding the retirement plans can be found in Notes 2 and 5 . For the Years Ended June 30, 2007 and 2006

## NOTE 8 - OTHER POSTEMPLOYMENT BENEFITS

In addition to the retirement benefits described above, MPERS provides a portion of health care insurance, in accordance with Missouri state statutes, for its employees who retired from the System with a minimum of 5 years of state service and who participate in the MoDOT and Patrol Insurance Plan. MPERS and participant contributions are
established by the Insurance Plan's Board of Trustees and are approved by the Missouri Highways and Transportation Commission. There are currently three eligible participating retirees. Costs are recognized on a pay-as-you-go basis, with a cost of $\$ 6,786$ and of $\$ 4,055$ for FY07 and FY06, respectively, representing approximately $48 \%$ of the total insurance cost.

## NOTE 9 - CAPITAL ASSETS

Changes in capital assets are summarized below (in thousands):

|  | 06/30/06 <br> Balance | Additions | Deletions/ <br> Retirements | 06/30/07 <br> Balance |
| :---: | :---: | :---: | :---: | :---: |
| Land | \$ 84 | \$ 0 | \$ 0 | \$ 84 |
| Buildings | 582 | 0 | 0 | 582 |
| Office Equipment | 123 | 10 | 0 | 133 |
| Less: Accumulated Depreciation | 136 | 36 | 0 | 172 |
| Total | $\underline{\underline{\$ 653}}$ | \$(26) |  | $\underline{\$ 627}$ |
|  | 06/30/05 <br> Balance | Additions | Deletions/ <br> Retirements | 06/30/06 Balance |
| Land | \$ 84 | \$ 0 | \$ 0 | \$ 84 |
| Buildings | 582 | 0 | 0 | 582 |
| Office Equipment | 121 | 2 | 0 | 123 |
| Less: Accumulated Depreciation | 96 | 40 | 0 | 136 |
| Total | \$691 | \$(38) | \$ 0 | \$653 |

## NOTE 10 - LONG-TERM OBLIGATIONS - CAPITAL LEASES

MPERS entered into a capital lease-purchase agreement in 2004 for a Xerox Workcentre Pro requiring monthly installments of $\$ 413$ through September 30, 2008, interest at $7.774 \%$. The cost of the copier/printer is $\$ 22,490$ and is included in capital assets. Changes in long-term obligations were as follows:

| Type | 6/30/06 <br> Balance | Additions | Reductions | $\mathbf{6 / 3 0 / 0 7}$ <br> Balance |
| :---: | :---: | :---: | :---: | :---: |
| Capital Lease | $\underline{\underline{\$ 10,206}}$ | $\underline{\underline{\$ 0}}$ | $\underline{\underline{\$ 4,317}}$ | $\underline{\underline{\$ 5,889}}$ |
| Type | $\mathbf{6 / 3 0 / 0 5}$ |  |  |  |
| Balance | Additions | Reductions | $\mathbf{6 / 3 0 / 0 6}$ <br> Balance |  |
| Capital Lease | $\underline{\underline{\$ 14,202}}$ | $\underline{\underline{\$ 0}}$ | $\underline{\underline{\$ 3,996}}$ | $\underline{\underline{\$ 10,206}}$ |

Future principal and interest requirements for the lease-purchase are as follows:

| Year Ending June 30 | Amount |
| :--- | :---: |
| 2008 | $\$ 4,959$ |
| 2009 | 1,240 |
| Total minimum lease payments | $\$ 6,199$ |
| Less: interest amount | $(310)$ |
| Present value of minimum lease payments | $\underline{\underline{\$ 5,889}}$ |

## NOTE 11 - OPERATING LEASES

MPERS is committed to three equipment and services related leases through September 2011. Expenditures for the years ended June 30, 2007 and 2006 amounted to $\$ 30,267$ and $\$ 28,864$ respectively. Future minimum lease payments for these leases are as follows:

| Year Ending June 30 | Amount |
| :--- | ---: |
| 2008 | $\$ 2,434$ |
| 2009 | 719 |
| 2010 | 719 |
| 2011 | 180 |
| Total minimum lease payments | $\underline{\underline{\$ 4,052}}$ |

## NOTE 12 - RISK MANAGEMENT

MPERS is exposed to various risks of loss related to natural disasters, asset theft or damage, errors and omissions, torts, and employee injuries.

MPERS has purchased commercial insurance related to capital asset loss and damage. Ancillary coverage provided through the property policy includes coverage for accounts receivable, loss of money and securities,
employee dishonesty, and forgery and alterations. MPERS carries a $\$ 2$ million umbrella liability policy. MPERS has coverage through Missouri Highway and Transportation Commission's Self-Insurance Fund related to workers' compensation. The State's Legal Expense Fund covers all state employees and officers, and MPERS has purchased surety bonds for the director and staff.

## NOTE 13 - COMMITMENTS

During fiscal year 2007, the System purchased a new pension administration software system. Total software and related consulting services are estimated
to be approximately $\$ 3,000,000$ of which approximately $\$ 147,000$ has been expensed prior to June 30, 2007.

# Required SupplementaryInformation 

Schedule of Funding Progress ${ }^{(1)}$

| Year <br> Ended <br> June 30 | Actuarial <br> Asset <br> Value | Actuarial Accrued <br> Liability (AAL) <br> Entry Age | Unfunded <br> AAL <br> (UAAL) | Funded <br> Ratio | Actuarial <br> Covered <br> Payroll | UAAL as a <br> Percentage of <br> Covered Payroll |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 2002 | $\$ 1,450,507,432$ | $\$ 2,358,452,163$ | $\$ 907,944,731$ | $61.50 \%$ | $\$ 308,654,239^{(2)}$ | $294.16 \%$ |
| 2003 | $1,363,952,522$ | $2,418,145,741$ | $1,054,193,219$ | 56.20 | $319,345,949^{(2)}$ | 330.11 |
| 2004 | $1,331,588,207$ | $2,492,918,976$ | $1,161,330,769$ | 53.41 | $316,224,4688^{(2)}$ | 367.25 |
| $2005^{(3)}$ | $1,417,348,982$ | $2,627,409,025$ | $1,210,060,043$ | 53.94 | $334,030,151^{(2)}$ | 362.26 |
| 2006 | $1,521,142,953$ | $2,740,437,837$ | $1,219,294,884$ | 55.51 | $341,227,890^{(2)}$ | 357.33 |
| $2007^{(3)}$ | $1,685,807,004$ | $2,897,267,409$ | $1,211,460,405$ | 58.19 | $370,598,6755^{(2)}$ | 326.89 |

${ }^{(1)}$ Prior to 2003 this schedule was not required for the LTD Plan because it used the aggregate funding method. Therefore the assets and liabilities were excluded prior to 2003. In 2003 the LTD Plan was merged into the base plan. Assets and liabilities for existing LTD members are included beginning in 2003.
(2) Values are estimated from contribution rate and amount.
(3) New assumptions adopted.

## Notes to the Schedules of Trend Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:
Valuation Date $\qquad$ June 30, 2007
Actuarial Cost Method
Entry Age Normal
Amortized Method Level percent of payrollRemaining Amortization Period ....................................... 28 years from July 1, 2008Amortization Approach
$\qquad$ ClosedAsset Valuation Method3 -year smoothing
Actuarial Assumptions:
Investment Rate of Return ..... 8.25\%
Projected Salary Increase ..... $3.75 \%$ to $11.75 \%$
Cost-of-Living Adjustments 2.6\% Compound
Includes Wage Inflation at. ..... 3.75\%

# Required Supplementary Information 

## Schedule of Employer Contributions ${ }^{(1)}$

## Uniformed Patrol

| Year <br> Ended | Estimated <br> Covered <br> June 30 | Payroll | Actual <br> Employer <br> Contributions | Actual <br> Employer <br> Contribution \% | Annual <br> Required <br> Contribution <br> (ARC) $\%$ | Annual <br> Pension <br> Cost (APC) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | | Percentage |
| :---: |
| of APC |
| Contributed |

${ }^{(1)}$ Prior to 2003 this schedule was not required for the LTD Plan because it used the aggregate funding method. Therefore the assets and liabilities were excluded prior to 2003. In 2003 the LTD Plan was merged into the base plan. Assets and liabilities for existing LTD members are included beginning in 2003.
(2) Values are estimated from contribution rate and amount.
(3) New assumptions adopted.
(4) The ARC is the rate adopted by the Retirement Board. This rate exceeded the actuarially calculated rate.

## MoDOT, Civilian Patrol \& MPERS ${ }^{(5)}$

| Year <br> Ended <br> June 30 | Estimated Covered Payroll | Actual Employer Contributions | Actual <br> Employer <br> Contribution \% | Annual Required Contribution (ARC) \% | Annual <br> Pension Cost (APC) | Percentage of APC <br> Contributed |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2002 | \$260,972,727 ${ }^{(2)}$ | \$60,780,548 | 23.29\% | 23.29\% ${ }^{(4)}$ | \$60,780,548 | 100.00\% |
| 2003 | 271,173,431 ${ }^{(2)}$ | 63,156,292 | 23.29 | 23.29 (4) | 63,156,292 | 100.00 |
| 2004 | 269,890,983 ${ }^{(2)}$ | 68,932,856 | 25.54 | 25.54 | 68,932,856 | 100.00 |
| 2005 | 283,070,661 ${ }^{(2)}$ | 80,052,383 | 28.28 | 28.28 | 80,052,383 | 100.00 |
| 2006 | 286,784,251 ${ }^{(2)}$ | 87,440,518 | 30.49 | 30.49 | 87,440,518 | 100.00 |
| $2007{ }^{(3)}$ | 302,223,556 ${ }^{(2)}$ | 93,991,526 | 31.10 | 31.10 (4) | 93,991,526 | 100.00 |

(1) Prior to 2003 this schedule was not required for the LTD Plan because it used the aggregate funding method. Therefore the assets and liabilities were excluded prior to 2003. In 2003 the LTD Plan was merged into the base plan. Assets and liabilities for existing LTD members are included beginning in 2003.
(2) Values are estimated from contribution rate and amount.
(3) New assumptions adopted.
(4) The ARC is the rate adopted by the Retirement Board. This rate exceeded the actuarially calculated rate.
(5) Includes non-uniformed employees of MoDOT, Patrol, and MPERS.

## MoDOT \& Patrol Employees' Retirement System

## Schedules of Administrative Expenses <br> For the Years Ended June 30, 2007 and 2006

2007
PERSONAL SERVICES:

| Salary expense | $\$ 701,464$ | $\$ 635,650$ |
| :--- | ---: | :--- |
| Employee benefit expense | 522,134 | $\mathbf{4 0 5 , 7 7 9}$ |
| Personal Services | $\mathbf{\$ 1 , 2 2 3 , 5 9 8}$ | $\mathbf{\$ 1 , 0 4 1 , 4 2 9}$ |

PROFESSIONAL SERVICES:

| Actuarial services | $\$ 84,613$ | $\$ 103,680$ |
| :--- | ---: | ---: |
| Actuary Audit services | $\$ 0$ | $\$ 39,000$ |
| Computer services | 217,260 | 199,722 |
| Audit expense | 20,500 | 17,000 |
| Disability program | 27,360 | 36,723 |
| Consultant fees | 68,128 | 75,175 |
| Pension Administration System | 147,700 | 0 |
| Other | 4,697 | 1,829 |
| Total Professional Services | $\mathbf{\$ 5 7 0 , 2 5 8}$ | $\mathbf{\$ 4 7 3 , 1 2 9}$ |

## MISCELLANEOUS:

MoDOT reimbursement
Depreciation
Meetings/Travel/Education
Equipment/Supplies
Printing/Postage
Insurance premium
Bank service charge
Building expenses
Other
Total Miscellaneous
TOTAL ADMINISTRATIVE EXPENSES
\$
0
35,746
83,435
41,434
66,258
1,193
6,030
36,743
56,069
\$ 326,908
\$2,120,764
\$ .52,304
39,729
105,411
30,106
91,089
9,303
6,290
35,694
43,110
\$ 413,036
\$1,927,594

# MoDOT \& Patrol Employees' Retirement System <br> Schedules of Investment Expenses <br> For the Years Ended June 30, 2007 and 2006 

2007
2006

| INVESTMENT INCOME EXPENSES: |  |  |
| :---: | :---: | :---: |
| Management fees |  |  |
| Aberdeen (formerly Deutsche Asset Mgmt) | \$ 292,799 | \$ 242,349 |
| Acadian Asset Management | 826,285 | 964,705 |
| Acadian Emerging Markets | 242,761 | 0 |
| ACI - Citco | 878,439 | 0 |
| AEW | 187,500 | 234,375 |
| Albourne | 240,000 | 40,000 |
| Apollo | 224,999 | 205,890 |
| AQR | 466,298 | 427,697 |
| Artisan Partners | 0 | 107,726 |
| ASI | 49,136 | 0 |
| Audax | 135,969 | 0 |
| AXA Rosenberg | 284,810 | 61,642 |
| Barclays Global Investors | 1,041,963 | 1,165,514 |
| Blackrock, Inc. | 107,807 | 103,163 |
| Bridgewater Associates | 1,100,655 | 1,178,335 |
| CQS | 147,143 | 0 |
| CVI | 262,774 | 0 |
| EIF | 0 | 0 |
| GMO | 727,215 | 704,632 |
| Grove Street | 2,000,000 | 2,000,000 |
| ING Clarion | 655,746 | 612,638 |
| ING Mexico | 50,000 | 0 |
| Intech | 456,236 | 417,396 |
| Julius Baer Investment Management | 771,312 | 801,729 |
| Och-Ziff Real Estate | 225,000 | 225,000 |
| Paulson | 850,099 | 0 |
| Pinnacle | 286,441 | 50,106 |
| Principal Global Investors | 1,201,713 | 1,104,516 |
| RMK Timberland | 205,989 | 205,989 |
| Rothschild Asset Management | 870,951 | 200,438 |
| Shepard | 656,989 | 0 |
| Silchester International Investors | 704,780 | 482,173 |
| Urdang | 156,036 | 187,500 |
| Urdang II | 31,250 | 0 |
| Vicis | 321,600 | 0 |
| Western Asset Management Co. | 172,470 | 160,472 |
| Total management fees | \$16,833,165 | \$11,883,985 |
| Investment custodial fee | \$298,277 | \$306,951 |
| Performance management | 40,646 | 35,854 |
| General Consultant (monitoring) fee | 168,750 | 150,000 |
| Other investment expenses | 171,687 | 76,391 |
| TOTAL INVESTMENT INCOME EXPENSES | \$17,512,525 | \$12,453,181 |
| SECURITIES LENDING EXPENSES: |  |  |
| Borrower Rebates | \$ 6,467,899 | \$ 4,887, 160 |
| Bank Fees | 200,449 | 211,614 |
| TOTAL SECURITIES LENDING EXPENSES | \$6,668,348 | \$5,098,774 |

## Supplementary Information

## MoDOT \& Patrol Employees' Retirement System

## Schedules of Professional and Consultant Expenses

For the Years Ended June 30, 2007 and 2006

|  | 2007 | 2006 |
| :---: | :---: | :---: |
| Actuarial services | \$ 84,613 | \$ 103,680 |
| Actuarial audit services |  | \$39,000 |
| Computer services | 217,260 | 199,722 |
| Audit services | 20,500 | 17,000 |
| Disability administrative services | 27,360 | 36,723 |
| Legislative consultant | 25,000 | 20,000 |
| Customer service, benefit delivery, and technology improvement projects | 27,128 | 48,295 |
| Pension Administration System | 147,700 |  |
| Insurance consultant | 6,000 | 6,000 |
| Salary and benefits study | 10,000 | 880 |
| Other | 4,697 | 1,829 |
| TOTAL CONSULTANT AND PROFESSIONAL EXPENSES | \$570,258 | \$473,129 |

## Investment Section



Norm Robinson<br>Executive Director

Susie Dahl<br>Assistant Executive Director

ber 1, 2007
To the Members of the MoDOT \& Patrol Employees' Retirement System:

It is my pleasure to provide you with the investment section of this year's comprehensive annual financial report. This section is a supplement to the comprehensive report and provides an overview of developments and performance within the investment portfolio.

Fiscal year 2007 (FY 07) picked up exactly where 2006 left off, capitalizing on the healthy global economy and unprecedented amounts of liquidity to generate an $18.1 \%$ investment return, net of manager fees. Most of the major asset classes witnessed double-digit returns for the year, led by the International Equity portfolio that delivered a $31.1 \%$ return. The strong performance in FY 07 helped improve MPERS' three and five-year return to a healthy $14.6 \%$ and $12.3 \%$, respectively.

The restructuring of MPERS' investment portfolio is well underway, and the changes implemented in recent years have performed better than expected. While most of the major restructuring is complete, a lot of unfinished work remains within the private equity and real estate portfolios. The continued development of these private market investments is a critical component to a well-diversified portfolio, as we do not believe the public equity markets will continue to deliver double-digit returns forever. In fact, as of the time of this report, public equities are struggling to find their base in the midst of a deteriorating sub-prime mortgage market, and the fear this will lead to an overall slowdown in the economy.

This increased uncertainty suggests a more conservative investment approach for the future, and further diversification to protect the corpus of the fund. Over the coming year, we will continue to explore additional strategies and techniques to diversify the investment portfolio and generate higher risk-adjusted returns. Over the past few years, international equities and real estate have delivered strong returns for the fund, as asset classes such as fixed income and domestic equities have underperformed. Looking forward, we are looking to private equity and various absolute return strategies as investments that will both enhance returns and provide diversification to asset classes that fall out of favor.

In summary, I'm pleased to report that fiscal year 2007 was another exceptional year for MPERS' investment portfolio. We have made an extraordinary amount of changes over the past few years, and have been fortunate to witness some short-term success. Before concluding, I want to thank the Board of Trustees and our Executive Director for their continued support of our efforts within the investment portfolio. Their willingness to set aside personal agendas and grant staff the resources necessary to make these changes is the single most important factor to our recent success.

Sincerely,


[^2]
## Summit Strategies Group

8182 Maryland Avenue, Suite 600
St. Louis, Missouri 63105
telephone 314/727-7211
fax 314/727-6068
www.summitstrategies.com

October 1, 2007
Mr. Norman Robinson
Executive Director
MoDOT \& Patrol Employees’ Retirement System
1913 William Street
Jefferson City, MO 65109
Dear Mr. Robinson:
I am pleased to report that the MPERS portfolio continues to deliver stellar performance results. The portfolio changes that were made in the last few years have exceeded expectations. The capital markets have been strong, your investment managers have been performing well, and the portfolio's diversification across asset classes and investment strategies has served us well.

With total assets of $\$ 1,820,830,736$ on June 30, 2007 the return was $18.1 \%$ for the year, $0.8 \%$ ahead of the policy benchmark and better than $88 \%$ of the public funds in the ICC Universe for the 12 -month period! For the 3 - and 5 -year periods, the fund earned $14.6 \%$ and $12.3 \%$, also ahead of the policy benchmark and in the top $10 \%$ of the peer sample as well. These returns were calculated using a time-weighted rate of return and are based on June 30, 2007 market values.

Most of this strong performance can be attributed to the System's allocations to the Domestic and International Equity markets. MPERS' U.S. stock portfolio was up $21.1 \%$ in the 12 -month period - and this impressive return was eclipsed by your non-U.S. stocks, which generated a return of $31.1 \%$. These returns exceeded the index returns of the Russell 3000 Index and the MSCI ACWI ex-US index by $1.4 \%$ and $1.1 \%$, respectively. Your Fixed Income Composite was up $7.3 \%$, and on the Real Estate side, the portfolio generated a $14.2 \%$ return. These returns are quite good by historical standards, and while we are pleased to capture them we do not look for returns to continue at these levels. In fact, thus far in Fiscal Year 2007-08 the markets have faced strong headwinds in several asset classes.

Your portfolio is well-diversified across stocks, bonds, real estate and private market investments. We believe the assets are well-positioned and that diversification will be the key to future success. We will continue to work with you, your staff and the Board of Trustees to refine our strategies and attempt to capture opportunities as they present themselves. On behalf of all of us at Summit Strategies Group, we appreciate your continued support and trust, and look forward to many years of continued success with the MoDOT \& Patrol Employees’ Retirement System.

Sincerely,


Mark A. Caplinger, CFA
Senior Vice President

## Summary of Investment Policy

The primary objective of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (Plan) is to provide active and retired employees with adequate retirement benefits. The investment portfolio is constructed to generate a total return that, when added to employer contributions, is sufficient to meet benefit obligations. Following prudent standards for preservation of capital, the goal is to achieve the highest possible rate of return consistent with the plan's tolerance for risk as determined by the Board of Trustees in its role as fiduciary.

Investment management is delegated to external asset managers. The managers will operate within the set of guidelines, objectives and constraints set forth in their respective investment management agreement.

## Market Value of Investments

As of June 30, 2007, MPERS' investment portfolio had a total market value of $\$ 1.82$ billion, representing an increase of $\$ 227.3$ million over fiscal year-end 2006. Over the course of the year, an additional $\$ 56.5$ million was transferred out of the fund to meet benefit payments and other obligations. When viewed together, asset growth from investments equated to $\$ 283.8$ million.

## Investment Performance

The MPERS' investment portfolio returned $18.1 \%$ in fiscal year 2007, based on time-weighted rates of return and market valuations. Performance for the various sub-asset classes and their respective benchmark indices is listed below:

| Investment Performance <br> (Including Benchmarks) | $\mathbf{1}$ Year | $\mathbf{3}$ Year | 5 Year |
| :--- | :---: | :---: | :---: |
| Total Fund | $\mathbf{1 8 . 0 9 \%}$ | $\mathbf{1 4 . 6 4 \%}$ | $\mathbf{1 2 . 2 8 \%}$ |
| Policy Benchmark | 17.24 | 13.23 | 11.51 |
| Domestic Equity | $\mathbf{2 1 . 1 1}$ | $\mathbf{1 3 . 4 6}$ | $\mathbf{1 2 . 2 9}$ |
| Russell 3000 | 20.08 | 12.44 | 11.53 |
| International Equity | $\mathbf{3 1 . 1 4}$ | $\mathbf{2 7 . 8 5}$ | $\mathbf{2 2 . 0 5}$ |
| MSCI ACWI ex-US | 30.14 | 25.03 | 19.93 |
| Fixed Income Composite | $\mathbf{7 . 2 8}$ | 5.61 | $\mathbf{5 . 1 5}$ |
| Lehman Universal Index | 6.63 | 4.54 | 5.18 |
| Real Estate | $\mathbf{1 4 . 4 0}$ | $\mathbf{1 5 . 7 1}$ | - |
| NCREIF Property Index | 17.24 | 17.98 | - |

When measuring performance, the Board of Trustees looks at three primary performance objectives: a) meet or exceed the actuarial assumed rate of return of $8.25 \%$, b) outperform a policy benchmark that represents the return that could be achieved by investing passively in the broad markets in the same percentages to MPERS' target asset allocation, and c) rank at or above the median public fund investment return.

MPERS' one, three, and five-year return compares favorably to all three of the performance goals listed above. During FY07, international equity was the best performing asset class, generating a $31.1 \%$ return for the
year, followed by the system's Domestic Equity portfolio that produced a $21.1 \%$ return over the period. MPERS maintained an overweight position to International Equities relative to Domestic Equities over the period, which was the leading contributor behind MPERS' excess return relative to the policy benchmark. Manager selection was also very strong within across all equity sectors, as international equity and domestic equity managers collectively returned $1.0 \%$ over their respective benchmarks for the year.

Historical returns versus the various performance goals are listed below:


## Asset Allocation Overview

Fiscal year 2007 witnessed a number of transitions within the investment portfolio. At the onset of fiscal year 2006, MPERS' asset allocation targets were $45 \%$ public equity ( $22.5 \%$ Domestic and $22.5 \%$ International), 32\% public debt (including 16\% traditional fixed income and $16 \%$ absolute return strategies), $10 \%$ real estate, $10 \%$ private equity, and $3 \%$ timber. In January of 2007, the Board of Trustees approved staff's recommendation to roll the $3 \%$ timber allocation into the overall real estate portfolio, for a combined allocation of $13 \%$ to real estate. The Board also approved a clarification to the absolute return allocation to allow for opportunistic investments into strategies such as infrastructure, oil and gas partnerships, and other liquidity-constrained absolute return strategies.

The relationship with Grove Street Advisors was active throughout the year, as they continue to assist MPERS in the construction of the private equity portfolio. Throughout FY07, Grove Street called a total of \$32.7 million in capital commitments from their total mandate of $\$ 200$ million. MPERS also made a number of commitments outside of the Grove Street relationship, and collectively ended the year with over $\$ 41$ million invested in private equity. We continue to utilize a global enhanced equity product as a private equity surrogate until the asset class is fully funded.

The restructuring of the absolute return/hedge fund portfolio continued throughout the year, as MPERS officially implemented its first portable alpha strategy (over an S\&P 500 mandate). The ultimate goal is to transition the absolute return program to a welldiversified alpha pool that can be used to enhance returns across a number of investment mandates. Given the increased complexity of this program, MPERS retained the services of Albourne America, LLC, a dedicated hedge fund consultant, to assist with the construction and oversight of this portfolio.

Looking forward (from an asset allocation viewpoint), we remain overweight to international equities relative to domestic equities, mainly due to a long-term bearish view on the U.S. dollar. We are also underweight to traditional fixed income securities, as alternative investments continue to offer potential for higher relative returns. The real estate portfolio is also a focal point, as we transition the portfolio to include a higher mix of value-added and opportunistic real estate strategies.

The chart below lists the target and actual allocations to the various sub-asset classes within the overall portfolio.

| Asset Class | Ending FY06 <br> Allocation | FY07 Target <br> Allocation | Ending FY07 <br> Allocation |
| :--- | :---: | :---: | :---: |
| Public Equity | $\mathbf{4 5 . 5 \%}$ | $45 \%$ | $46.2 \%$ |
| $\quad$ Domestic equity | $20.0 \%$ | $22.5 \%$ | $20.9 \%$ |
| International equity | $25.5 \%$ | $22.5 \%$ | $25.4 \%$ |
| Private Equity | $\mathbf{1 0 . 1 \%}$ | $\mathbf{1 0 \%}$ | $\mathbf{9 . 8 \%}$ |
| Fixed Income | $\mathbf{2 8 . 8 \%}$ | $\mathbf{3 2 \%}$ | $\mathbf{2 7 . 4 \%}$ |
| Real Estate | $\mathbf{1 3 . 0 \%}$ | $\mathbf{1 0 \%}$ | $\mathbf{1 3 . 6 \%}$ |
| Timber ** | $\mathbf{1 . 6 \%}$ | $\mathbf{3 \%}$ | $\mathbf{0 . 0 \%}$ |
| Cash | $\mathbf{1 . 2 \%}$ | $\mathbf{0 \%}$ | $\mathbf{3 . 0} \%$ |

[^3]Investment Summary

## Amounts Reported By Management-Type Allocation (In Thousands of Dollars)

|  | 06/30/06 |  |  |  | Acquisitions | Dispositions | 06/30/07 |  |  |  | \% of Market |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Book Value |  | Market Value |  |  |  | Book <br> Value |  | Market Value |  |
| Domestic Equity | \$ | 299,846 | \$ | 318,861 | \$ 76,013 | \$ $(56,041)$ | \$ | 319,818 | \$ | 381,155 | 20.9\% |
| International Equity |  | 341,727 |  | 406,524 | 202,045 | $(204,147)$ |  | 339,625 |  | 461,971 | 25.4\% |
| Private Equity |  | 163,667 |  | 160,350 | 87,885 | $(87,172)$ |  | 164,380 |  | 178,086 | 9.8\% |
| Real Estate** |  | 184,360 |  | 232,574 | 34,726 | $(34,734)$ |  | 184,352 |  | 247,045 | 13.6\% |
| Fixed Income |  | 437,256 |  | 458,754 | 263,106 | $(241,972)$ |  | 458,390 |  | 498,210 | 27.4\% |
| Short Term |  | 16,828 |  | 16,826 | 38,206 | (338) |  | 54,696 |  | 54,746 | 3.0\% |
| Total Investments |  | ,443,684 |  | 1,593,889 | \$701,981 | \$(624,404) |  | ,521,261 |  | ,821,213 | 100.0\% |


| Reconciliation to Statement of Plan Net Assets: |  |
| :--- | ---: |
| Less Accrued Investment Interest and Income | $(4,572)$ |
| Less Investment Sales Receivable | $(7,011)$ |
| Plus Investment Purchases Payable | 10,986 |
| Currency Adjustment | $\underline{215}$ |
|  | $\underline{\$ 1,820,831}$ |

[^4]
## Largest Equity Securities <br> (Non-Commingled Funds)

| Shares | Security | Market Value |
| ---: | :--- | ---: |
| 95,770 | BNP PARIBAS | $\$ 11,428,674.15$ |
| 274,002 | ROYAL DUTCH SHELL 'A'SHS | $11,171,911.88$ |
| 198,296 | ING GROEP | $8,781,445.81$ |
| 283,505 | FIAT SPA | $8,450,330.82$ |
| $1,142,654$ | BT GROUP | $7,622,775.18$ |
| 122,675 | THYSSENKRUPP | $7,311,401.77$ |
| 36,004 | SOC GENERALE | $6,687,423.88$ |
| 112,449 | CANON INC | $6,583,313.26$ |
| 154,405 | FORTIS UNIT | $6,575,003.46$ |
| 317,335 | VOLVO AB SER'B' | $6,340,036.02$ |

## Largest Fixed Income Securities <br> (Non-Commingled Funds)

| Par Value | Security | Market Value |
| ---: | :--- | ---: |
| $3,855,000$ | UNITED STATES TREAS 6\% 02-15-2026 | $\$ 4,207,972$ |
| $4,067,000$ | U.S TREAS NTS 4.625 12-31-2011 | $4,016,480$ |
| $3,115,000$ | US TREAS NTS 4.625 02-29-2012 | $3,075,091$ |
| $1,550,000$ | FHLMC MULTCLASS 00540 5 04-15-2033 | $1,470,502$ |
| $1,215,000$ | PVTPL PEDERNALES ELEC COOP 2002 SER A 144A 6.202 11-15-2032 | $1,229,580$ |
| $1,280,000$ | FHLMC MULTICLASS SER 2881 CL TE 5 07-15-2033 | $1,213,642$ |
| 876,000 | US TREAS BDS 8 3/4 8.75 08-15-2020 | $1,169,871$ |
| $1,157,695$ | CMO BEAR STEARNS ARM TR 2006-1 MTG BKD NT CL A-1 02-25-2036 | $1,130,971$ |
| $1,065,190$ | CMO WELLS FARGO MTG BACKED SECS 2006-AR17 CL A-1 10-25-2036 | $1,052,053$ |
| $1,000,000$ | HARRIS CNTY-HSTN TEX SPORTS AUTH REV SER I 6.5 11-15-2016 | $1,044,040$ |

[^5]
## Schedule of |nvestment Expenses

Market Value of Assets
Fees Accrued
Under Management at 6/30/07

| Management Fees: |  |  |
| :---: | :---: | :---: |
| Cash/S\&P 500 Futures | 14,157,582 | \$ 0 |
| Intech | 132,828,385 | 456,236 |
| Pinnacle | 58,300,217 | 286,441 |
| Rothschild Asset Management | 57,687,592 | 870,951 |
| Acadian Asset Management | 166,719,758 | 826,285 |
| Acadian Emerging Markets | 28,670,931 | 242,761 |
| Julius Baer Investment Management | 155,050,664 | 771,312 |
| Silchester International Investors | 111,501,566 | 704,780 |
| Transition Account | 27,595 | 0 |
| Audax | 2,057,761 | 135,969 |
| AXA Rosenberg | 136,828,115 | 284,810 |
| EIF | 145,185 | 0 |
| Grove Street | 39,055,696 | 2,000,000 |
| Aberdeen (formerly Deutsche Asset Mgmt) | 109,641,949 | 292,799 |
| Blackrock, Inc. | 43,468,152 | 107,807 |
| Western Asset Management Co. | 69,343,044 | 172,470 |
| ACI - Citco | 27,270,863 | 878,439 |
| AQR | 24,415,961 | 466,298 |
| ASI | 9,810,642 | 49,136 |
| Barclays Global Investors | 89,699,060 | 1,041,963 |
| Bridgewater Associates | 76,425,148 | 1,100,655 |
| CQS | 20,480,637 | 147,143 |
| GMO | 75,729,149 | 727,215 |
| Paulson | 18,720,782 | 850,099 |
| Shepard | 27,082,617 | 656,989 |
| Vicis | 17,861,732 | 321,600 |
| Albourne | 0 | 240,000 |
| CVI | 6,441,282 | 262,774 |
| AEW | 6,875,647 | 187,500 |
| Apollo | 6,278,516 | 224,999 |
| ING Clarion | 71,058,924 | 655,746 |
| ING Mexico | 2,724,508 | 50,000 |
| Och-Ziff Real Estate | 2,944,667 | 225,000 |
| Principal Global Investors | 112,216,764 | 1,201,713 |
| Urdang | 15,588,560 | 156,036 |
| Urdang II | 4,138,659 | 31,250 |
| RMK Timberland | 25,219,247 | 205,989 |
| The Northern Trust Company | 54,745,992 | 0 |
| Total Management Fees | \$1,821,213,549 | \$16,833,165 |
| Other investment expenses: |  |  |
| Investment custodial fee |  | \$ 298,277 |
| Performance management |  | 40,646 |
| General Consultant (monitoring) fee |  | 168,750 |
| Other investment expenses |  | 171,687 |
| Total Investment Expenses |  | \$17,512,525 |
| Securities Lending Expenses: |  |  |
| Borrower Rebates |  | \$ 6,467,899 |
| Bank Fees |  | 200,449 |
| Total Securities Lending Expenses |  | \$ 6,668,348 |

## Schedule of Brokerage Commíssions

| Brokerage Firm | Total <br> Commission | Number <br> of Shares | Commission <br> Rate |
| :--- | ---: | ---: | ---: |
| LEHMAN BROTHERS | $\$ 58,749$ | $3,344,862$ | $\$ 0.0176$ |
| DEUTSCHE BANK | 47,919 | $3,119,313$ | 0.0154 |
| MERRILL LYNCH | 43,110 | $2,809,750$ | 0.0153 |
| UBS | 38,121 | $2,756,738$ | 0.0138 |
| GOLDMAN SACHS | 25,575 | $1,512,900$ | 0.0169 |
| CITIGROUP GLOBAL | 24,921 | $2,615,887$ | 0.0095 |
| MORGAN STANLEY | 22,421 | $1,998,273$ | 0.0112 |
| CSFB | 2,132 | $1,185,185$ | 0.0187 |
| INSTINET | 16,300 | $1,486,251$ | 0.0110 |
| NOMURA SECURITIES NEW YORK | 16,234 | 876,133 | 0.0185 |
| JP MORGAN SECURITIES | 14,972 | $1,587,398$ | 0.0094 |
| ABN AMRO | 13,772 | 831,637 | 0.0166 |
| CREDIT LYONNAIS | 13,214 | $2,330,468$ | 0.0057 |
| GUZMAN \& COMPANY | 12,236 | 606,930 | 0.0202 |
| NORTHERN TRUST CO | 12,018 | 267,060 | 0.0450 |
| DONALDSON LUFKIN \& JENRETTE | 10,789 | 436,969 | 0.0247 |
| BEAR STEARNS | 9,208 | 665,636 | 0.0138 |
| BNY ESI SECURITIES CO | 9,170 | 203,786 | 0.0450 |
| WEEDEN AND \& CO | 8,739 | 406,284 | 0.0215 |
| SOCIETE GENERALE | 8,696 | 458,666 | 0.0190 |
| ROSENBLATT SECURITIES | 7,795 | 453,991 | 0.0172 |
| DAIWA SECS AMERICA NEW YORK | 7,319 | 595,996 | 0.0123 |
| PERSHING LIMITED | 7,157 | 230,140 | 0.0311 |
| JEFFERIES \& CO | 6,921 | 294,960 | 0.0235 |
| OTHERS (129 firms less that $\$ 5,000$ each) | 125,278 | $127,830,958$ | 0.0010 |
| TOTAL | $\$ 582,766$ | $158,906,171$ |  |
| AVERAGE COMMISSION RATE |  |  | $\$ 0.0037$ |

Broker commissions rebated to MPERS during the fiscal year amounted to $\$ 14,927$.
Soft dollar expenditures (excess commissions used by managers for research services, analysis, and technology amounted to $\$ 64,780$.

Actuarial Section

October 1, 2007
The Retirement Board
Missouri Department of Transportation
and Highway Patrol Employees' Retirement System
P.O. Box 1930

Jefferson City, Missouri 65102-1930
Dear Board Members:

The basic financial objective of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is to establish and receive contributions which;
(1) when expressed in terms of percents of active member payroll, will remain approximately level from generation to generation of Missouri citizens, and which
(2) when combined with present assets and future investment returns, will be sufficient to meet the present and future financial obligations of MPERS.

In order to measure progress toward this fundamental objective, MPERS has annual actuarial valuations performed. The valuations (i) measure present financial position, and (ii) establish contribution rates that provide for the current cost and level percent-of-payroll amortization of unfunded actuarial liabilities over a reasonable period. An actuarial valuation was performed based upon benefit conditions, data and assumptions as of June 30, 2007. This valuation indicates that contribution rates for the period beginning July 1, 2008 that are at least equal to the calculated contributions rates will meet the Board's financial objective. The calculated contribution rates are $30.73 \%$ of payroll for the 7,586 Non-Uniformed employees and $40.23 \%$ of payroll for the 1,054 Uniformed patrol employees.

The actuarial valuations are based upon financial and participant data (which is prepared by retirement system staff) assumptions regarding future rates of investment return and inflation, and rates of retirement, turnover, death, and disability among MPERS' members and their beneficiaries. We review the data for internal and year-to-year consistency as well as general reasonableness prior to its use in the actuarial valuations. It is also summarized and tabulated for the purpose of analyzing trends. The assumptions were adopted by the Board of Trustees and were based upon actual experience of MPERS during the period July 1, 1999 to June 30, 2004. Assets were valued using a three-year smoothing method. The assumptions and methods utilized in this valuation, in our opinion, meet the parameters established by the Governmental Accounting Standards Board Statement No. 25.

The current benefit structure is outlined in the introductory section. We provided the information used in the supporting schedules in the actuarial section and the Schedules of Funding Progress in the financial section, as well as the employer contribution rates shown in the Schedule of Employer Contributions in the financial section.

Based upon the valuation results, it is our opinion that the Missouri Department of Transportation and Highway Patrol Employees' Retirement System continues to be in sound condition in accordance with actuarial principles of level percent-of-payroll financing. However, a material decline in the funded status for any reason would lead to a need for increased contributions.

Respectfully submitted,


Brian B. Murphy, F.S.A.


Kenneth G. Alberts

## Summary of Actuarial Methods and Assumptions

| Valuation Date | .June 30, 2007 |
| :---: | :---: |
| Actuarial Cost Method | Entry Age Normal |
| Amortized Method. | Level percent of payroll |
| Remaining Amortization Period | 28 years from July 1, 2008 |
| Amortization Approach | ... Closed |
| Asset Valuation Method. | .3-year smoothing |
| Actuarial Assumptions: |  |
| Investment Rate of Return | ........8.25\% |
| Projected Salary Increase . | .....3.75\% to 11.75\% |
| Cost-of-Living Adjustments | .. 2.6\% Compound |
| Includes Wage Inflation at | ......3.75\% |

An actuarial valuation is based upon an actuarial cost method, an asset valuation method, and actuarial assumptions. These methods and assumptions are chosen by the Board of Trustees after consultation with the Actuary and other advisors.

The actuarial cost method is called the Entry Age Actuarial Cost Method. This method is consistent with the Board's level percent of payroll funding objective. With this method, the level percent of payroll is determined that will fund a member's retirement benefit over the member's entire working lifetime, from date of hire (Entry Age) to date of exit from the active member population. Differences in the past between assumed and actual experience become part of unfunded actuarial accrued liabilities and are amortized with level percent of payroll contributions. This cost method was first used in the June 30, 1999 valuation.

The asset valuation method is a three year smoothed market value method in which assumed investment return is recognized immediately each year and differences between actual and assumed investment return are phased in over a closed three year period. This asset valuation method is intended to give recognition to the long term accuracy of market values while filtering out and dampening short term market swings. This method was first used in the June 30, 1999 valuation.

The actuarial assumptions used in producing the valuation fall into two broad classes: economic assumptions, and demographic assumptions. Economic assumptions refer to long term rates of investment return, wage growth, covered population growth, and inflation. Demographic assumptions refer to retirement rates, turnover rates, disability rates, merit and seniority pay increases, and mortality rates. The current assumptions are based upon a 1999-2004 study of experience of the MPERS. The assumptions are reviewed from time to time to keep them reasonably current with expected experience.

## Economic Assumptions

The investment return rate used in making the valuation was $8.25 \%$ per year, compounded annually (net after administrative expenses). This rate of return is not the assumed real rate of return. The real rate of return over wage inflation is defined to be the portion of investment return which is more than the wage inflation rate. Considering wage inflation recognition of $3.75 \%$, the $8.25 \%$ rate translates to an assumed real rate of return of $4.5 \%$. This rate was first used for the June 30, 2005 valuation.

## Summary of Actuarial Methods and Assumptions

Pay increase assumptions for individual active members are shown on page 55. Part of the assumption for each age is for a merit and/or seniority increase, and the other $3.75 \%$ recognizes wage inflation. These rates were first used for the June 30, 2005 valuation.

Price Inflation is assumed to be $3.75 \%$. This results in a $2.6 \%$ annual COLA assumption. It is assumed that the $2.6 \%$ COLA will always be paid.

The Active Member Group size is assumed to remain constant at its present level.
Total active member payroll is assumed to increase $3.75 \%$ a year, which is the portion of the individual pay increase assumptions attributable to wage inflation. This rate was first used for the June 30, 2005 valuation.

## Non Economic Assumptions

The mortality table used to measure retired life mortality was the 1971 Group Annuity Mortality Tables projected to the year 2000 set back 1 year for males and 7 years for females. Related values are shown on page 56. This table was first used for the June 30, 2000 valuation. Disabled pension mortality was based on PBGC Disabled Mortality tables.

The probabilities of retirement for members eligible to retire are shown on page 57. The rates for full retirement were first used in the June 30, 2005 valuation. The rates for reduced retirement were first used in the June 30, 2005 valuation.

The probabilities of withdrawal from service, death in service and disability are shown for sample ages on page 57 and page 55. The death-in-service and disability rates were first used in the June 30, 2005 valuation. The withdrawal rates for Uniform members were first used in the June 30, 2007 valuation. The withdrawal rates for Non-uniform members were first used in the June 30, 2005 valuation.

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.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.).

# Probabilities of Separation From Active Employment Less Than 5 Years of Service 

|  | MoDOT, Civilian Patrol \& MPERS |  |  | Uniformed Patrol |  |
| :---: | :---: | :---: | :--- | :--- | :--- |
| Service | Male | Female |  | Male | Female |
| $0-1$ | $25.00 \%$ | $18.00 \%$ |  | $8.00 \%$ | $8.00 \%$ |
| $1-2$ | 12.00 | 11.00 |  | 6.00 | 6.00 |
| $2-3$ | 7.00 | 9.00 |  | 4.50 | 4.50 |
| $3-4$ | 6.00 | 7.00 |  | 4.00 | 4.00 |
| $4-5$ | 5.00 | 6.00 |  | 4.00 | 4.00 |

## Probabilities of Separation From Active Employment More Than 5 Years of Service

|  | MoDOT, Civilian Patrol \& MPERS |  |  | Uniformed Patrol |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Age | Male | Female |  | Male | Female |
| 25 | $4.70 \%$ | $6.25 \%$ |  | $4.50 \%$ | $4.50 \%$ |
| 30 | 3.78 | 5.55 |  | 3.78 | 3.78 |
| 35 | 2.86 | 4.82 |  | 2.22 | 2.22 |
| 40 | 1.96 | 3.78 |  | 1.20 | 1.20 |
| 45 | 1.30 | 3.12 |  | 0.8 | 0.82 |
| 50 | 0.98 | 3.00 |  | 0.46 | 0.46 |
| 55 | 0.66 | 1.50 |  | 0.18 | 0.18 |
| 60 | 0.21 | 0.50 |  | 0.10 | 0.10 |

## Salary Increase Assumptions For an Individual Member

Age Based Salary Scale

|  | MoDOT, Civilian Patrol \& MPERS |  |  | Uniformed Patrol |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age |  <br> Seniority | Base <br> (Economic) | Increase <br> Next Year |  |  <br> Seniority | Base <br> (Economic) | Increase <br> Next Year |
| 20 | $8.00 \%$ | $3.75 \%$ | $11.75 \%$ |  | $6.00 \%$ | $3.75 \%$ | $9.75 \%$ |
| 25 | 5.66 | 3.75 | 9.41 |  | 5.40 | 3.75 | 9.15 |
| 30 | 3.30 | 3.75 | 7.05 |  | 3.50 | 3.75 | 7.25 |
| 35 | 2.05 | 3.75 | 5.80 |  | 1.75 | 3.75 | 5.50 |
| 40 | 1.45 | 3.75 | 5.20 |  | 1.10 | 3.75 | 4.85 |
| 45 | 0.95 | 3.75 | 4.70 |  | 0.64 | 3.75 | 4.39 |
| 50 | 0.60 | 3.75 | 4.35 |  | 0.37 | 3.75 | 4.12 |
| 55 | 0.38 | 3.75 | 4.13 |  | 0.29 | 3.75 | 4.04 |
| 60 | 0.30 | 3.75 | 4.05 |  | 0.00 | 3.75 | 3.75 |

## Joint Life Retirement Values

(8.25\% Interest)

| Sample <br> Attained Ages | Present Value of <br> \$1 Monthly for Life |  |  | Future Life <br> Expectancy (years) |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Men | Women |  | Men |  |
| 50 | $\$ 136$ | $\$ 139$ | 29.17 | Women |  |
| 55 | 131 | 134 | 24.82 | 34.67 |  |
| 60 | 124 | 127 | 20.70 | 25.06 |  |
| 65 | 115 | 119 | 16.82 | 21.50 |  |
| 70 | 105 | 109 | 13.32 | 17.57 |  |
| 75 | 93 | 97 | 10.36 | 13.99 |  |
| 80 | 80 | 84 | 7.83 | 10.91 |  |

The present values shown above are for illustrative purposes only and include a $50 \%$ survivor benefit but do not include the value of future post-retirement increases. Males are assumed to be 3 years older than their spouses.

## Percent of Eligible Active Members Retiring Next Year (Rates of Retirement)

| Age | MoDOT, Civilian Patrol \& MPERS |  |  |  | Uniformed Patrol |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male |  | Female |  | Male | Female |
|  | Normal | Early | Normal | Early | Normal |  |
| 50 | 18.0\% | 0.0\% | 18.0\% | 0.0\% | 50.0\% | 50.0\% |
| 55 | 18.0 | 4.0 | 18.0 | 4.0 | 25.0 | 25.0 |
| 60 | 18.0 | 4.0 | 20.0 | 4.0 | 100.0 | 100.0 |
| 65 | 45.0 | 0.0 | 40.0 | 0.0 | 100.0 | 100.0 |
| 70 | 100.0 | 0.0 | 100.0 | 0.0 | 100.0 | 100.0 |

Percent of Members Becoming Disabled at the Indicated Age (Rates of Disability)

|  | MoDOT, Civilian Patrol \& MPERS |  |  | Uniformed Patrol |  |
| :--- | :---: | :---: | :--- | :--- | :---: |
| Age | Male | Female |  | Male | Female |
| 25 | $0.01 \%$ | $0.06 \%$ |  | $0.03 \%$ | $0.03 \%$ |
| 30 | 0.01 | 0.07 |  | 0.03 | 0.03 |
| 35 | 0.06 | 0.10 | 0.04 | 0.04 |  |
| 40 | 0.09 | 0.16 | 0.06 | 0.06 |  |
| 45 | 0.21 | 0.29 | 0.09 | 0.09 |  |
| 50 | 0.36 | 0.45 | 0.15 | 0.15 |  |
| 55 | 0.66 | 0.54 | 0.00 | 0.00 |  |
| $60+$ | 0.00 | 0.00 | 0.00 | 0.00 |  |

## Summary of Member Data Included In Valuations

|  | Non-Uniformed |  |  |  | Uniformed Patrol |  | Grand Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Civilian Patrol | MoDOT \& MPERS | Non-Uniformed Total |  |  |  |  |
| Active Members |  |  |  |  |  |  |  |
| Closed Plan | 708 | 4,183 | 4,891 |  | 800 |  | 5,691 |
| Year 2000 Plan | 427 | 2,268 | 2,695 |  | 254 |  | 2,949 |
| Total Active Members | 1,135 | 6,451 | 7,586 |  | 1,054 |  | 8,640 |
| Total Active Members Prior Year | 1,106 | 6,867 | 7,973 |  | 1,060 |  | 9,033 |
| Retiree -- Regular Pensioners |  |  |  |  |  |  |  |
| Closed Plan | 409 | 3,889 | 4,298 |  | 741 |  | 5,039 |
| Year 2000 Plan | 270 | 1,664 | 1,934 |  | 1 |  | 1,935 |
| Total Regular Pensioners | 679 | 5,553 | 6,232 |  | 742 |  | 6,974 |
| Self Insured Disability Pensioners | 7 | 103 | 110 |  | 2 |  | 112 |
| Fully Insured Disability Pensioners | 1 | 52 | 53 |  | 2 |  | 55 |
| Terminated Vested Members | 205 | 1,253 | 1,458 |  | 151 |  | 1,609 |
| Total | 2,027 | 13,412 | 15,439 |  | 1,951 |  | 17,390 |
| Active Member |  |  |  |  |  |  |  |
| Valuation Payroll | \$39,772,873 | \$259,468,418 | \$299,241,291 | \$ | 61,601,130 | \$ | 360,842,421 |
| Active Member |  |  |  |  |  |  |  |
| Valuation Payroll Prior Year | \$35,842,213 | \$258,578,248 | \$294,420,461 | \$ | 54,194,238 | \$ | 348,614,699 |
| Unfunded Actuarial |  |  |  |  |  |  |  |
| Accrued Liability | N/A | N/A | \$937,436,779 |  | 274,023,626 |  | ,211,460,405 |

Member data for Actuarial valuation is as of May 31, 2007.

Active Members By Attained Age \& Years of Service

## MoDOT and MPERS



## Year 2000 Plan

| Attained Age | Counted by Complete Years of Service to Valuation Date |  |  |  |  |  |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. | Valuation Payroll |
| Under 20 | 8 | - | - | - | - | - | - | 8 | \$ 192,491 |
| 20-24 | 229 | 4 | - | - | - | - | - | 233 | 7,961,606 |
| 25-29 | 358 | 118 | - | - | - | - | - | 476 | 17,459,195 |
| 30-34 | 252 | 118 | - | - | - | - | - | 370 | 13,337,481 |
| 35-39 | 203 | 93 | - | - | - | - | - | 296 | 10,338,022 |
| 40-44 | 206 | 89 | - | - | - | - | - | 295 | 9,585,887 |
| 45-49 | 183 | 76 | - | - | - | - | - | 259 | 8,761,777 |
| 50-54 | 132 | 50 | - | - | - | - | - | 182 | 6,221,956 |
| 55-59 | 72 | 24 | - | - | - | - | - | 96 | 3,386,466 |
| 60-64 | 36 | 12 | - | - | - | - | - | 48 | 1,718,314 |
| 65-69 | 2 | 2 | - | - | - | - | - | 4 | 181,016 |
| 70+ | - | 1 | - | - | - | - | - | 1 | 31,179 |
| Totals | 1,681 | 587 | 0 | 0 | 0 | 0 | 0 | 2,268 | \$79,175,390 |
|  |  |  | Average Age Average Service Average Pay |  |  | 37.5 years 3.3 years \$34,910 |  |  |  |

Active Members By Attained Age and Years of Service

## Uniformed Patrol

## Closed Plan



## Year 2000 Plan



Civilian Patrol

## Closed Plan

| Attained Age | Counted by Complete Years of Service to Valuation Date |  |  |  |  |  |  | Totals |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. |  | Valuation Payroll |
| Under 20 | - | - | - | - |  | - | - | 0 | \$ | 0 |
| 20-24 | - | - | - | - | - | - | - | 0 |  | 0 |
| 25-29 | - | 8 | 3 | - | - | - | - | 11 |  | 312,298 |
| 30-34 | - | 22 | 21 | - | - | - | - | 43 |  | 1,621,442 |
| 35-39 | - | 25 | 38 | 14 | 1 | - | - | 78 |  | 2,864,029 |
| 40-44 | - | 27 | 46 | 31 | 26 | 4 | - | 134 |  | 5,043,812 |
| 45-49 | - | 18 | 28 | 33 | 40 | 29 | 4 | 152 |  | 5,812,197 |
| 50-54 | - | 13 | 32 | 16 | 37 | 31 | 21 | 150 |  | 6,186,834 |
| 55-59 | - | 11 | 22 | 23 | 19 | 15 | 16 | 106 |  | 3,946,370 |
| 60-64 | - | 5 | 10 | 7 | 5 | 1 | 2 | 30 |  | 935,309 |
| 65-69 | - | - | 1 | 1 | - | - | 1 | 3 |  | 115,344 |
| 70+ | - | - | - | 1 | - | - | - | 1 |  | 28,574 |
| Totals | 0 | 129 | 201 | 126 | 128 | 80 | 44 | 708 |  | \$26,866,209 |
|  |  | Average Age |  |  | 47.6 years |  |  |  |  |  |
|  |  | Average Service |  |  | 17.4 years |  |  |  |  |  |
|  |  | Average Pay |  |  | \$37,947 |  |  |  |  |  |

## Year 2000 Plan

| Attained Age | Counted by Complete Years of Service to Valuation Date |  |  |  |  |  |  | Totals |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | No. |  | Valuation Payroll |
| Under 20 | - | - | - | - | - | - | - | 0 | \$ | 0 |
| 20-24 | 41 | - | - | - | - | - | - | 41 |  | 1,172,978 |
| 25-29 | 76 | 19 | - | - | - | - | - | 95 |  | 3,514,819 |
| 30-34 | 35 | 26 | - | - | - | - | - | 61 |  | 1,932,872 |
| 35-39 | 48 | 12 | - | - | - | - | - | 60 |  | 1,680,385 |
| 40-44 | 27 | 14 | - | - | - | - | - | 41 |  | 1,138,099 |
| 45-49 | 32 | 15 | - | - | - | - | - | 47 |  | 1,268,827 |
| 50-54 | 23 | 9 | - | - | - | - | - | 32 |  | 864,648 |
| 55-59 | 17 | 10 | - | - | - | - | - | 27 |  | 762,558 |
| 60-64 | 12 | 7 | - | - | - | - | - | 19 |  | 478,147 |
| 65-69 | 2 | 1 | - | - | - | - | - | 3 |  | 70,245 |
| 70+ | - | 1 | - | - | - | - | - | 1 |  | 23,086 |
| Totals | 313 | 114 | 0 | 0 | 0 | 0 | 0 | 427 |  | 2,906,664 |
|  |  | Average Age |  |  | 38.5 years |  |  |  |  |  |
|  |  | Average Service |  |  | 3.3 years |  |  |  |  |  |
|  |  | Average Pay |  |  | \$30,226 |  |  |  |  |  |

## Schedule of Active Member Valuation Data

| Actuarial <br> Valuation Date | Number of <br> Active Members | Annualized <br> Payroll | Average <br> Pay | Percent Change <br> in Average Pay <br> from Prior Year |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $06 / 30 / 1998$ | 8,871 | $\$ 284,889,796$ | $\$ 32,115$ | $3.1 \%$ |  |  |
| $06 / 30 / 1999$ | 9,140 | $298,673,247$ | 32,678 | $1.8 \%$ |  |  |
| $06 / 30 / 2000$ | 9,171 | $312,532,009$ | 34,078 | $4.3 \%$ |  |  |
| $06 / 30 / 2001$ | 9,087 | $327,049,257$ | 35,991 | $5.6 \%$ |  |  |
| $06 / 30 / 2002$ | 8,695 | $312,747,492$ | 35,969 | $(0.1) \%$ |  |  |
| $06 / 30 / 2003$ | 8,892 | $318,744,192$ | 35,846 | $(0.3) \%$ |  |  |
| $06 / 30 / 2004$ | 9,002 | $328,210,887$ | 36,460 | $1.7 \%$ |  |  |
| $06 / 30 / 2005$ | 9,193 | $345,695,867$ | 37,604 | $3.1 \%$ |  |  |
| $06 / 30 / 2006$ | 9,033 | $348,614,699$ | 38,593 | $2.6 \%$ |  |  |
| $06 / 30 / 2007$ | 8,640 | $360,842,421$ | 41,764 | $8.2 \%$ |  |  |
|  |  | Ten-Year Average |  |  |  | $\mathbf{3 . 0 \%}$ |

Member data for Actuarial valuation is as of May 31, 2007.

## Solvency Test

The MPERS' 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 in the long term test.

A solvency test is one means of checking a system's progress under its funding program. In a solvency test for a non-contributory plan, the plan's present assets (cash and investments) are compared with: 1) The liabilities for future benefits to present retired lives and 2) The liabilities for service already rendered by members. In a system that has been following the discipline of level
percent of payroll financing, the liabilities for future benefits to present retired lives (liability 1) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by members (liability 2 ) will be partially covered by the remainder of present assets. The larger the funded portion of liability 2 , the stronger the condition of the system.

The schedule below illustrates the history of liability 2 of the System. Progress on solvency has been negatively impacted by the 2000-2002 investment market.

| Valuation Date June 30 | (1) Retirees and Beneficiaries (Millions) | (2) Active and Inactive Members (Millions) | Present Valuation Assets (Millions) | Portion of Present Values Covered by Present Assets |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | (1) | (2) | Total |
| 1999 | \$1,132 | \$ 921 | \$1,243 | 100\% | 12\% | 61\% |
| 2000 | 1,238 | 951 | 1,423 | 100\% | 19\% | 65\% |
| 2001 | 1,375 | 926 | 1,521 | 100\% | 16\% | 66\% |
| 2002 * | 1,470 | 888 | 1,451 | 99\% | 0\% | 62\% |
| 2003 | 1,555 | 863 | 1,364 | 88\% | 0\% | 56\% |
| 2004 | 1,626 | 867 | 1,332 | 82\% | 0\% | 53\% |
| 2005 * | 1,669 | 958 | 1,417 | 85\% | 0\% | 54\% |
| 2006 | 1,734 | 1,007 | 1,521 | 88\% | 0\% | 56\% |
| 2007 * | 1,810 | 1,087 | 1,686 | 93\% | 0\% | 58\% |

[^6]Actual experience will never coincide exactly with assumed experience (except by coincidence). Gains and losses may offset each other over a period of years, but sizeable year-to-year variations from assumed experience are common. Detail on the derivation of the experience gain (loss) is shown below.

| UAAL Beginning of Year (at July 1) | \$1,219,294,884 |
| :---: | :---: |
| Normal Cost | 45,753,500 |
| Contributions | $(121,773,287)$ |
| Interest | 97,456,012 |
| Net Change in LTD Assets | 0 |
| Expected UAAL Before Any Changes | 1,240,731,109 |
| Effect of Changes in Assumptions \& Methods | 493,591 |
| Expected UAAL After Changes | 1,241,224,700 |
| End of Year UAAL (at June 30) | 1,211,460,405 |
| Gain/(Loss) for Year | \$ 29,764,295 |
| Gain/(Loss) as a percent of actuarial accrued liabilities at start of year ( $\$ 2,740.4$ million) | 1.1\% |

Valuation Date
June 30

Experience Gain (Loss) as \% of Beginning Accrued Liability
(7.7)\%
(.1) $\%$
(9.3)\%
(4.5)\%
(5.2)\%
(2.9)\%
(1.5)\%
1.4\%
1.1\%

## Schedule of Retirees \& Beneficiaries Added \&Removed

| Valuation Date | Added to Rolls |  | Removed from Rolls |  | Rolls End of Year |  | Average <br> Annual Allowances | \% Increase |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual Allowances | Number | Annual Allowances | Number | Annual Allowances |  | in Annual <br> Allowance | in Average Annual Allowance |
| FY2007 |  |  |  |  |  |  |  |  |  |
| Retirees | 310 | \$ 3,052,533 | 157 | \$1,373,300 | 5,177 | \$138,917,326 | \$26,834 | 4.87\% | 1.77\% |
| Beneficiaries | 131 | 51,253 | 112 | 617,163 | 1,812 | 22,283,555 | 12,298 | 8.09\% | 6.96\% |
| Disabilities | 36 | 0 | 24 | 116,307 | 166 | 2,237,892 | 13,481 | 38.31\% | 28.31\% |
| FY2006 |  |  |  |  |  |  |  |  |  |
| Retirees | 252 | \$ 3,005,557 | 166 | \$1,477,199 | 5,024 | \$132,465,613 | \$26,367 | 3.89\% | 1.74\% |
| Beneficiaries | 106 | 715,154 | 75 | 381,966 | 1,793 | 20,615,839 | 11,498 | 7.09\% | 5.24\% |
| Disabilities | 22 | 170,138 | 22 | 106,561 | 154 | 1,618,075 | 10,507 | 9.70\% | 8.99\% |
| FY2005 |  |  |  |  |  |  |  |  |  |
| Retirees | 202 | \$ 4,685,700 | 125 | \$2,373,810 | 4,920 | \$127,508,904 | \$25,916 | 3.53\% | 1.91\% |
| Beneficiaries | 106 | 1,527,938 | 79 | 618,487 | 1,762 | 19,251,121 | 10,926 | 7.95\% | 6.29\% |
| Disabilities | 7 | 95,296 | 7 | 47,561 | 153 | 1,474,983 | 9,640 | -1.86\% | -1.86\% |
| FY2004 |  |  |  |  |  |  |  |  |  |
| Retirees | 295 | \$ 7,389,209 | 143 | \$2,239,625 | 4,843 | \$123,159,002 | \$25,430 | 5.95\% | 2.62\% |
| Beneficiaries | 114 | 1,423,712 | 89 | 557,685 | 1,735 | 17,833,685 | 10,279 | 7.64\% | 6.08\% |
| Disabilities | 9 | 87,586 | 11 | 36,938 | 153 | 1,502,868 | 9,823 | -19.77\% | -18.72\% |
| FY2003 |  |  |  |  |  |  |  |  |  |
| Retirees | 249 | \$ 6,319,872 | 101 | \$2,062,469 | 4,691 | \$116,243,532 | \$24,780 | 6.24\% | 2.89\% |
| Beneficiaries | 121 | 1,627,820 | 91 | 650,474 | 1,710 | 16,568,589 | 9,689 | 9.58\% | 7.66\% |
| Disabilities | 20 | 180,624 | 22 | 43,088 | 155 | 1,873,102 | 12,085 | 36.86\% | 38.62\% |
| FY2002 |  |  |  |  |  |  |  |  |  |
| Retirees | 303 | \$ 8,089,425 | 134 | \$2,193,413 | 4,543 | \$109,416,172 | \$24,085 | 7.59\% | 3.59\% |
| Beneficiaries | 119 | 1,768,570 | 76 | 369,662 | 1,680 | 15,120,376 | 9,000 | 11.53\% | 8.68\% |
| Disabilities | 17 | 168,853 | 41 | 180,231 | 157 | 1,368,640 | 8,717 | -11.88\% | 1.59\% |
| FY2001 |  |  |  |  |  |  |  |  |  |
| Retirees | 531 | \$13,546,408 | 111 | \$1,630,433 | 4,374 | \$101,693,353 | \$23,250 | 21.66\% | 9.97\% |
| Beneficiaries | 108 | 1,447,292 | 112 | 412,086 | 1,637 | 13,556,769 | 8,281 | 10.62\% | 10.89\% |
| Disabilities | 6 | 70,722 | 87 | 1,001,360 | 181 | 1,553,154 | 8,581 | -28.20\% | 3.93\% |
| FY2000 |  |  |  |  |  |  |  |  |  |
| Retirees | 323 | \$ 9,406,709 | 138 | \$1,665,215 | 3,954 | \$ 83,590,958 | \$21,141 | 10.72\% | 4.62\% |
| Beneficiaries | 102 | 1,255,689 | 61 | 257,043 | 1,641 | 12,255,372 | 7,468 | 10.72\% | 7.28\% |
| Disabilities | 8 | 107,281 | 2 | 13,047 | 262 | 2,163,190 | 8,256 | -4.69\% | -0.32\% |

Only 8 years of information are available.
Data for this chart is as of June 30, 2007.

## Comparison of the Closed Plan and the Year 2000 Plan <br> For the Year Ended June 30, 2007

| Plan Provision | Closed Plan | Year 2000 Plan |
| :---: | :---: | :---: |
| Membership Eligibility | Members who work in a position normally requiring at least 1,040 hours of work a year. | Members hired for the first time on or after <br> July 1,2000 , in a position requiring at least 1,040 hours of work a year. <br> Members who left state employment prior to becoming vested and return to work on or after <br> July 1,2000 , in a position normally requiring at least 1,040 hours of work a year. |
| Normal <br> Retirement <br> Eligibility | Age 65 \& active with 4 years of service. <br> Age 65 with 5 years of service. <br> Age 60 with 15 years of service. <br> "Rule of 80 " / minimum age 48. <br> Age 55 with 4 years of service (active uniformed members only). <br> Age 60 - mandatory with 5 years of service (active uniformed members only). | Age 62 with 5 years of service. <br> "Rule of 80 " / minimum age 48. <br> Age 60 - mandatory with 5 years of service (active uniformed members only). |
| Early Retirement Eligibility | Age 55 with 10 years of creditable service. | Age 57 with 5 years creditable service. |
| Benefit <br> Life Benefit <br> Temporary Benefit | $1.6 \%$ x FAP** ${ }^{*}$ service <br> (Base benefit is increased by $331 / 3 \%$ for uniformed patrol members only. <br> Not available. | $1.7 \%$ x FAP** ${ }^{*}$ service <br> $0.8 \% \times$ FAP $^{* *} \mathrm{x}$ service (until age $62-$ only if retiring under "Rule of 80 "). |
| Vesting | 5 years of service. | 5 years of service. |
| COLA <br> (Cost-of-Living Allowance) | If hired before August 28, 1997, annual COLA is a minimum of $4 \%$, maximum $5 \%$, based on $80 \%$ of the increase in the CPIU over the previous year, up to a maximum of $65 \%$ of original benefit. After $65 \%$ cap is reached, annual COLA increases will be equal to $80 \%$ of the change in the CPI-U, with a maximum of $5 \%$. If hired after the above date, annual COLAs will be equal to $80 \%$ of the increase in the CPI-U, maximum $5 \%$, with no guaranteed minimum. | Annual COLA is equal to $80 \%$ of the change in the CPI-U with a maximum rate of $5 \%$. |
| Survivor Benefit <br> (Death before retirement) <br> Non DutyRelated Death <br> Duty-Related Death | Survivor benefit to eligible spouse calculated using the Joint \& $100 \%$ survivor option or $80 \%$ of the member's life income annuity paid to eligible children until age 21 . <br> If at least 3 , but less than 5 , years of service the survivor benefit is calculated using $25 \%$ of the member's base benefit calculated as if the member retired on their date of death. <br> Survivor benefit to eligible spouse or children no less than 50\% of final average pay (no service requirement). | Survivor benefit to eligible spouse calculated using the Joint \& $100 \%$ survivor option or $80 \%$ of the member's life income annuity paid to eligible children until age 21. <br> Survivor benefit to eligible spouse or children no less than $50 \%$ of final average pay (no service requirement). |
| Optional Forms of Payment <br> (Death After <br> Retirement) | Survivor benefit to eligible spouse based on payment option elected at retirement. <br> Payment options include: <br> -Life Income Annuity <br> -Unreduced Joint \& 50\% Survivor <br> -Joint \& 100\% Survivor <br> -60 or 120 Guaranteed Payments <br> -BackDROP | Survivor benefit to eligible spouse based on payment option elected at retirement. <br> Payment options include: <br> -Life Income Annuity <br> -Joint \& 50\% Survivor <br> -Joint \& 100\% Survivor <br> -120 or 180 Guaranteed Payments <br> -BackDROP |
| Disability | Long-Term Disability and Work-Related Disability | Long-Term Disability and Work-Related Disability |

[^7]Governor Matt Blunt signed into law Senate Bills 127 and 406 - legislation that contains several changes to the retirement plan for state employees. Most of the provisions will become effective August 28, 2007; however, one provision is effective January 1, 2008.

## Member Added to Board of Trustees

The legislation provides for the election of an additional member to the MPERS Board of Trustees. The retired employees of MoDOT will elect one retiree and the retired employees of the Missouri State Highway Patrol (MSHP) will elect the other. An election will be held by MPERS before January 1, 2008 for the retiree elected by the retired employees of the MSHP.

## Purchase of Service

Current law allowed Closed Plan uniformed members of the Highway Patrol to purchase, prior to retirement, up to four years of creditable service for time served as a nonfederal full-time public employee in the state of Missouri. This type of service could include work performed for a city, county, or public school district. The law now extends this purchase provision to all employees of Missouri Department of Transportation (MoDOT) and the civilian employees of the Missouri State Highway Patrol (MSHP) who are members of the Closed Plan.

This type of purchase was previously allowed, but members were required to pay the full actuarial cost of the service. The calculation to determine the cost of the purchase under the new provision is the same one used by MPERS to determine the cost of a military service purchase. Generally speaking this results in a lower cost to members to purchase the service.

Senate Bill 406, requires members purchasing service to complete the purchase prior to applying for retirement. This provision was added to ensure that applicants receive the most accurate benefit estimates possible during the application process.

## Reemployment of Retirees

Benefit eligibility to participate in MPERS was modified to cover positions requiring 1,040 hours rather than 1,000 . This change was offered to support the original intent that half-time positions be covered by the system.

A statute change also established that Year 2000 plan retirees who are reemployed be required to work at least one year in order to earn a second retirement benefit. Any reemployment periods less than 12 months will not earn an additional annuity. The retirement benefit of any Year 2000 Plan retiree who returns to work full time will be suspended during the period they are reemployed in a benefit eligible position.

## Divorce Situations

This change in statute only affects individuals who retire after August 28, 2007 and subsequently divorce. Further, the change applies only in situations where; 1) the court has issued a Division of Benefits Order related to the member's benefit; and 2) the member elected a spouse option at the time of retirement. The result of the change will be to apply the reduction factor used in the calculation of the member's benefit to the benefit of the ex-spouse.

## Plan Changes Related to Benefit Enhancements

In an effort to improve the funding status of some plans in the state, the legislature passed a provision that limits plans from adopting or implementing any additional benefit increase, supplement, enhancement, lump sum benefit payment to the participant, or cost-of-living adjustment beyond current plan provisions in effect prior to August 28, 2007, unless the plans funded ratio prior to adopting or implementing the proposed change is at least eighty percent. In addition, after the plan changes are adopted, the funded ratio cannot be less than seventy-five percent.

In addition, this legislation stipulated that the unfunded actuarial accrued liabilities associated with any benefit increase, supplement or enhancement must be amortized over a period not to exceed 20 years for purposes of determining the contributions associated with adopting the change.

Plans with a funded ratio below sixty percent must have their actuary prepare an accelerated contribution schedule based on a descending amortization period for inclusion in the actuarial valuation.

Notes


* Information, excluding financial data on pages $70 \& 71$, was gathered using an internal pension administration system.

Changes in Net Assets
MoDOT \& Patrol Employees' Retirement System
Changes in Net Assets, Last Ten Fiscal Years

|  | Fiscal Year |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Additions |  |  |  |  |  |  |  |  |  |  |
| Employer Contributions | \$ 78,303,693 | \$ 69,569,654 | \$70,191,993 | \$ 81,155,196 | \$ 77,440,468 | \$ 76,806,313 | \$ 86,724,914 | \$102,240,145 | \$111,271,679 | \$121,264,532 |
| Other Contributions | 0 | 0 | 0 | 197,823 | 640,254 | 2,584,257 | 842,665 | 364,680 | 271,038 | 529,926 |
| Net Investment Income | 160,751,704 | 149,470,276 | 52,025,236 | (32,956,576) | (88,252,400) | 36,526,003 | 180,910,907 | 144,641,068 | 212,206,238 | 283,549,424 |
| Other Income | 7,969 |  | 0 |  | 0 | 0 | 33,851 | 31,104 | 41,542 | 31,580 |
| Total Additions |  |  |  |  |  |  |  |  |  |  |
| to Plan Net Assets | 239,063,366 | 219,039,930 | 122,217,229 | 48,396,443 | (10,171,678) | 115,916,573 | 268,512,337 | 247,276,997 | 323,790,497 | 405,375,462 |
| Deductions |  |  |  |  |  |  |  |  |  |  |
| Benefit Payments | 78,994,438 | 86,255,201 | 95,402,854 | 111,985,064 | 133,498,818 | 144,334,345 | 154,987,027 | 157,742,337 | 164,997,406 | 175,970,479 |
| Administrative Expenses | 630,841 | 679,362 | 665,941 | 835,215 | 1,334,555 | 1,451,855 | 1,639,133 | 1,916,592 | 1,927,594 | 2,120,764 |
| Total Deductions |  |  |  |  |  |  |  |  |  |  |
| from Plan Net Asses | 79,625,279 | 86,934,563 | 96,068,795 | 112,820,279 | 134,833,373 | 145,786,200 | 156,626,160 | 159,658,929 | 166,925,000 | 178,091,243 |
| Change in Net Assets | \$159,438,087 | \$132,105,367 | \$26,148,434 | \$(64,423,836) | \$(145,005,051) | \$(29,869,627) | \$111,886,177 | \$ 87,618,068 | \$156,865,497 | \$227,284,219 |

## Benefit Payments By Type

MoDOT \& Patrol Employees' Retirement System Benefit Payments by Type, Last Ten Fiscal Years

| Type of Benefit | Fiscal Year |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Age \& Service Benefits: Retiree \& Survivor Annuity Payments | \$78,232,784 | \$85,481,941 | \$94,593,110 | \$111,189,631 | \$121,786,745 | \$131,689,970 | \$138,767,316 | \$145,118,809 | \$151,647,091 | \$159,145,368 |
| BackDROP Payments | 0 | 0 | 0 | 0 | 10,771,393 | 11,696,862 | 14,318,622 | 8,880,770 | 9,721,059 | 13,177,432 |
| Disability Benefits: |  |  |  |  |  |  |  |  |  |  |
| Long-Term Disability | 506,654 | 553,260 | 519,744 | 490,433 | 515,680 | 537,513 | 555,434 | 475,948 | 386,026 | 288,908 |
| Work-Related Disability ${ }^{(1)}$ | 0 | 0 | 0 | 0 | 0 | 0 | 633,299 | 718,248 | 747,723 | 703,159 |
| Normal Disability ${ }^{(1)}$ | 0 | 0 | 0 | 0 | 0 | 0 | 302,356 | 295,776 | 244,208 | 220,490 |
| Insured Disability ${ }^{(2)}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,837,786 | 1,796,299 | 1,905,122 |
| Death Benefits | 255,000 | 220,000 | 290,000 | 305,000 | 425,000 | 410,000 | 410,000 | 415,000 | 455,000 | 530,000 |
| Total Benefits | \$78,994,438 | \$86,255,201 | \$95,402,854 | \$111,985,064 | \$133,498,818 | \$144,334,345 | \$154,987,027 | \$157,742,337 | \$164,997,406 | \$175,970,479 |

[^8]
## Schedule of Retired Members By Type of Benefit

All Members

| Amount of Monthly Benefit | Type of Benefit |  |  |  |  |  | Total <br> Recipients |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Retirement |  | Disability |  |  | Survivor |  |
|  | Normal | Early | Normal | Work-Related | Long-Term |  |  |
| 1-200 | 17 | 27 | 5 | 0 | 3 | 200 | 252 |
| 201-400 | 104 | 97 | 5 | 1 | 18 | 316 | 541 |
| 401-600 | 142 | 91 | 4 | 0 | 14 | 262 | 513 |
| 601-800 | 187 | 40 | 7 | 2 | 8 | 214 | 458 |
| 801-1000 | 202 | 25 | 2 | 5 | 3 | 144 | 381 |
| 1001-1200 | 257 | 15 | 4 | 3 | 0 | 120 | 399 |
| 1201-1400 | 268 | 5 | 2 | 4 | 1 | 95 | 375 |
| 1401-1600 | 292 | 3 | 0 | 4 | 0 | 74 | 373 |
| 1601-1800 | 322 | 7 | 0 | 8 | 0 | 65 | 402 |
| 1801-2000 | 335 | 1 | 0 | 3 | 0 | 61 | 400 |
| 2001-2200 | 323 | 1 | 0 | 1 | 0 | 49 | 374 |
| 2201-2400 | 309 | 2 | 0 | 3 | 0 | 43 | 357 |
| 2401-2600 | 325 | 1 | 0 | 1 | 0 | 34 | 361 |
| 2601-2800 | 240 | 0 | 0 | 1 | 0 | 21 | 262 |
| 2801-3000 | 191 | 0 | 0 | 0 | 0 | 23 | 214 |
| > 3000 | 1,348 | 0 | 0 | 0 | 0 | 91 | 1,439 |
| TOTALS | 4,862 | 315 | 29 | 36 | 47 | 1,812 | 7,101 * |

## MoDOT

| Amount of Monthly Benefit | Type of Benefit |  |  |  |  |  | Total Recipients |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Retirement |  | Disability |  |  | Survivor |  |
|  | Normal | Early | Normal | Work-Related | Long-Term |  |  |
| 1-200 | 14 | 18 | 5 | 0 | 2 | 186 | 225 |
| 201-400 | 76 | 81 | 5 | 1 | 17 | 297 | 477 |
| 401-600 | 107 | 79 | 4 | 0 | 11 | 239 | 440 |
| 601-800 | 152 | 34 | 7 | 2 | 8 | 188 | 391 |
| 801-1000 | 166 | 21 | 2 | 5 | 3 | 120 | 317 |
| 1001-1200 | 228 | 13 | 4 | 3 | 0 | 106 | 354 |
| 1201-1400 | 231 | 5 | 2 | 4 | 1 | 71 | 314 |
| 1401-1600 | 259 | 3 | 0 | 4 | 0 | 58 | 324 |
| 1601-1800 | 268 | 7 | 0 | 5 | 0 | 54 | 334 |
| 1801-2000 | 287 | 1 | 0 | 2 | 0 | 40 | 330 |
| 2001-2200 | 271 | 1 | 0 | 1 | 0 | 30 | 303 |
| 2201-2400 | 268 | 2 | 0 | 3 | 0 | 33 | 306 |
| 2401-2600 | 286 | 1 | 0 | 0 | 0 | 26 | 313 |
| 2601-2800 | 207 | 0 | 0 | 1 | 0 | 16 | 224 |
| 2801-3000 | 165 | 0 | 0 | 0 | 0 | 19 | 184 |
| > 3000 | 758 | 0 | 0 | 0 | 0 | 72 | 830 |
| TOTALS | 3,743 | 266 | 29 | 31 | 42 | 1,555 | 5,666 |

* This number includes four retirement system staff retirees.


## Schedule of Retired Members By Type of Benefit (continued)

## Uniformed Patrol

| Amount of Monthly Benefit | Type of Benefit |  |  |  |  |  | Total Recipients |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Retirement |  | Disability |  |  | Survivor |  |
|  | Normal | Early | Normal | Work-Related | Long-Term |  |  |
| 1-200 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 201-400 | 5 | 0 | 0 | 0 | 0 | 4 | 9 |
| 401-600 | 9 | 0 | 0 | 0 | 0 | 6 | 15 |
| 601-800 | 6 | 0 | 0 | 0 | 0 | 13 | 19 |
| 801-1000 | 4 | 0 | 0 | 0 | 0 | 10 | 14 |
| 1001-1200 | 3 | 0 | 0 | 0 | 0 | 5 | 8 |
| 1201-1400 | 4 | 0 | 0 | 0 | 0 | 10 | 14 |
| 1401-1600 | 1 | 0 | 0 | 0 | 0 | 13 | 14 |
| 1601-1800 | 4 | 0 | 0 | 2 | 0 | 8 | 14 |
| 1801-2000 | 5 | 0 | 0 | 0 | 0 | 17 | 22 |
| 2001-2200 | 1 | 0 | 0 | 0 | 0 | 15 | 16 |
| 2201-2400 | 3 | 0 | 0 | 0 | 0 | 10 | 13 |
| 2401-2600 | 3 | 0 | 0 | 1 | 0 | 7 | 11 |
| 2601-2800 | 11 | 0 | 0 | 0 | 0 | 5 | 16 |
| 2801-3000 | 13 | 0 | 0 | 0 | 0 | 4 | 17 |
| > 3000 | 526 | 0 | 0 | 0 | 0 | 16 | 542 |
| TOTALS | 598 | 0 | 0 | 3 | 0 | 144 | 745 |

## Civilian Patrol

| Amount of Monthly Benefit | Type of Benefit |  |  |  |  |  | Total Recipients |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Retirement |  | Disability |  |  | Survivor |  |
|  | Normal | Early | Normal | Work-Related | Long-Term |  |  |
| 1-200 | 2 | 9 | 0 | 0 | 1 | 13 | 25 |
| 201-400 | 23 | 16 | 0 | 0 | 1 | 15 | 55 |
| 401-600 | 26 | 12 | 0 | 0 | 3 | 17 | 58 |
| 601-800 | 29 | 6 | 0 | 0 | 0 | 13 | 48 |
| 801-1000 | 31 | 4 | 0 | 0 | 0 | 14 | 49 |
| 1001-1200 | 26 | 2 | 0 | 0 | 0 | 9 | 37 |
| 1201-1400 | 33 | 0 | 0 | 0 | 0 | 14 | 47 |
| 1401-1600 | 32 | 0 | 0 | 0 | 0 | 3 | 35 |
| 1601-1800 | 50 | 0 | 0 | 1 | 0 | 3 | 54 |
| 1801-2000 | 43 | 0 | 0 | 1 | 0 | 4 | 48 |
| 2001-2200 | 51 | 0 | 0 | 0 | 0 | 4 | 55 |
| 2201-2400 | 38 | 0 | 0 | 0 | 0 | 0 | 38 |
| 2401-2600 | 36 | 0 | 0 | 0 | 0 | 1 | 37 |
| 2601-2800 | 21 | 0 | 0 | 0 | 0 | 0 | 21 |
| 2801-3000 | 13 | 0 | 0 | 0 | 0 | 0 | 13 |
| > 3000 | 63 | 0 | 0 | 0 | 0 | 3 | 66 |
| TOTALS | 517 | 49 | 0 | 2 | 5 | 113 | 686 |

# Schedule of Average Monthly Benefit Payments 

MoDOT

By Years of Service

| Retired In |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | Average Benefit | \$ 255 | 574 | 723 | 1,164 | 1,670 | 2,271 | 2,763 | 3,316 |
|  | Average FAP | \$1,653 | 1,915 | 2,293 | 2,217 | 2,601 | 2,944 | 3,217 | 3,466 |
|  | Current Retirees | 3 | 8 | 10 | 19 | 39 | 38 | 47 | 25 |
| 1999 | Average Benefit | \$ 369 | 627 | 862 | 1,241 | 1,745 | 2,464 | 2,870 | 3,536 |
|  | Average FAP | \$1,915 | 2,136 | 1,979 | 2,456 | 2,500 | 3,219 | 3,517 | 3,932 |
|  | Current Retirees | 1 | 7 | 13 | 18 | 36 | 34 | 38 | 21 |
| 2000 | Average Benefit | \$ 275 | 554 | 952 | 1,095 | 2,045 | 2,587 | 2,795 | 3,625 |
|  | Average FAP | \$1,614 | 2,360 | 2,621 | 2,290 | 2,905 | 3,345 | 3,561 | 4,190 |
|  | Current Retirees | 2 | 9 | 12 | 17 | 53 | 69 | 56 | 39 |
| 2001 | Average Benefit | \$ 292 | 472 | 706 | 1,229 | 2,001 | 2,699 | 2,802 | 3,576 |
|  | Average FAP | \$2,051 | 1,774 | 1,559 | 2,291 | 2,802 | 3,384 | 3,699 | 4,330 |
|  | Current Retirees | 19 | 24 | 26 | 32 | 76 | 151 | 61 | 25 |
| 2002 | Average Benefit | \$ 392 | 576 | 698 | 1,270 | 2,216 | 2,736 | 2,822 | 2,701 |
|  | Average FAP | \$2,216 | 2,627 | 2,379 | 2,603 | 3,128 | 3,712 | 4,150 | 4,063 |
|  | Current Retirees | 1 | 16 | 14 | 29 | 57 | 63 | 32 | 19 |
| 2003 | Average Benefit | \$ 346 | 471 | 698 | 1,259 | 2,121 | 2,591 | 2,732 | 3,068 |
|  | Average FAP | \$2,299 | 1,955 | 2,060 | 2,379 | 3,006 | 3,451 | 3,841 | 4,085 |
|  | Current Retirees | 13 | 11 | 12 | 21 | 48 | 38 | 31 | 15 |
| 2004 | Average Benefit | \$ 332 | 561 | 907 | 1,282 | 2,082 | 2,817 | 2,508 | 3,389 |
|  | Average FAP | \$3,034 | 2,691 | 2,806 | 2,564 | 2,878 | 3,453 | 3,639 | 4,642 |
|  | Current Retirees | 10 | 15 | 19 | 23 | 67 | 60 | 27 | 8 |
| 2005 | Average Benefit | \$ 351 | 429 | 745 | 1,360 | 2,272 | 2,504 | 3,086 | 2,978 |
|  | Average FAP | \$2,558 | 1,964 | 2,732 | 2,676 | 3,367 | 3,319 | 3,906 | 4,003 |
|  | Current Retirees | 12 | 19 | 21 | 9 | 51 | 22 | 19 | 7 |
| 2006 | Average Benefit | \$ 338 | 547 | 753 | 1,368 | 2,298 | 2,537 | 3,414 | 3,373 |
|  | Average FAP | \$3,109 | 2,769 | 2,711 | 3,024 | 3,441 | 3,379 | 4,182 | 4,086 |
|  | Current Retirees | 14 | 16 | 18 | 26 | 59 | 33 | 11 | 7 |
| 2007 | Average Benefit | \$ 248 | 464 | 699 | 1,516 | 2,233 | 2,782 | 3,069 | 3,107 |
|  | Average FAP | \$2,218 | 2,409 | 2,475 | 3,007 | 3,389 | 3,785 | 3,970 | 3,938 |
|  | Current Retirees | 24 | 28 | 21 | 31 | 68 | 38 | 15 | 7 |

FAP = Final Average Pay

## Schedule of Average Monthly Benefit Payments (continued)

## Uniformed Patrol

By Years of Service

| Retired In |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | Average Benefit | \$ 0 | 406 | 0 | 0 | 3,952 | 4,551 | 5,350 | 0 |
|  | Average FAP | 0 | 1,072 | 0 | 0 | 4,412 | 4,464 | 4,458 | 0 |
|  | Current Retirees | 0 | 1 | 0 | 0 | 8 | 19 | 1 | 0 |
| 1999 | Average Benefit | 0 | 484 | 0 | 1,936 | 3,930 | 4,603 | 4,969 | 0 |
|  | Average FAP | \$ 0 | 1,399 | 0 | 2,926 | 4,472 | 4,768 | 4,679 | 0 |
|  | Current Retirees | 0 | 1 | 0 | 1 | 10 | 30 | 5 | 0 |
| 2000 | Average Benefit | 0 | 695 | 0 | 2,038 | 4,153 | 4,520 | 5,009 | 0 |
|  | Average FAP | \$ | 1,275 | 0 | 3,053 | 4,792 | 4,867 | 4,735 | 0 |
|  | Current Retirees | 0 | 1 | 0 | 2 | 2 | 15 | 8 | 0 |
| 2001 | Average Benefit | \$ 0 | 547 | 0 | 1,261 | 3,329 | 4,431 | 5,219 | 5,659 |
|  | Average FAP | \$ 0 | 801 | 0 |  | 4,286 | 4,849 | 5,341 | 5,352 |
|  | Current Retirees | 0 | 3 | 0 | 1 | 6 | 11 | 4 | 1 |
| 2002 | Average Benefit | \$ 0 | 698 | 1,759 | 3,194 | 3,769 | 4,437 | 4,866 | 6,300 |
|  | Average FAP | \$ 0 | 2,564 | 3,580 | 4,566 | 4,669 | 5,380 | 5,373 | 5,624 |
|  | Current Retirees | 0 | 1 | 1 | 1 | 9 | 12 | 10 | 1 |
| 2003 | Average Benefit | \$ 366 | 474 | 0 | 0 | 3,382 | 4,364 | 4,389 | 0 |
|  | Average FAP | \$1,051 | 1,514 | 0 | 0 | 4,378 | 5,247 | 4,982 | 0 |
|  | Current Retirees | 2 | 1 | 0 | 0 | 12 | 6 | 8 | 0 |
| 2004 | Average Benefit | \$ 566 | 394 | 1,434 | 0 | 3,167 | 3,876 | 4,297 | 4,781 |
|  | Average FAP | \$2,295 | 992 | 3,000 | 0 | 4,372 | 4,849 | 5,171 | 5,078 |
|  | Current Retirees | 1 | 1 | 1 | 0 | 8 | 8 | 6 | 1 |
| 2005 | Average Benefit | \$ 0 | 603 | 1,233 | 2,444 | 3,277 | 3,506 | 4,834 | 5,151 |
|  | Average FAP | \$ 0 | 2,386 | 2,772 | 3,870 | 4,807 | 4,787 | 5,362 | 5,158 |
|  | Current Retirees | 0 | 2 | 1 | 2 | 5 | 6 | 4 | 1 |
| 2006 | Average Benefit | \$ 382 | 0 | 1,254 | 0 | 3,098 | 3,774 | 4,289 | 0 |
|  | Average FAP | \$1,628 | 0 | 3,007 | 0 | 4,884 | 5,214 | 5,004 | 0 |
|  | Current Retirees | 1 | 0 | 2 | 0 | 6 | 10 | 1 | 0 |
| 2007 | Average Benefit | \$ 509 | 646 | 958 | 0 | 3,153 | 4,130 | 4,623 | 0 |
|  | Average FAP | \$2,292 | 2,260 | 2,899 | 0 | 5,287 | 5,684 | 5,514 | 0 |
|  | Current Retirees | 1 | 3 | 2 | 0 | 5 | 12 | 5 | 0 |

FAP = Final Average Pay

# Schedule of Average Monthly Benefit Payments (continued) 

## Civilian Patrol

By Years of Service

| Retired In Fiscal Year |  | 0-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31-35 | 36-40 | 41+ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1998 | Average Benefit | \$ 223 | 664 | 850 | 993 | 1,571 | 2,277 | 2,610 | 3,580 |
|  | Average FAP | \$1,292 | 1,976 | 2,083 | 2,074 | 2,654 | 2,946 | 3,126 | 3,618 |
|  | Current Retirees | 1 | 3 | 2 | 2 | 4 | 7 | 4 | 2 |
| 1999 | Average Benefit | \$ 0 | 363 | 545 | 1,161 | 1,554 | 2,206 | 2,586 | 0 |
|  | Average FAP | \$ 0 | 1,422 | 1,363 | 2,290 | 2,443 | 2,893 | 3,130 | 0 |
|  | Current Retirees | 0 | 3 | 1 | 3 | 2 | 10 | 6 | 0 |
| 2000 | Average Benefit | \$ 300 | 618 | 725 | 1,136 | 1,948 | 2,382 | 2,733 | 2,709 |
|  | Average FAP | \$1,676 | 2,784 | 1,968 | 2,535 | 2,807 | 3,188 | 3,785 | 2,785 |
|  | Current Retirees | 2 | 1 | 2 | 4 | 6 | 9 | 6 | 1 |
| 2001 | Average Benefit | \$ 279 | 595 | 819 | 1,068 | 1,948 | 2,567 | 2,648 | 2,754 |
|  | Average FAP | \$1,844 | 1,083 | 1,936 | 2,057 | 2,911 | 3,158 | 3,714 | 3,176 |
|  | Current Retirees | 5 | 1 | 1 | 3 | 13 | 23 | 10 | 2 |
| 2002 | Average Benefit | \$ 186 | 316 | 944 | 1,153 | 2,012 | 2,298 | 2,180 | 0 |
|  | Average FAP | \$1,767 | 1,907 | 2,477 | 2,129 | 2,827 | 3,215 | 3,209 | 0 |
|  | Current Retirees | 2 | 5 | 1 | 5 | 7 | 5 | 4 | 0 |
| 2003 | Average Benefit | \$ 357 | 417 | 621 | 1,240 | 2,108 | 2,062 | 1,985 | 2,082 |
|  | Average FAP | \$1,917 | 1,405 | 2,498 | 2,490 | 2,720 | 2,855 | 3,611 | 3,001 |
|  | Current Retirees | 3 | 3 | 5 | 3 | 10 | 15 | 3 | 3 |
| 2004 | Average Benefit | \$ 242 | 442 | 542 | 1,332 | 1,767 | 2,364 | 2,797 | 5,167 |
|  | Average FAP | \$1,985 | 2,119 | 2,025 | 2,353 | 2,768 | 2,971 | 3,440 | 5,259 |
|  | Current Retirees | 2 | 5 | 2 | 4 | 10 | 8 | 7 | 1 |
| 2005 | Average Benefit | \$ 235 | 378 | 645 | 922 | 2,557 | 3,450 | 1,649 | 3,149 |
|  | Average FAP | \$1,298 | 1,841 | 2,240 | 1,780 | 3,285 | 3,925 | 2,522 | 4,422 |
|  | Current Retirees | 2 | 2 | 3 | 5 | 7 | 8 | 1 | 1 |
| 2006 | Average Benefit | \$ 161 | 420 | 561 | 1,083 | 2,415 | 2,728 | 2,929 | 0 |
|  | Average FAP | \$2,080 | 2,066 | 2,003 | 2,537 | 3,343 | 3,439 | 3,189 | 0 |
|  | Current Retirees | 4 | 5 | 2 | 11 | 7 | 12 | 3 | 0 |
| 2007 | Average Benefit | \$ 275 | 432 | 465 | 1,320 | 2,383 | 2,498 | 2,143 | 0 |
|  | Average FAP | \$1,853 | 1,924 | 1,924 | 2,491 | 3,450 | 3,275 | 2,742 | 0 |
|  | Current Retirees | 5 | 5 | 4 | 6 | 8 | 13 | 3 | 0 |

FAP = Final Average Pay

# Schedule of Average Monthly Benefit Payments (continued) 

## MPERS

By Years of Service

| Retired In <br> Fiscal Year |  | 0-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31-35 | 36-40 | 41+ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1999 | Average Benefit | \$109 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | Average FAP | \$915 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | Current Retirees | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | Average Benefit | \$ 0 | 0 | 0 | 0 | 2,632 | 0 | 0 | 0 |
|  | Average FAP |  | 0 | 0 | 0 | 3,232 | 0 | 0 | 0 |
|  | Current Retirees | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2006 | Average Benefit | \$ 0 | 0 | 0 | 0 | 0 | 3,146 | 0 | 0 |
|  | Average FAP |  | 0 | 0 | 0 | 0 | 4,178 | 0 | 0 |
|  | Current Retirees | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 2007 | Average Benefit | \$ 0 | 0 | 911 | 0 | 0 | 0 | 0 | 0 |
|  | Average FAP |  | 0 | 3,081 | 0 | 0 | 0 | 0 | 0 |
|  | Current Retirees | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

NOTE: There were no retirements during the years not shown above.
FAP = Final Average Pay
Active Member Data

## Schedule of Participating Employers

|  | MoDOT |  | Patrol |  | MPERS |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employees | \% | Employees | \% | Employees | \% | Employees | \% |
| 1998 | 6,633 | 74.96 | 2,212 | 25.00 | 4 | 0.04 | 8,849 | 100 |
| 1999 | 6,952 | 75.95 | 2,198 | 24.02 | 3 | 0.03 | 9,153 | 100 |
| 2000 | 7,008 | 76.33 | 2,170 | 23.63 | 4 | 0.04 | 9,182 | 100 |
| 2001 | 6,969 | 76.53 | 2,133 | 23.43 | 4 | 0.04 | 9,106 | 100 |
| 2002 | 6,590 | 75.70 | 2,106 | 24.19 | 10 | 0.11 | 8,703 | 100 |
| 2003 | 6,716 | 75.50 | 2,169 | 24.39 | 10 | 0.11 | 8,895 | 100 |
| 2004 | 6,848 | 76.07 | 2,143 | 23.81 | 11 | 0.12 | 9,002 | 100 |
| 2005 | 6,980 | 76.15 | 2,174 | 23.72 | 12 | 0.13 | 9,166 | 100 |
| 2006 | 6,839 | 75.91 | 2,159 | 23.96 | 12 | 0.13 | 9,010 | 100 |
| 2007 | 6,459 | 74.76 | 2,168 | 25.10 | 12 | 0.14 | 8,639 | 100 |

Data for this chart is as of June 30, 2007.

## By Age

## Closed Plan

| Age | Total | MoDOT | Civilian <br> Patrol | Uniformed <br> Patrol | MPERS |
| :---: | ---: | :---: | :---: | :---: | :---: |
| $<21$ | 0 | 0 | 0 | 0 | 0 |
| $21-25$ | 2 | 2 | 0 | 0 | 0 |
| $26-30$ | 169 | 130 | 16 | 21 | 2 |
| $31-35$ | 585 | 383 | 49 | 151 | 2 |
| $36-40$ | 939 | 615 | 86 | 236 | 2 |
| $41-45$ | 1,125 | 828 | 130 | 167 | 0 |
| $46-50$ | 1,275 | 1,004 | 152 | 117 | 2 |
| $51-55$ | 914 | 687 | 136 | 90 | 1 |
| $56-60$ | 481 | 371 | 92 | 18 | 0 |
| $61-65$ | 106 | 86 | 19 | 0 | 1 |
| $>65$ | 20 | 17 | 3 | 0 | 0 |
| Total | $\mathbf{5 , 6 1 6}$ | $\mathbf{4 , 1 2 3}$ | $\mathbf{6 8 3}$ | $\mathbf{8 0 0}$ | $\mathbf{1 0}$ |
|  |  | $\mathbf{4 6}$ | $\mathbf{4 7}$ | $\mathbf{4 2}$ | $\mathbf{4 2}$ |

Year 2000 Plan

| Age | Total | MoDOT | Civilian <br> Patrol | Uniformed <br> Patrol | MPERS |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $<21$ | 26 | 23 | 3 | 0 | 0 |
| $21-25$ | 454 | 325 | 65 | 63 | 1 |
| $26-30$ | 661 | 467 | 82 | 112 | 0 |
| $31-35$ | 484 | 365 | 60 | 59 | 0 |
| $36-40$ | 358 | 292 | 52 | 14 | 0 |
| $41-45$ | 359 | 310 | 45 | 3 | 1 |
| $46-50$ | 303 | 255 | 47 | 1 | 0 |
| $51-55$ | 202 | 169 | 32 | 1 | 0 |
| $56-60$ | 122 | 92 | 30 | 0 | 0 |
| $61-65$ | 50 | 35 | 15 | 0 | 0 |
| $>65$ | 4 | 3 | 1 | 0 | 0 |
| Total | $\mathbf{3 , 0 2 3}$ | $\mathbf{2 , 3 3 6}$ | $\mathbf{4 3 2}$ | $\mathbf{2 5 3}$ | $\mathbf{2}$ |
|  |  | $\mathbf{3 7}$ | $\mathbf{3 8}$ | $\mathbf{2 9}$ | $\mathbf{3 4}$ |

By Years of Service

Closed Plan

| Years of <br> Service | Total | MoDOT | Civilian <br> Patrol | Uniformed <br> Patrol | MPERS |
| :---: | ---: | ---: | :---: | :---: | :---: |
| 01 | 6 | 6 | 0 | 0 | 0 |
| $01-05$ | 24 | 24 | 0 | 0 | 0 |
| $06-10$ | 1,304 | 974 | 162 | 165 | 3 |
| $11-15$ | 1,512 | 1,060 | 174 | 276 | 2 |
| $16-20$ | 1,021 | 726 | 136 | 158 | 1 |
| $21-25$ | 956 | 778 | 103 | 75 | 0 |
| $26-30$ | 544 | 385 | 83 | 73 | 3 |
| $31-35$ | 206 | 134 | 21 | 51 | 0 |
| $36-40$ | 36 | 30 | 3 | 2 | 1 |
| $41-45$ | 7 | 6 | 1 | 0 | 0 |
| $46+$ | 2 | 2 | 0 | 0 | 0 |
| Total | $\mathbf{5 , 6 1 8}$ | $\mathbf{4 , 1 2 5}$ | $\mathbf{6 8 3}$ | $\mathbf{8 0 0}$ | $\mathbf{1 0}$ |
|  |  | $\mathbf{1 7}$ | $\mathbf{1 7}$ | $\mathbf{1 7}$ | $\mathbf{2 0}$ |

Year 2000 Plan

| Years of <br> Service | Total | MoDOT | Civilian <br> Patrol | Uniformed <br> Patrol | MPERS |
| :---: | ---: | ---: | ---: | ---: | ---: |
| 01 | 588 | 470 | 84 | 33 | 1 |
| $01-05$ | 1,887 | 1,428 | 284 | 174 | 1 |
| $06-10$ | 541 | 431 | 64 | 46 | 0 |
| $11-15$ | 5 | 5 | 0 | 0 | 0 |
| $16-20$ | 1 | 1 | 0 | 0 | 0 |
| $21-25$ | 0 | 0 | 0 | 0 | 0 |
| $26-30$ | 0 | 0 | 0 | 0 | 0 |
| $31-35$ | 0 | 0 | 0 | 0 | 0 |
| $36-40$ | 0 | 0 | 0 | 0 | 0 |
| $41-45$ | 0 | 0 | 0 | 0 | 0 |
| $46+$ | 0 | 0 | 0 | 0 | 0 |
| Total | $\mathbf{3 , 0 2 1}$ | $\mathbf{2 , 3 3 4}$ | $\mathbf{4 3 2}$ | $\mathbf{2 5 3}$ | $\mathbf{2}$ |
|  |  | $\mathbf{3}$ | $\mathbf{3}$ | $\mathbf{3}$ | $\mathbf{2}$ |

# Terminated Vested MemberData For the YearEnded June 30, 2007 

By Age

## Closed Plan

| Age | Total | MoDOT | Civilian <br> Patrol | Uniformed <br> Patrol | MPERS |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $<21$ | 0 | 0 | 0 | 0 | 0 |
| $26-30$ | 32 | 24 | 7 | 1 | 0 |
| $31-35$ | 151 | 110 | 19 | 22 | 0 |
| $36-40$ | 314 | 216 | 37 | 61 | 0 |
| $41-45$ | 374 | 294 | 42 | 38 | 0 |
| $46-50$ | 341 | 279 | 49 | 13 | 0 |
| $51-55$ | 243 | 195 | 35 | 13 | 0 |
| $56-60$ | 110 | 93 | 15 | 2 | 0 |
| $61-65$ | 8 | 4 | 4 | 0 | 0 |
| $>65$ | 0 | 0 | 0 | 0 | 0 |
| Total | $\mathbf{1 5 7 3}$ | $\mathbf{1 2 1 5}$ | $\mathbf{2 0 8}$ | $\mathbf{1 5 0}$ | $\mathbf{0}$ |
| Average Age |  | $\mathbf{4 5}$ | $\mathbf{4 5}$ | $\mathbf{4 1}$ | $\mathbf{0}$ |

Year 2000 Plan

| Age | Total | MoDOT | Civilian <br> Patrol | Uniformed <br> Patrol | MPERS |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $<21$ | 0 | 0 | 0 | 0 | 0 |
| $21-25$ | 2 | 2 | 0 | 0 | 0 |
| $26-30$ | 17 | 14 | 3 | 0 | 0 |
| $31-35$ | 17 | 15 | 2 | 0 | 0 |
| $36-40$ | 8 | 4 | 4 | 0 | 0 |
| $41-45$ | 7 | 5 | 2 | 0 | 0 |
| $46-50$ | 4 | 4 | 0 | 0 | 0 |
| $51-55$ | 4 | 3 | 1 | 0 | 0 |
| $56-60$ | 2 | 2 | 0 | 0 | 0 |
| $61-65$ | 0 | 0 | 0 | 0 | 0 |
| $>65$ | 0 | 0 | 0 | 0 | 0 |
| Total | $\mathbf{6 1}$ | $\mathbf{4 9}$ | $\mathbf{1 2}$ | $\mathbf{0}$ | $\mathbf{0}$ |
|  |  | $\mathbf{3 6}$ | $\mathbf{3 7}$ | $\mathbf{0}$ | $\mathbf{0}$ |

## By Years of Service

## Closed Plan

| Years of <br> Service | Total | MoDOT | Civilian <br> Patrol | Uniformed <br> Patrol | MPERS |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $<1$ | 0 | 0 | 0 | 0 | 0 |
| $1-5$ | 0 | 0 | 0 | 0 | 0 |
| $06-10$ | 227 | 180 | 35 | 12 | 0 |
| $11-20$ | 516 | 369 | 60 | 87 | 0 |
| $16-20$ | 417 | 338 | 53 | 26 | 0 |
| $21-25$ | 234 | 198 | 30 | 6 | 0 |
| $26-30$ | 106 | 74 | 14 | 18 | 0 |
| $31-35$ | 46 | 33 | 12 | 1 | 0 |
| $36-40$ | 26 | 22 | 4 | 0 | 0 |
| $41-45$ | 1 | 1 | 0 | 0 | 0 |
| $46+$ | 0 | 0 | 0 | 0 | 0 |
| Total | $\mathbf{1 , 5 7 3}$ | $\mathbf{1 , 2 1 5}$ | $\mathbf{2 0 8}$ | $\mathbf{1 5 0}$ | $\mathbf{0}$ |
| Average Service |  | $\mathbf{1 7}$ | $\mathbf{1 7}$ | $\mathbf{1 6}$ | $\mathbf{0}$ |

Year 2000 Plan

| Years of <br> Service | Total | MoDOT | Civilian <br> Patrol | Uniformed <br> Patrol | MPERS |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0 | 0 | 0 | 0 | 0 |
| $1-5$ | 10 | 6 | 4 | 0 | 0 |
| $6-10$ | 51 | 43 | 8 | 0 | 0 |
| $11-15$ | 0 | 0 | 0 | 0 | 0 |
| $16-20$ | 0 | 0 | 0 | 0 | 0 |
| $21-25$ | 0 | 0 | 0 | 0 | 0 |
| $26-30$ | 0 | 0 | 0 | 0 | 0 |
| $31-35$ | 0 | 0 | 0 | 0 | 0 |
| $36-40$ | 0 | 0 | 0 | 0 | 0 |
| $41-45$ | 0 | 0 | 0 | 0 | 0 |
| $46+$ | 0 | $\mathbf{4 9}$ | $\mathbf{1 2}$ | 0 | 0 |
| Total | $\mathbf{6 1}$ | $\mathbf{6}$ | $\mathbf{6}$ | $\mathbf{0}$ | $\mathbf{0}$ |
| Average Service |  |  |  | $\mathbf{0}$ | $\mathbf{0}$ |

Benefit Recipients


## Membership Distribution



## Average Years of Service for New Retírees



Final Average Pay for New Retírees


This map represents the demographic distribution of retirees by state.


1 Retiree resides in England


[^0]:    (A schedule of funding progress is presented on page 36.)

[^1]:    See accompanying Notes to Financial Statements.

[^2]:    Larry Krummen, CFA

[^3]:    ** Timber was rolled into the overall Real Estate Allocation on 4/1/07.

[^4]:    ** Timber was rolled into the overall Real Estate Allocation on 04/01/07.

[^5]:    Space and cost restrictions make it impractical to print the entire investment porffolio in this report. However, a portfolio listing is available for review in the office of the Executive Director of MPERS.

[^6]:    * New assumptions adopted

[^7]:    * This summary describes the plan provisions of the Revised Statutes of Missouri (RSMo), as amended, that governed the programs, which MPERS administered during the period covered by this report. It does not overrule any applicable statute or administrative rule and, in the event of a conflict, the applicable statute or rule would apply. The Year 2000 Plan was effective July 1, 2000. A complete summary plan description is available at the MPERS office.
    ** Final Average Pay - highest 36 consecutive months of pay.

[^8]:    Prior to FY04, work-related and normal disabilities were reported as retiree benefits
    ${ }^{(2)}$ Outsourced LTD program began 07/01/04.

