# REPORT OF

# MISSOURI DEPARTMENT OF TRANSPORTATION
# AND HIGHWAY PATROL EMPLOYEES'
# RETIREMENT SYSTEM

## JUNE 30, 2024

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# INDEPENDENT AUDITOR'S REPORT

The Board of Trustees
Missouri Department of Transportation and
Highway Patrol Employees' Retirement System

**Opinion**

We have audited the statement of fiduciary net position of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System), as of June 30, 2024, and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table on contents.

In our opinion, the accompanying financial statements present fairly, in all material respects, the fiduciary net position of the System as of June 30, 2024, and the changes in fiduciary net position for the year then ended, in accordance with accounting principles generally accepted in the United States of America (GAAP).

**Basis for Opinion**

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities of the Audit of the Financial Statements section of our report. We are required to be independent of the System and to meet our ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a bases for our audit opinion.

**Responsibilities of Management for the Financial Statements**

Management is responsible for the preparation and fair presentation of the financial statements in accordance with GAAP, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether these are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

**Auditor's Responsibilities for the Audit of the Financial Statements**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.

- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.

- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

**Required Supplementary Information**

GAAP requires that the management's discussion and analysis and the schedules of changes in the employers' net pension liability, employers' contributions, investment returns, changes in net OPEB liability and related ratios, MPERS' proportionate share of net OPEB liability, and related notes be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with GAAS, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

**Supplementary Information**

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The schedule of administrative expenses, schedule of investment expenses, and the schedule of consultant and professional expenses are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied to the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with GAAS. In our opinion, the schedule of administrative expenses, the schedule of investment expenses, and the schedule of consultant and professional expenses are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Williams-Keepers LLC

Columbia, Missouri
November 4, 2024

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 for the fiscal year ended June 30, 2024. While this discussion is intended to summarize the financial status of MPERS, readers should consider this information in conjunction with the information that is furnished in the more detailed financial statements and corresponding notes.

## DESCRIPTION OF BASIC FINANCIAL STATEMENTS

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 MPERS, 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 Fiduciary Net Position* includes all the System's assets and deferred outflows of resources, and liabilities and deferred inflows of resources, with the difference reported as net position.

- The *Statement of Changes in Fiduciary Net Position* 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 for 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.

**Supplementary Information** follows the required supplementary information and provides additional detailed administrative and investment expense information.

## ANALYSIS OF FINANCIAL POSITION AND RESULTS OF OPERATIONS

Overall, the financial position of MPERS increased by $396.0 million, reported as the "net increase". This is primarily a result of the increase in the fair value of investments for the year ended June 30, 2024. The funded status of the plan showed an increase of 1.63%, primarily due to positive investment returns.

The following schedules present summarized comparative data from the System's financial statements for each of the fiscal years ended June 30, 2024 and 2023. Following each schedule is a brief summary providing explanation and analyses of the major reasons for changes in the condensed financial statements.

***Summarized Comparative Statements of Fiduciary Net Position***

| | June 30, 2024 | June 30, 2023 | % Change 2024 / 2023 |
|---|---|---|---|
| Cash and Receivables | $ 31,264,488 | $ 43,820,838 | -28.7 |
| Investments | 3,658,217,662 | 3,266,926,550 | 12.0 |
| Invested Securities Lending Collateral | 21,142,145 | 18,946,422 | 11.6 |
| Capital Assets | 526,358 | 536,438 | -1.9 |
| **Total Assets** | **3,711,150,653** | **3,330,230,248** | **11.4** |
| **Deferred Outflows of Resources** | **288,727** | **398,255** | **-27.5** |
| Accounts Payable | 9,861,326 | 27,290,762 | -63.9 |
| OPEB Obligation | 837,636 | 1,929,126 | -56.6 |
| Securities Lending Collateral | 21,725,160 | 19,284,048 | 12.7 |
| **Total Liabilities** | **32,424,122** | **48,503,936** | **-33.2** |
| **Deferred Inflows of Resources** | **1,357,751** | **496,723** | **173.3** |
| **Net Position Restricted for Pensions** | **$ 3,677,657,507** | **$ 3,281,627,844** | **12.1** |

The decrease in cash and receivables is primarily attributable to a decrease of investment sales receivable as of June 30, 2024. Fluctuations in this area are normal, based on investment activity.

The System's investments represent the main component of total assets. These investments include equities, fixed income, limited partnerships, hedge funds, and short-term investments. The increase in fair value of investments as of June 30, 2024, is a result of the positive investment performance during the fiscal year. The fiscal year 2024 investment return was 13.29% as calculated on a time-weighted rate of return methodology.

Capital assets decreased in fiscal year 2024 due to the depreciation of existing assets.

Deferred outflows of resources are related to Other Post-Employment Benefits (OPEB), required by Governmental Accounting Standards Board (GASB) Statement 75. The deferred outflows of resources relate to the timing of contributions paid and changes in assumptions.

The liabilities in fiscal year 2024 consist of accounts payable, OPEB obligation, and securities lending collateral. The decrease in accounts payable for fiscal year 2024 is attributable to lower investment purchases payable. Fluctuations in this area are normal, based on investment activity. The largest component of liabilities is securities lending collateral. This represents the amount owed for collateral to be returned as the result of investment securities lent. The corresponding securities lending collateral asset is valued at a lower amount than the securities lending collateral liability due to the fair value of the securities on loan being less than the collateral value.

Deferred inflows of resources are related to OPEB. The deferred inflows of resources relate primarily to the amortization of changes in actuarial assumptions.

The System's net position restricted for pensions was $3.678 billion as of June 30, 2024, a $396.0 million increase from the $3.282 billion net position as of June 30, 2023.

***Summarized Comparative Statements of Changes in Fiduciary Net Position***

| | Year Ended June 30, 2024 | Year Ended June 30, 2023 | % Change 2024 / 2023 |
|---|---|---|---|
| Contributions | $ 270,240,170 | $ 244,262,169 | 10.6 |
| Net Investment Income | 432,121,321 | 264,756,429 | 63.2 |
| Other Income | 179 | 1,954 | -90.9 |
| **Total Additions** | **702,361,670** | **509,020,552** | **38.0** |
| Benefits | 300,081,057 | 289,056,536 | 3.8 |
| Administrative Expenses | 6,250,950 | 5,529,258 | 13.1 |
| **Total Deductions** | **306,332,007** | **294,585,794** | **4.0** |
| Net Increase | 396,029,663 | 214,434,758 | 84.7 |
| Net Position-Beginning | 3,281,627,844 | 3,067,193,086 | 7.0 |
| **Net Position-Ending** | **$ 3,677,657,507** | **$ 3,281,627,844** | **12.1** |

Net investment income, a primary component of plan additions, was $432.1 million for fiscal year 2024, which represented an 13.29% return for the fiscal year ended June 30, 2024. In comparison, the fiscal year 2023 income of $264.8 million represented an investment return of 8.88%. Annual fluctuations within the broad investment markets are outside the control of the System and are expected to fluctuate from year to year. Fiscal year 2024 was a good year as MPERS outperformed its policy index by 1.0%, building on the positive fiscal year 2023 investment return of 8.88% which outperformed the policy index by 2.44%. The Board of Trustees has approved a diversified asset allocation that, over long periods of time, is expected to realize the assumed actuarial rate of investment return of 6.50%.

Total benefits increased in fiscal year 2024 by $11.0 million from fiscal year 2023 due to inflation driving up the annual cost-of-living adjustment (COLA) and due to an increase in the total number of retirees.

The increase in fiscal year 2024 administrative expenses is due to inflation putting upward pressure on the annual cost of living adjustment causing higher personnel and related benefit expenses.

## CURRENTLY KNOWN FACTS AND RECENT EVENTS

Based on the June 30, 2024 actuarial valuation, the Board of Trustees approved a decrease to the required state contribution rate for non-uniformed payroll (MoDOT, civilian patrol, and MPERS) to 37.013%, effective July 1, 2025. The rate approved for uniformed patrol decreases to 58.005%.

Based on the June 30, 2023 actuarial valuation, the Board of Trustees approved a decrease to the required state contribution rate for non-uniformed payroll (MoDOT, civilian patrol, and MPERS) to 52.008%, effective July 1, 2024. The rate approved for uniformed patrol increased to 58.491%.

## 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:

MoDOT and Patrol Employees' Retirement System
PO Box 1930
Jefferson City, MO 65102-1930
mpers@mpers.org

# Statement of Fiduciary Net Position

As of June 30, 2024

| | |
|---|---|
| **ASSETS:** | |
| Cash | $ 783,073 |
| Receivables | |
| Contributions | 11,303,341 |
| Accrued Interest and Income | 11,273,296 |
| Investment Sales | 7,877,386 |
| Other | 27,392 |
| Total Receivables | 30,481,415 |
| Investments, at Fair Value | |
| Equities | 195,503,067 |
| Fixed Income | 1,120,116,319 |
| Limited Partnerships | 1,728,528,771 |
| Hedge Funds | 28,233,970 |
| Short-Term Investments | 585,835,535 |
| Total Investments | 3,658,217,662 |
| Invested Securities Lending Collateral | 21,142,145 |
| Capital Assets, net of Depreciation | |
| Land | 188,319 |
| Building and Improvements | 745,828 |
| Furniture, Equipment and Software | 3,469,737 |
| Accumulated Depreciation | (3,877,526) |
| Capital Assets, net of Depreciation | 526,358 |
| **TOTAL ASSETS** | **$ 3,711,150,653** |
| **DEFERRED OUTFLOWS OF RESOURCES** | **$ 288,727** |
| **LIABILITIES:** | |
| Accounts Payable | $ 2,146,932 |
| OPEB Obligation | 837,636 |
| Security Lending Collateral | 21,725,160 |
| Investment Purchases | 7,714,394 |
| **TOTAL LIABILITIES** | **$ 32,424,122** |
| **DEFERRED INFLOWS OF RESOURCES** | **$ 1,357,751** |
| **NET POSITION RESTRICTED FOR PENSIONS** | **$ 3,677,657,507** |

*See accompanying Notes to the Financial Statements.*

# Statement of Changes in Fiduciary Net Position

For the Year Ended June 30, 2024

| | |
|---|---|
| **ADDITIONS:** | |
| Contributions | |
| Employer | $ 254,358,101 |
| Employee | 8,249,824 |
| Service Transfers from Other System | 6,634,554 |
| Other | 997,691 |
| Total Contributions | 270,240,170 |
| Investment Income from Investing Activities | |
| Net Appreciation in Fair Value of Investments | 321,420,873 |
| Interest and Dividends | 155,816,493 |
| Investment Expenses | (45,272,091) |
| Net Investment Gain | 431,965,275 |
| Income from Securities Lending Activities | |
| Securities Lending Gross Income | 1,293,969 |
| Securities Lending Expenses, net | (1,137,923) |
| Net Income from Securities Lending Activities | 156,046 |
| Other Income | 179 |
| **TOTAL ADDITIONS** | **$ 702,361,670** |
| **DEDUCTIONS:** | |
| Benefit Expenses | |
| Retiree and Survivor Annuity Benefits | $ 279,354,910 |
| BackDROP Payments | 12,241,819 |
| Disability Benefits | 2,444,581 |
| Death Benefits | 960,000 |
| Service Transfer Payments | 4,082,999 |
| Employee Contribution Refunds | 996,748 |
| Total Benefits Expenses | 300,081,057 |
| Administrative Expenses | 6,250,950 |
| **TOTAL DEDUCTIONS** | **$ 306,332,007** |
| NET INCREASE | $ 396,029,663 |
| **NET POSITION RESTRICTED FOR PENSIONS** | |
| **Beginning of Year** | **$ 3,281,627,844** |
| **End of Year** | **$ 3,677,657,507** |

*See accompanying Notes to the Financial Statements.*

# NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

As established under Section 104.020 of the Revised Statutes of Missouri (RSMo.), the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS) is a body corporate and an instrumentality of the State of Missouri (State). 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. 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 and timber investments are based on net asset value estimates provided by the general partners' administrators or portfolio managers, which are compared to independent appraisals. Investments that do not have an established market are reported at estimated fair value. The fair value of the hedge fund portfolios and partnership portfolios are based on valuations of the underlying assets as reported by the general partner or portfolio manager.

**Note 1 (c) - Net Investment in Capital Assets**

MPERS capitalizes assets with an expected useful life greater than one year and a cost greater than $5,000. 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:

| | |
|---|---|
| Furniture, Equipment and Software | 3-10 years |
| Building and Improvements | 30 years |

**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 DESCRIPTIONS AND CONTRIBUTION INFORMATION

MPERS is a body corporate and an instrumentality of the state as a multiple-employer, public employee retirement system with one plan that has three benefit structures known as the Closed Plan, the Year 2000 Plan, and the Year 2000 Plan-2011 Tier. The plan provides retirement, survivor, and disability benefits for employees of MoDOT, MSHP, and MPERS. The plan is administered in accordance with the requirements of a cost sharing, multiple-employer, public employee retirement plan under the Revised Statutes of Missouri. In MPERS are vested the powers and duties specified in sections 104.010 to 104.312, 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, which consists of eleven members, four elected by the active and retired plan members, three Highway and Transportation Commissioners, a State Senator appointed by the President Pro Tempore of the Senate, a State Representative appointed by the Speaker of the House, and the MoDOT Director and MSHP Superintendent who serve as ex-officio members. 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. All covered employees hired on or after July 1, 2000, and before January 1, 2011, are eligible for membership in the Year 2000 Plan. All covered employees hired on or after January 1, 2011, are eligible for membership in the Year 2000 Plan's 2011 Tier.

***Membership in the Closed Plan, Year 2000 Plan, and 2011 Tier as of June 30, 2024***

| | Closed | Year 2000 | Tier 2011 | Total |
|---|---|---|---|---|
| Retirees, Beneficiaries, and Disabilities Currently Receiving Benefits | 4,736 | 4,968 | 99 | 9,803 |
| Terminated Employees Entitled to But Not Yet Receiving Benefits | 756 | 1,028 | 427 | 2,211 |
| Active Employees | | | | |
| Vested | 1,103 | 1,803 | 1,780 | 4,686 |
| Non-Vested | 3 | 48 | 2,151 | 2,202 |
| **Total Membership** | **6,598** | **7,847** | **4,457** | **18,902** |

**Closed Plan Description**

Employees covered by the Closed Plan are fully vested for benefits upon receiving 5 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 member's age and service equaling 80 or more (active or terminated & vested).

The following provisions apply for uniformed patrol members of the Closed Plan:

- 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 member's 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, 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 on or after January 1, 1995, or to vested deferred members.

For members employed prior to August 28, 1997, COLAs are provided annually based on 80% of the increase in the consumer price index for all urban consumers for the United States (CPI-U). The minimum rate is 4% and the maximum rate is 5%, until the cumulative amount of COLAs equals 65% of the original benefit. Thereafter, the 4% minimum rate is eliminated, and the annual COLA rate will be equal to 80% of the increase in the CPI-U (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, upon appropriate notification to MPERS.

Members may name a new spouse as beneficiary if:

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

The member has 1 year from the date of marriage to re-elect a payment option and name a new spouse.

All members who retire from active employment or long-term 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 Year 2000 Plan are fully vested for benefits upon earning 5 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 member's age and service equaling 80 or more (active).

The following provisions apply for uniformed patrol members of the Year 2000 Plan:

- "Rule of 80" – at least age 48 with sum of member's age and service equaling 80 or more (active);
- Mandatory retirement at age 60 (active only).

All members may retire early with reduced benefits at age 57 with at least 5 years of creditable service.

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), receive an additional temporary benefit until age 62. The temporary benefit is equivalent to 0.8% multiplied by final average pay multiplied by years of creditable service.

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 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 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 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 is based on the member's age at retirement, as well as the age difference between 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, upon appropriate notification to MPERS.

Members may name a new spouse for survivor benefits if:
- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has 1 year from the date of marriage to re-elect the payment option and name a new spouse.

All members who retire from active employment or long-term 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.

**Year 2000 Plan-2011 Tier Description**

Employees covered by the 2011 Tier are fully vested for benefits upon earning 5 years of creditable service if they were active on or after January 1, 2018. Under the 2011 Tier, MoDOT and civilian employees may retire with full benefits upon the earliest of attaining:
- Age 67 and with 5 or more years of creditable service (active or terminated & vested);
- "Rule of 90" – at least age 55 with sum of member's age and service equaling 90 or more (active only).

Active MoDOT and civilian employees may retire early with reduced benefits at age 62 with at least 5 years of creditable service. The following provisions apply for uniformed patrol members of the 2011 Tier:
- Age 55 and with 5 or more years of creditable service (active only);
- Mandatory retirement at age 60 with no minimum service amount (active only).

Terminated and vested uniformed patrol employees may retire at age 67 with 5 or more years of creditable service.

The base benefit in the 2011 Tier is equal to 1.7% multiplied by the final average pay multiplied by years of creditable service. Members retiring under the Rule of 90, and uniform patrol members retiring at the mandatory retirement age (currently 60) or at age 55 with 5 years of creditable service, receive an additional temporary benefit until age 62. The temporary benefit is 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 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 is based on the member's age at retirement, as well as the age difference between 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, upon appropriate notification to MPERS.

Members may name a new spouse for survivor benefits if:
- They were single at retirement and since married;
- They elected a spouse option at the time of retirement, the spouse preceded the member in death, and then a remarriage occurred.

The member has 1 year from the date of marriage to re-elect the payment option and name a new spouse.

All members who retire from active employment or long-term disability, or begin receiving work-related disability benefits, on or after January 1, 2011, are provided a $5,000 death benefit payable to designated beneficiaries.

**Contributions**

Beginning January 1, 2011, employee contributions of 4% of gross pay are required for those covered by the Year 2000 Plan-2011 Tier.

Employer contributions are determined through annual actuarial valuations. Administrative expenses are financed through contributions from participating employers and investment earnings.

Participating employers are required to make contributions to the plan based on the actuarially determined rate. Detailed information regarding contributions can be found in Note 5.

## NOTE 3 – DEPOSITS AND INVESTMENTS

The Board of Trustees has established policies and procedures by which funds are invested. Section 104.150, RSMo., provides the authority for the Board to invest MPERS funds. Plan assets are invested in a diversified portfolio following prudent standards for preservation of capital, with the goal of achieving the highest possible rate of return consistent with MPERS' tolerance for risk. The Board of Trustees establishes MPERS' asset allocation policy and may amend the policy. The following is MPERS' current asset allocation policy:

| Asset Class | Target Allocation |
|---|---|
| Public Equity | 40.0% |
| Private Equity | 10.0% |
| Traditional Fixed Income | 22.5% |
| Opportunistic Debt | 7.5% |
| Real Assets | 10.0% |
| Real Estate | 10.0% |
| Cash | 0.0% |

**Note 3 (a) - Deposit and Investment Risk Policies**

**Concentration of Credit Risk**

Concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer. Within the traditional asset classes (equities and fixed income), the consultant will aggregate exposures across asset classes to create measures of concentration including industries, countries, and security issuer for Investment staff review.

**Investment Custodial Credit Risk**

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

**Cash Deposit Custodial Credit Risk**

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

**Market Risk**

Market risk is the risk that the fair value of an investment will be adversely impacted due to a change in value of the underlying market. The three primary market risks prevalent in the System's investment portfolio are equity prices, interest rates, and foreign currencies. Equity risk is the risk that stock prices fall and/or the volatility in the equity market increases. Interest rate risk is the risk that fixed income securities (or any investment primarily valued on a yield basis) will drop in value due to an increase in interest rates. Currency risk is the risk that changes to foreign exchange rates will adversely impact the fair value of non-U.S. Dollar denominated assets. The System protects the portfolio against market risks by adopting a diversified asset allocation that limits the amount of exposure to each underlying market risk. Market risks are also controlled by monitoring the types, amounts, and degree of risk that each investment manager takes for their specific mandate.

**Investment Credit Risk**

Investment credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Unless authorized under a separate Investment Management Agreement or operating agreement, it is the policy of the System to limit fixed income managers to purchasing securities that possess a minimum credit rating of “Baa” by Moody’s and “BBB” by Standard & Poor’s. Issues subsequently downgraded below these ratings must be brought to the attention of the Chief Investment Officer.

Where counterparty risk is present, the System’s investment managers seek to control credit risk through counterparty credit evaluations and approvals, counterparty credit limits and exposure monitoring procedures.

**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, 2024, MPERS had a carrying amount of deposits of $783,073, and a bank balance of $948,142. The FDIC covered $250,000 of the bank balance with the remaining balance being fully collateralized.

**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 5% of plan net position.

**Note 3 (d) – Rate of Return**

For the year ended June 30, 2024, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 13.36%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

**Note 3 (e) – Investments**

The following table shows MPERS’ investments by type.

***Summary of Investments by Type as of June 30, 2024***

| | Carrying Amount | Fair Value |
|---|---|---|
| Equities | $ 185,588,950 | $ 195,503,067 |
| Fixed Income | 1,140,989,002 | 1,120,116,319 |
| Limited Partnerships | 1,489,070,781 | 1,728,528,771 |
| Hedge Funds | 21,525,651 | 28,233,970 |
| Short Term Securities | 585,823,418 | 585,835,535 |
| Securities Lending Collateral | 21,142,145 | 21,142,145 |
| **Total Investments** | **$ 3,444,139,947** | $ 3,679,359,807 |
| | | |
| **Reconciliation to Statement of Fiduciary Net Position:** | | |
| Less: Securities Lending Collateral | | (21,142,145) |
| **Investments per Statement of Fiduciary Net Position** | | **$ 3,658,217,662** |

Certain investments are not listed on national exchanges, over-the-counter markets, nor do they have quoted market prices. Their valuation is based on the most current net asset values, independent appraisals, and/or good faith estimates of the investment's fair value provided by the general partner or portfolio manager, cash flow adjusted through fiscal year end. The estimated fair value of these investments may differ significantly from values that would have been used had a ready market existed. The following investments were priced using those methods and comprised 48.02% of the total fair value of the System's investments as of June 30, 2024:

| | Fair Value |
|---|---|
| Hedge Funds | $ 28,233,970 |
| Limited Partnerships | 1,728,528,771 |
| | **$1,756,762,741** |

**Note 3 (f) – Fair Value Measurements**

MPERS categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements).

Level 1: Unadjusted quoted prices for identical instruments in active markets.

Level 2: Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3: Values derived from valuation techniques in which significant inputs are unobservable. Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

***Investments Measured at Fair Value, June 30, 2024***

| **Investments by Fair Value Level** | **Fair Value** | **Level 1** | **Level 2** | **Level 3** |
|---|---|---|---|---|
| Short Term Securities | $ 589,350,280 | $ 589,350,280 | $ 0 | $ 0 |
| Debt Securities | | | | |
| Collateralized Debt Obligations | 447,349,634 | 0 | 235,571,652 | 211,777,982 |
| Commercial Mortgage-Backed Securities | 229,556,136 | 0 | 166,972,213 | 62,583,923 |
| Corporate Bonds | 12,615,430 | 0 | 11,809,429 | 806,001 |
| Government Mortgage-Backed Securities | 197,398,561 | 0 | 194,172,409 | 3,226,152 |
| Municipal Bonds | 110,729,074 | 0 | 109,666,465 | 1,062,609 |
| U.S. Government Agencies | 45,721,498 | 0 | 45,721,498 | 0 |
| U.S. Treasury Securities | 50,585,069 | 0 | 50,585,069 | 0 |
| Funds – Corporate Bonds | 10,981,484 | 10,981,484 | 0 | 0 |
| Total Debt Securities | 1,104,936,886 | 10,981,484 | 814,498,735 | 279,456,667 |
| Equity Securities | | | | |
| Communication Services | 333,049 | 333,049 | 0 | 0 |
| Consumer Discretionary | 2,655,603 | 2,655,603 | 0 | 0 |
| Consumer Staples | 2,435,521 | 2,435,521 | 0 | 0 |
| Energy | 1,814,647 | 1,814,647 | 0 | 0 |
| Equity - Other | 8,294,400 | 8,294,400 | 0 | 0 |
| Financials | 81,890,672 | 77,945,141 | 3,945,531 | 0 |
| Health Care | 14,244,769 | 14,244,769 | 0 | 0 |
| Industrials | 11,856,621 | 11,856,621 | 0 | 0 |
| Information Technology | 4,215,866 | 4,215,866 | 0 | 0 |
| Materials | 1,463,926 | 1,463,926 | 0 | 0 |
| Real Estate | 2,267,659 | 2,267,659 | 0 | 0 |
| Utilities | 594,927 | 594,927 | 0 | 0 |
| Total Equity Securities | 132,067,660 | 128,122,129 | 3,945,531 | 0 |
| Private Markets | | | | |
| Opportunistic Debt | 326,042,681 | 23,130,506 | 21,950,255 | 280,961,920 |
| Private Equity | 439,286,053 | (1,800,000) | 0 | 441,086,053 |
| Real Assets | 436,933,900 | 19,711,572 | 0 | 417,222,328 |
| Real Estate | 308,172,197 | 9,686,689 | 0 | 298,485,508 |
| Total Private Markets | 1,510,434,831 | 50,728,767 | 21,950,255 | 1,437,755,809 |
| Investment Derivative Instruments | | | | |
| Swaps | 940,035 | 0 | 940,035 | 0 |
| Total Investment Derivative Instruments | 940,035 | 0 | 940,035 | 0 |
| **Total Investment by Fair Value Level** | $3,337,729,692 | **$ 779,182,660** | **$ 841,334,556** | **$1,717,212,476** |
| Investments Measured at Net Asset Value | | | | |
| In-Liquidation | 434,642 | | | |
| Multi-Strategy | 247,989,675 | | | |
| Opportunistic Debt | 27,787,622 | | | |
| Private Real Estate Fund | 55,700,613 | | | |
| Structured Credit - Relative Value | 11,706 | | | |
| Total Investments Measured at Net Asset Value | 331,924,258 | | | |
| **Total Investments** | **$3,669,653,950** | | | |

| **Reconciliation to Statement of Fiduciary Net Position** | |
|---|---|
| Total Investments Measured at Fair Value and Derivatives | $3,669,653,950 |
| Investment Sales Receivable | (7,877,386) |
| Investment Purchases Payable | 7,714,394 |
| Accrued Interest and Income | (11,273,296) |
| **Total Investments per Statement of Fiduciary Net** | **$3,658,217,662** |

Investments listed as level 1 include securities and futures contracts where the price comes from an exchange.

Investments listed as level 2 include securities where an independent pricing evaluator had direct observable information including: trading volume, multiple sources of market data and benchmark spreads. The equity index swap is included because the valuation inputs include an observable interest rate and the underlying index.

Investments listed as level 3 include securities where an independent pricing evaluator did not have direct observable information and had limited market information for comparable securities. Significant inputs used in the valuation are not available aside from the evaluator providing the price. Direct investments in private equity, real estate, credit, and real assets are included because the valuation techniques utilize discounted cash flows or other non-observable market information by manager.

***Private Markets Measured at Fair Value as of June 30, 2024***

| **Private Markets** | **Fair Value** | **Unfunded Commitments** |
|---|---|---|
| Private Equity | $ 439,286,053 | $ 202,177,414 |
| Real Estate | 308,172,197 | 183,760,074 |
| Real Assets | 436,933,900 | 83,519,007 |
| Opportunistic Debt | 326,042,681 | 242,101,391 |
| **Total Private Markets** | **$ 1,510,434,831** | **$ 711,557,886** |

**Private Markets**

Private equity, real estate, real assets, and opportunistic debt are the four asset classes that fall into the category of private market funds. These funds invest in the equity or debt of private companies.

**Private Equity:** The private equity portfolio includes 33 direct fund investments and three fund of fund investments. These funds mostly invest in private companies adding value through operational or industry expertise and vast networks. The majority of the private equity allocation is in buyout funds with a smaller portion in venture capital and growth equity funds. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of six to ten years.

**Real Estate:** The real estate portfolio consists of 22 real estate funds. The noncore real estate book includes 20 real estate funds that invest in value-add or opportunistic strategies. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of six to ten years. The remaining four investments are in core real estate funds. Three of these funds are open-ended. Three are eligible for redemption on a quarterly basis and one on a daily basis.

**Real Assets:** The real asset portfolio contains 29 funds that invest in private energy, aviation, mining, and shipping companies. The timber portfolio, which includes both ownership in timber funds and direct timber investments, is also within the real assets portfolio. The timber portfolio has 12 direct timber investments. These funds and investments are not eligible for redemption. Distributions are received as underlying investments and investments within the funds are liquidated, which on average can occur over the span of six to ten years.

**Opportunistic Debt:** The opportunistic debt portfolio, comprised of 32 funds, provide financing to various companies. While this portfolio has a U.S. bias, some funds invest internationally with exposures in Europe and Asia. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of three to five years.

***Investments Measured at Net Asset Value as of June 30, 2024***

| Investments at Net Asset Value | Net Asset Value | Unfunded Commitments | Redemption Frequency (If Currently Eligible) | Redemption Notice Period |
|---|---|---|---|---|
| In-Liquidation | $ 434,642 | $ 0 | In Liquidation | |
| Multi-Strategy | 247,989,675 | 0 | Monthly | 60-90 days |
| Opportunistic Debt | 27,787,622 | 0 | Quarterly | 45 days |
| Structured Credit – Relative Value | 11,706 | 0 | Quarterly | 60 days |
| Private Real Estate Funds | 55,700,613 | 0 | Daily | 90 days |
| **Total Investments at Net Asset Value** | **$331,924,258** | **$ 0** | | |

**Hedge Funds**

**Hedge Funds in Liquidation:** MPERS currently has a small investment in three hedge funds that are in liquidation. These funds have closed and MPERS is awaiting the sale of final assets.

**Multi-Strategy:** Consisting of one fund, this group aims to pursue varying strategies in order to diversify risks and reduce volatility. Due to contractual lock-up restrictions, the value of these investments is eligible for redemption in the next six months.

**Opportunistic Debt:** Consisting of one fund, this group uses public, but illiquid, fixed income structuring to achieve higher returns by separating and securitizing the unique credit risk tranches.

**Structured Credit – Relative Value:** MPERS currently has one fund that is in liquidation in this strategy.

**Private Real Estate Funds**

MPERS invests in three core private real estate funds that are commingled in nature. Three are eligible for redemption on a quarterly basis and one on a daily basis.

**Note 3 (g) – Investment Interest Rate Risk**

The following table summarizes the maturities of government obligations, corporate bonds, convertible corporate bonds, mortgages, and asset-backed securities which are exposed to interest rate risk.

***Summary of Weighted Average Maturities as of June 30, 2024***

| | | Investment Maturities (in years) | | | |
|---|---|---|---|---|---|
| **Investment Type** | **Fair Value** | **Less than 1** | **1 – 5** | **6 – 10** | **More than 10** |
| Asset-Backed Securities | $ 444,656,327 | $ 908,023 | $ 55,894,470 | $ 173,600,722 | $ 214,253,112 |
| Commercial Mortgage-Backed Securities | 211,316,457 | 0 | 0 | 17,906,415 | 193,410,042 |
| Corporate Bonds | 12,462,883 | 2,676,264 | 7,080,874 | 199,651 | 2,506,094 |
| Government Agencies | 45,197,213 | 0 | 0 | 5,205,117 | 39,992,096 |
| Government Bonds | 23,031,832 | 0 | 1,317,262 | 0 | 21,714,570 |
| Government Mortgage-Backed Securities | 196,405,448 | 2,863 | 114,143 | 321,159 | 195,967,283 |
| Government-Issued Commercial Mortgage-Backed Securities | 6,191,625 | 0 | 0 | 0 | 6,191,625 |
| Index Linked Government Bonds | 27,188,576 | 3,131,386 | 12,941,622 | 0 | 11,115,568 |
| Municipal/Provincial Bonds | 131,343,751 | 4,347,621 | 18,689,763 | 16,357,669 | 91,948,698 |
| Non-Government-Backed C.M.O.'s | 11,340,724 | 0 | 401,651 | 2,002,636 | 8,936,437 |
| **Total** | **$ 1,109,134,836** | **$ 11,066,157** | **$ 96,439,785** | **$ 215,593,369** | **$ 786,035,525** |

**NOTE 3 (h) – Investment Credit Ratings**

The table below summarizes the credit ratings of the government obligations, corporate bonds, mortgages, and asset-backed securities.

***Summary of Investment Credit Ratings as of June 30, 2024***

| Investment Type | AAA | AA | A | BBB | CCC |
|---|---|---|---|---|---|
| Asset-Backed Securities | $ 155,846,952 | $ 74,826,974 | $ 0 | $ 0 | $ 544,457 |
| Commercial Mortgage-Backed Securities | 24,230,327 | 926,424 | 5,521,455 | 0 | 0 |
| Corporate Bonds | 777,584 | 2,506,094 | 5,956,133 | 3,223,072 | 0 |
| Government Agencies | 0 | 42,451,034 | 0 | 0 | 0 |
| Government Bonds | 0 | 0 | 0 | 0 | 0 |
| Government Mortgage-Backed Securities | 0 | 0 | 0 | 0 | 0 |
| Government-Issued Commercial Mortgage-Backed Securities | 0 | 0 | 0 | 0 | 0 |
| Index Linked Government Bonds | 0 | 0 | 0 | 0 | 0 |
| Municipal/Provincial Bonds | 22,351,511 | 72,936,267 | 0 | 0 | 0 |
| Non-Government-Backed C.M.O.'s | 2,818,942 | 0 | 0 | 86,376 | 1,594,278 |
| **Total** | **$ 206,025,316** | **$ 193,646,793** | **$ 11,477,588** | **$ 3,309,448** | **$ 2,138,735** |

*Continued on next page.*

**NOTE 3 (h) – Investment Credit Ratings**
The table below summarizes the credit ratings of the government obligations, corporate bonds, mortgages, and asset-backed securities.

***Summary of Investment Credit Ratings as of June 30, 2024 (continued)***

| Investment Type | Not Rated | US Government Guaranteed | Total |
|---|---|---|---|
| Asset-Backed Securities | $ 213,437,944 | $ 0 | $ 444,656,327 |
| Commercial Mortgage-Backed Securities | 180,636,911 | 1,340 | 211,316,457 |
| Corporate Bonds | 0 | 0 | 12,462,883 |
| Government Agencies | 0 | 2,746,179 | 45,197,213 |
| Government Bonds | 4,074,531 | 18,957,301 | 23,031,832 |
| Government Mortgage-Backed Securities | 39,640 | 196,365,808 | 196,405,448 |
| Government-Issued Commercial Mortgage-Backed Securities | 0 | 6,191,625 | 6,191,625 |
| Index Linked Government Bonds | 8,836,296 | 18,352,280 | 27,188,576 |
| Municipal/Provincial Bonds | 36,055,973 | 0 | 131,343,751 |
| Non-Government-Backed C.M.O.'s | 6,841,128 | 0 | 11,340,724 |
| **Total** | **$ 449,922,423** | **$ 242,614,533** | **$ 1,109,134,836** |

**Note 3 (i) – Investment Foreign Currency Risk**

Currency risk is the risk that changes to foreign exchange rates will adversely impact the fair value of non-U.S. Dollar denominated assets. The following table summarizes MPERS' exposure to foreign currencies for all assets that are held in custody at the System's custodial bank. MPERS has exposure to foreign currencies in other areas of the portfolio, such as commingled international funds, hedge funds and private partnerships, which are held in the custody of other banks acting as administrators for the funds.

***Exposure to Foreign Currency Risk as of June 30, 2024***

| Foreign Currency | Equities | Fixed Income | Real Estate / Partnerships | Cash and Cash Equivalents | Total |
|---|---|---|---|---|---|
| Australian Dollar | $ 489,084 | $ 0 | $ 0 | $ 5,663 | $ 494,747 |
| British Pound Sterling | 292,800 | 1,704,977 | 1 | 30,078 | 2,027,856 |
| Canadian Dollar | 294,066 | 0 | 4,396,000 | 4,330 | 4,694,396 |
| Danish Krone | 0 | 777,584 | 0 | 5,987 | 783,571 |
| Euro | 678,205 | 1,045,533 | 35,250,157 | 115,063 | 37,088,958 |
| Hong Kong Dollar | 350,439 | 0 | 0 | 0 | 350,439 |
| Hungarian Forint | 0 | 0 | 0 | 1,362 | 1,362 |
| New Israeli Shekel | 0 | 0 | 0 | 262 | 262 |
| Japanese Yen | 814,930 | 0 | 0 | 0 | 814,930 |
| Singapore Dollar | 327,994 | 0 | 0 | 0 | 327,994 |
| Swedish Krona | 74,260 | 0 | 0 | 0 | 74,260 |
| Swiss Franc | 91,999 | 0 | 0 | 0 | 91,999 |
| **Total Exposure Risk** | **$ 3,413,777** | **$ 3,528,094** | **$39,646,158** | **$ 162,745** | **$46,750,774** |

**Note 3 (j) – 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 fair value of the securities, plus any accrued interest. Non-U.S. securities are loaned in exchange for collateral valued at 105% of the fair value of the securities, plus any accrued interest. On June 30, 2024, 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 165 days as of June 30, 2024. Cash open collateral is invested in a short-term investment pool, which had an interest sensitivity of 22 days as of June 30, 2024.  There were no known violations of legal or contractual provisions, or borrower or lending agent default losses. There were 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 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 following table summarizes the collateral held (including both cash collateral recognized in the Statement of Fiduciary Net Position and non-cash collateral).

***Collateral Held as of June 30, 2024***

| Investment Type | Cash Collateral | Non-Cash Collateral |
|---|---|---|
| Equities | $14,845,762 | $29,747,836 |
| Corporate Fixed | 2,820,455 | 0 |
| Government & Government-Sponsored Securities | 2,882,538 | 4,934,137 |
| Agencies | 1,176,405 | 0 |
| **Total** | **$21,725,160** | **$34,681,973** |

**Note 3 (k) – Derivatives**

A derivative financial instrument is an investment whose value depends on the values of one or more underlying assets, financial indexes, or commodity prices. These investments include futures contracts, options contracts, and forward foreign currency exchange. Derivative financial instruments involve credit risk and market risk, as described in Note 3(a), in varying levels.

Through MPERS' external managers, MPERS holds investments in futures contracts, swaps contracts, options contracts, and forward foreign currency exchange contracts. MPERS enters into futures and swaps contracts to gain exposure to certain markets and enters into forward foreign exchange contracts primarily to hedge foreign currency exposure.

The notional value related to these derivative instruments is generally not recorded in the financial statements; however, the fair value for the various contracts in MPERS' portfolio as of June 30, 2024, is recorded in investments on the Statement of Fiduciary Net Position. The total changes in fair value for the year are recorded in investment income on the Statement of Changes in Fiduciary Net Position.

***Investment Derivatives as of June 30, 2024***

| Type | Classification | Notional Value | Unrealized Gain |
|---|---|---|---|
| Futures Contracts | Investments, at fair value | $ 699,350,735 | $ 73,429,035 |
| Swaps Contracts | Investments, at fair value | 481,326,664 | 13,843,079 |
| **Total** | | **$1,180,677,399** | **$ 87,272,114** |

Through the use of derivatives, MPERS is exposed to risk that the counterparties involved in the contracts are unable to meet the terms of their obligation. MPERS' investment managers seek to control this risk through counterparty credit evaluations and approvals, counterparty credit limits, and exposure monitoring procedures. MPERS anticipates the counterparties will be able to satisfy their obligations under contract.

At June 30, 2024, the counterparties' credit ratings for swaps are subject to credit risk as shown in the table below. Derivative instruments traded on the exchange are not subject to counterparty risk and therefore are not included in the table below.

***Counterparty Credit Ratings as of June 30, 2024***

| Quality Rating | Swaps |
|---|---|
| A+ | $ 481,326,664 |
| **Total Subject to Credit Risk** | **$ 481,326,664** |

## NOTE 4 – RECEIVABLES

***Receivables as of June 30, 2024***

| Type | Total |
|---|---|
| Contributions – MoDOT | $ 6,974,957 |
| Contributions – MSHP Non-Uniformed | 1,508,059 |
| Contributions – MSHP Uniformed | 2,491,734 |
| Contributions – MPERS | 328,591 |
| Investment Interest & Income | 11,273,296 |
| Investment Sales | 7,877,386 |
| Miscellaneous | 27,392 |
| **Total** | **$30,481,415** |

## NOTE 5 – CONTRIBUTIONS

MoDOT, MSHP, and MPERS make contributions to the System, as do employees covered under the Year 2000 Plan-2011 Tier. MPERS' permanent funding policy provides for actuarially determined employer contributions using the entry-age actuarial cost method. As of June 30, 2024, the funding policy has a 15-year closed amortization period for all unfunded liabilities. 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. The employee contribution rate for members of the Year 2000 Plan-2011 Tier is set by statute.

Required employer contributions totaling $254,358,101 for fiscal year 2024, represent funding of normal costs and amortization of the unfunded accrued liability. Actual contributions made were 100% of required contributions. Contribution rates for the fiscal year ended June 30, 2024, as determined by the actuarial valuation for the year ended June 30, 2022, are shown in the following table.

The Board established actual rates to be the same as the actuarially determined rates.

***Contribution Rates***

| MoDOT, MPERS & Civilian Patrol | Uniformed Patrol | 2011 Tier Employee |
|---|---|---|
| 58.00% | 58.00% | 4.00% |

In September 2014, the Board adopted a contribution stabilization reserve fund from experience gains in an effort to keep contribution rates relatively level over time. In February 2015, the Board established a maximum of $250 million in the contribution stabilization reserve fund. . In February 2024, the Board established separate maximums of $250 million and $75 million for the MoDOT, MPERS & Civilian Patrol (Non-Uniformed) and Uniformed contribution stabilization reserve funds, respectively. The balance of the Non-Uniformed reserve fund was $250,000,000 and the balance of the Uniformed reserve fund was zero as of June 30, 2024.

## NOTE 6 – DEFERRED RETIREMENT OPTION PROGRAM

MPERS currently provides a BackDROP option. This is an election made at the time of actual retirement. In effect, it provides members an option to elect to receive a portion of their benefits as cash. Since the election is not made until the member actually retires, the option is not treated as a DROP provision in accordance with generally accepted accounting principles.

# NOTE 7 – NET PENSION LIABILITY OF EMPLOYERS

The components of the net pension liability of the employers as of June 30, 2024, were as follows:

| | |
|---|---|
| Total pension liability | $4,963,323,460 |
| Plan fiduciary net position | (3,677,657,507) |
| Employers' net pension liability | $1,285,665,953 |
| | |
| Plan fiduciary net position as a percentage of the total pension liability | 74.10% |
| Covered payroll | $ 438,993,763 |
| Employers' net pension liability as a percentage of covered payroll | 292.87% |

**Actuarial Assumptions**

The total pension liability amounts were determined by actuarial valuations as of June 30, 2024, using the following actuarial assumptions, applied to all prior periods included in the measurement:

| | |
|---|---|
| Inflation (price inflation) | 2.25% |
| Salary Increases (includes 3.00% wage inflation) | 3.00% to 10.50% |
| Investment Rate of Return | 6.50% |

Post-retirement healthy mortality rates are used to measure the probabilities of members dying after retirement. The rates currently in use are from the Pub-2010 General, Healthy Retiree, Amount-Weighted, Below-Median Income tables for males and females for Non-Uniformed members and Pub-2010 Public Safety Healthy Retiree, Amount-Weighted, tables for males and females for Uniformed members. Rates are decreased by 5% for non-uniform males and increased by 4% for uniform males. The assumed rates are adjusted for mortality improvement back to the observation period base year of 2010 and then projected generationally from 2010 to 2019 using scale MP-2021 and 90% of scale MP-2021 for years following 2019.

Pre-retirement mortality rates currently in use for active lives are the Pub-2010 General, Employee, Amount-Weighted, Below-Median Income tables for males and females for Non-Uniformed members and the Pub-2010 Public Safety Employee, Amount-Weighted, tables for males and females for Uniformed members. The assumed rates are adjusted for mortality improvement back to the observation period base year of 2010 and then projected generationally from 2010 to 2019 using scale MP-2021 and 90% of scale MP-2021 for years following 2019.

Post-Retirement Disabled mortality rates currently in use for disabled lives are the Pub-2010 General Disabled Retiree, Amount-Weighted tables for males and females for Non-Uniformed members and the Pub-2010 Public Safety Disabled Retiree, Amount-Weighted tables for males and females for Uniformed members. The assumed rates are adjusted for mortality improvement back to the observation period base year of 2010 and then projected generationally from 2010 to 2019 using scale MP-2021 and 90% of scale MP-2021 for years following 2019.

The long-term (30 year) expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return were adopted by the plan's trustees after considering input from the plan's investment consultants and actuary. These estimates for each major asset class included in MPERS' target asset allocation as of June 30, 2024, (see Note 3) are summarized in the following table:

| Asset Class | Long-Term Expected Rate of Return |
|---|---|
| Global Equity | 2.4% |
| Private Equity | 6.1% |
| Fixed Income | 2.4% |
| Opportunistic Debt | 5.7% |
| Real Assets | 4.0% |
| Real Estate | 3.4% |

**Discount Rate**

A single discount rate of 6.50% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 6.50%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan's June 30, 2024 net pension liability, calculated using a single discount rate of 6.50%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

| ***Current Single Discount*** | | | |
|---|---|---|---|
| | **1% Decrease 5.50%** | **Rate Assumption 6.50%** | **1% Increase 7.50%** |
| Net Pension Liability | $1,895,833,955 | $1,285,665,953 | $781,744,625 |

## NOTE 8 – EMPLOYER PROPORTIONATE SHARE

MPERS, as the administrative agent for the pension system, is also an employer of the pension system. The administrative expenses of the pension system are included in the deductions to the pension system's fiduciary net position. While the employer contributions of the other participating employers are funded from outside revenue sources, the employer contributions of MPERS are funded from sources already recognized as revenues, such as earnings on plan investments or contributions paid by the other participating employers. Attempting to allocate a portion of the net pension liability to MPERS as an employer would result in an allocation of the net pension liability to the other participating employers. Accordingly, MPERS excludes its contributions from the employer proportionate share calculation for the reporting of a net pension liability, by assigning itself a proportionate share of 0%. This exclusion, in essence, shifts the portion of the net pension liability that would accrue to MPERS to the other participating employers.

## NOTE 9 – PERSONNEL SERVICES AND RETIREMENT PLAN

MPERS employed 21 full-time employees as of June 30, 2024. Thirteen former MPERS employees have retired.

Full-time employees are members of the System (see Note 8). For these employees, MPERS accrued 58.00% of payroll during fiscal year 2024, amounting to $1,728,032. The amounts for fiscal year 2024 and the four preceding years are shown below. These amounts are recorded as both a contribution and administrative expense. Information regarding the retirement plans can be found in Notes 2 and 5.

***Net Obligations***

| **Year Ended June 30** | **Annual Contribution Accrual** | |
|---|---|---|
| | **Percent** | **Dollars** |
| 2020 | 58.00% | $ 987,743 |
| 2021 | 58.00 | 1,219,468 |
| 2022 | 58.00 | 1,374,954 |
| 2023 | 58.00 | 1,506,656 |
| 2024 | 58.00 | 1,728,032 |

# NOTE 10 – OTHER POST-EMPLOYMENT BENEFITS (OPEB)

In addition to the retirement benefits described previously, MPERS provides a portion of health care insurance through the MoDOT and MSHP Medical and Life Insurance Plan (Insurance Plan) in accordance with Missouri State statutes. The Insurance Plan is considered an agent multiple employer defined benefit plan and is administered by MoDOT. The Insurance Plan is financed on a pay-as-you-go basis and is an internal service fund of MoDOT. As of June 30, 2024, there were 9 inactive (retired) members and 21 active employees participating in the Insurance Plan.

Medical insurance benefits are established by the Insurance Plan's Board of Trustees and are approved by the Missouri Highways and Transportation Commission. Benefits include general inpatient and outpatient medical services; mental, nervous and substance abuse care; and prescriptions. Eligible members are employees who retired from the System with a minimum of 5 years of service and who participate in the Insurance Plan. MoDOT issues a publicly available financial report that includes financial statements and required supplementary information for the Insurance Plan. Requests for this report should be addressed to MoDOT, Financial Services Division, P.O. Box 270, Jefferson City, MO 65102.

Employer and member contributions are established by the Insurance Plan's Board of Trustees and are approved by the Missouri Highways and Transportation Commission. Premiums vary by coverage categories, which include retirees, certain disabled employees, spouses, certain dependents, and survivors of deceased employees and retirees.

**Changes in Total OPEB Liability**

MPERS' proportionate share (0.15%) of the Insurance Plan's net OPEB liability is $837,636 which was measured as of July 1, 2023, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of that date.

***Summary of Changes in Net OPEB Liability for the Year Ended June 30, 2024***

| | **Total** |
|---|---|
| Beginning Balance | $ 1,929,126 |
| Changes for the year: | |
| Service Cost | 53,828 |
| Interest Cost | 69,719 |
| Changes of benefit terms | 0 |
| Differences between expected and actual experience | (37,641) |
| Changes in assumptions | (1,150,169) |
| Benefit Payments | (27,227) |
| Net Changes | (1,091,490) |
| Ending Balance | **$ 837,636** |

**Deferred Outflows and Inflows**

For the year ended June 30, 2024, MPERS recognized net OPEB expense of $94,237. MPERS reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

***Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB***

| | **Deferred Outflows** | **Deferred Inflows** |
|---|---|---|
| Differences between expected and actual experience | $ 129,657 | $ 40,590 |
| Changes of assumptions or other inputs | 135,933 | 1,317,161 |
| Contributions subsequent to measurement date | 23,137 | 0 |
| **Total** | **$ 288,727** | **$1,357,751** |

Deferred outflows resulting from contributions subsequent to the measurement date will be recognized as a change to the net pension liability in each subsequent year. Other deferred amounts related to OPEB will be recognized in expenses as follows:

***Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB***

| **Fiscal Year** | |
|---|---|
| 2025 | $ (199,936) |
| 2026 | (187,092) |
| 2027 | (246,748) |
| 2028 | (282,335) |
| 2029 | (176,050) |
| | **$(1,092,161)** |

**Actuarial Assumptions**

The following actuarial assumptions and other inputs, applied to all periods included in the measurement:

| | |
|---|---|
| Cost method | Entry Age Normal based upon salary |
| Salary increases | 3.00% |
| Discount rate | 3.65% |
| Investment rate of return | N/A; the plan is unfunded |
| Health care cost trend rates | 7.82%, decreasing to 4.44% in 2033 |
| Retirees' share of benefit-related costs | 43.03% - 90% |
| Admin Expense Trend (Inflation) Rate | 3.00% |

- The salary increases were based on projected salaries, which include COLAs, provided by MoDOT.
- The discount rate was based on Bond Buyer General Obligation 20-Bond Municipal Bond Index.
- Mortality rates were based on Pub-2010 Public Retirement Plans Safety Employees Mortality Table weighted by Headcount projected by MP-2021.
- The actuarial assumptions used in the June 30, 2024 valuation were based on the results of an actuarial experience study for the period July 1, 2022-June 30, 2023.
- It is assumed the current employer and member contributions will continue as approved by the Commission.
- Changes of assumptions and other inputs reflect a change in the discount rate from 3.54% in 2023 to 3.65% in 2024.

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability as of June 30, 2024:

***Interest Rate Sensitivity***

| | **1% Decrease** | **Current Discount Rate** | **1% Increase** |
|---|---|---|---|
| Net OPEB Liability | $961,780 | $837,636 | $736,199 |

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability as of June 30, 2024:

***Healthcare Cost Trend Sensitivity***

| | **1% Decrease** | **Current Discount Rate** | **1% Increase** |
|---|---|---|---|
| Net OPEB Liability | $722,053 | $837,636 | $981,073 |

## NOTE 11 – CAPITAL ASSETS

***Capital Asset Account Balances***

| | Land | Building | Furniture and Equipment | Software | Total Capital Assets |
|---|---|---|---|---|---|
| **Cost** | | | | | |
| Balances as of June 30, 2023 | $ 188,319 | $ 745,828 | $ 157,693 | $ 3,288,161 | $ 4,380,001 |
| Additions | 0 | 0 | 23,883 | 0 | 23,883 |
| Disposals | 0 | 0 | 0 | 0 | 0 |
| **Balances as of June 30, 2024** | **188,319** | **745,828** | **181,576** | **3,288,161** | **4,403,884** |
| **Accumulated Depreciation** | | | | | |
| Balances as of June 30, 2023 | $ 0 | $ 408,385 | $ 147,017 | $ 3,288,161 | $ 3,843,563 |
| Additions | 0 | 30,383 | 3,580 | 0 | 33,963 |
| Disposals | 0 | 0 | 0 | 0 | 0 |
| **Balances as of June 30, 2024** | **0** | **438,768** | **150,597** | **3,288,161** | **3,877,526** |
| **Net Capital Assets as of June 30, 2024** | **$ 188,319** | **$ 307,060** | **$ 30,979** | **$ 0** | **$ 526,358** |

## NOTE 12 – LINE OF CREDIT AND LEVERAGE

In December 2022, MPERS entered into a revolving credit agreement with Bank of America, N.A. consisting of a line of credit not to exceed $200 million. Under the terms of the credit agreement, each revolving loan shall bear interest on the outstanding principal amount thereof at a rate per annum equal to the Base Rate (fluctuating rate of interest per annum equal to the highest of (a) the Federal Funds Rate plus 0.50%, (b) the rate of interest in effect for such day as publicly announced from time to time by Bank of America as its “prime rate,” and (c) the Daily SOFR Rate plus 1.00%) plus the applicable spread (a rate per annum equal to (a) in the case of Base Rate Loans, 0.00% and (b) in the case of Daily SOFR Rate Loans, 1.20%). MPERS leverage ratio at June 30, 2024, was approximately 3.4%. The bank line of credit at June 30, 2024 was zero. The credit agreement contains covenants customary for financings of this type, including, but not limited to, financial covenants, which requires that MPERS Fair Value-Total Fund Investment Assets shall not be less than $1.5 billion at any time and MPERS Funded Ratio shall not be less than 50% at any time. MPERS was in compliance with these financial covenants at June 30, 2024.

## NOTE 13 – COMMITMENTS

MPERS has committed $1,985,751,302 of which $1,274,193,416 has been invested, leaving total unfunded commitments to private equity, real estate, real assets, and opportunistic debt of $711,557,886 as of June 30, 2024. The total unfunded investment commitments are not recorded in the accompanying Statement of Fiduciary Net Position.

## NOTE 14 – 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. MPERS has also purchased a directors and officers liability policy with $1 million aggregate coverage. This coverage is inclusive of legal defense costs and carries a $100,000 deductible. The State’s Legal Expense Fund covers all state employees and officers, and MPERS has purchased surety bonds for the executive director and staff. Settlements have not exceeded coverages for each of the past three fiscal years.

MPERS has a disaster recovery plan that provides for continued computer operations at a remote location should the retirement office be unavailable for normal computing operations.

## Schedule of Changes in the Employers' Net Pension Liability
## Year Ended June 30

| | 2024 | 2023 | 2022 | 2021 | 2020 |
|---|---|---|---|---|---|
| **Total Pension Liability** | | | | | |
| Service Cost (1) | $ 57,997,597 | $ 52,759,573 | $ 55,097,433 | $ 43,726,886 | $ 44,048,083 |
| Interest on the Total Pension Liability | 298,242,729 | 279,014,877 | 275,067,181 | 278,522,994 | 274,791,358 |
| Benefit Changes | 0 | 0 | 0 | 0 | 0 |
| Difference Between Expected and Actual Experience | 197,772,783 | 211,609,428 | 16,085,222 | (26,471,689) | 3,494,582 |
| Assumption Change | 0 | 44,379,018 | 0 | 226,319,675 | 0 |
| Benefit Payments (2) | (299,084,308) | (288,084,295) | (278,612,715) | (266,108,191) | (262,710,811) |
| Refunds | (996,748) | (972,241) | (1,024,986) | (611,132) | (796,107) |
| Disability Premiums (2) | 0 | 0 | 0 | (1,600,628) | (1,640,971) |
| Transfers to Other Retirement Systems (2) | 0 | 0 | 0 | (1,802,900) | (2,457,945) |
| **Net Change in Total Pension Liability** | **253,932,053** | **298,706,360** | **66,612,135** | **251,975,015** | **54,728,189** |
| **Total Pension Liability – Beginning** | **4,709,391,407** | **4,410,685,047** | **4,344,072,912** | **4,092,097,897** | **4,037,369,708** |
| **Total Pension Liability – Ending (a)** | **$ 4,963,323,460** | **$ 4,709,391,407** | **$ 4,410,685,047** | **$ 4,344,072,912** | **$ 4,092,097,897** |
| **Plan Fiduciary Net Position** | | | | | |
| Contributions – Employer | $ 254,358,101 | $ 232,813,995 | $ 212,711,117 | $ 208,212,848 | $ 210,871,852 |
| Contributions – Employee (3) | 15,882,070 | 11,448,174 | 12,655,780 | 7,095,963 | 6,547,351 |
| Pension Plan Net Investment Income | 432,121,499 | 264,758,383 | 122,767,680 | 699,644,536 | (10,667,857) |
| Benefit Payments (2) | (299,084,308) | (288,084,295) | (278,612,715) | (266,108,191) | (262,710,811) |
| Refunds | (996,748) | (972,241) | (1,024,986) | (611,132) | (796,107) |
| Disability Premiums (2) | 0 | 0 | 0 | (1,600,628) | (1,640,971) |
| Pension Plan Administrative Expense | (6,250,951) | (5,529,258) | (5,229,018) | (4,585,473) | (4,291,028) |
| Net Transfers (1) (2) | 0 | 0 | 0 | 277,417 | 1,025,629 |
| **Net Change in Plan Fiduciary Net Position** | **396,029,663** | **214,434,758** | **63,267,858** | **642,325,340** | **(61,661,942)** |
| **Plan Fiduciary Net Position – Beginning** | **3,281,627,844** | **3,067,193,086** | **3,003,925,228** | **2,361,599,888** | **2,423,261,830** |
| **Plan Fiduciary Net Position – Ending (b)** | **$ 3,677,657,507** | **$ 3,281,627,844** | **$ 3,067,193,086** | **$ 3,003,925,228** | **$ 2,361,599,888** |
| **Adjustment – GASB 75 Implementation** | | | | | |
| **Plan Fiduciary Net Position – Ending (as restated)** | | | | | |
| **Employers' Net Pension Liability (a) – (b)** | **$ 1,285,665,953** | **$ 1,427,763,563** | **$ 1,343,491,961** | **$ 1,340,147,684** | **$ 1,730,498,009** |
| Plan Fiduciary Net Position as a % of Total Pension Liability | 74.10% | 69.68% | 69.54% | 69.15% | 57.71% |
| Covered Payroll | $ 438,993,763 | $ 400,799,485 | $ 367,493,332 | $ 359,409,940 | $ 363,980,262 |
| Employers' Net Pension Liability as a % of Covered Payroll | 292.87% | 356.23% | 365.58% | 372.87% | 475.44% |

*Continued on next page.*

(1) Starting fiscal year 2022, Service Cost includes disability expense, service purchases, and transfers from other systems.
(2) Starting fiscal year 2022, Benefit Payments includes disability premiums and transfers to other systems.
(3) Starting fiscal year 2022, Contributions – Employee includes service purchases and transfers from other systems.

## Schedule of Changes in the Employers' Net Pension Liability
## Year Ended June 30 (continued)

| | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|
| **Total Pension Liability** | | | | | |
| Service Cost | $ 43,971,030 | $ 46,621,377 | $ 45,713,403 | $ 45,441,305 | $ 45,358,095 |
| Interest on the Total Pension Liability | 271,174,089 | 286,457,436 | 283,568,441 | 280,432,068 | 275,284,910 |
| Benefit Changes | 0 | (7,684) | 0 | 0 | 0 |
| Difference Between | | | | | |
| Expected and Actual Experience | 203,459 | (37,173,164) | (37,286,966) | (39,810,009) | (13,324,219) |
| Assumption Change | 0 | 142,556,109 | 0 | 0 | 0 |
| Benefit Payments | (255,310,406) | (254,131,209) | (246,617,775) | (236,488,629) | (236,905,323) |
| Refunds | (780,538) | (503,007) | (321,328) | (198,106) | (107,395) |
| Disability Premiums | (1,615,860) | (1,601,605) | (1,620,418) | (1,567,825) | (1,554,676) |
| Transfers to Other Retirement Systems | (2,111,007) | (2,823,042) | (2,724,631) | (1,921,451) | (3,147,482) |
| **Net Change in Total Pension Liability** | **55,530,767** | **179,395,211** | **40,710,726** | **45,887,353** | **65,603,910** |
| **Total Pension Liability – Beginning** | **3,981,838,941** | **3,802,443,730** | **3,761,733,004** | **3,715,845,651** | **3,650,241,741** |
| **Total Pension Liability – Ending (a)** | **$ 4,037,369,708** | **$ 3,981,838,941** | **$ 3,802,443,730** | **$ 3,761,733,004** | **$ 3,715,845,651** |
| **Plan Fiduciary Net Position** | | | | | |
| Contributions – Employer | $ 210,166,927 | $ 204,955,180 | $ 206,562,924 | $ 199,609,396 | $ 200,638,571 |
| Contributions – Employee | 5,996,344 | 5,001,418 | 4,891,932 | 3,482,513 | 3,294,162 |
| Pension Plan Net Investment Income | 154,326,818 | 197,619,838 | 220,301,741 | 21,432,095 | 92,645,571 |
| Benefit Payments | (255,310,406) | (254,131,209) | (246,617,775) | (236,488,629) | (236,905,323) |
| Refunds | (780,538) | (503,007) | (321,328) | (198,106) | (107,395) |
| Disability Premiums | (1,615,860) | (1,601,605) | (1,620,418) | (1,567,825) | (1,554,676) |
| Pension Plan Administrative Expense | (4,372,966) | (4,693,492) | (4,515,458) | (4,370,860) | (4,066,944) |
| Net Transfers | 321,363 | (955,597) | (980,524) | 808,228 | (2,033,045) |
| **Net Change in Plan Fiduciary Net Position** | **108,731,682** | **145,691,526** | **177,701,094** | **(17,293,188)** | **51,910,921** |
| **Plan Fiduciary Net Position – Beginning** | **2,314,530,148** | **2,168,838,622** | **1,992,073,946** | **2,009,367,134** | **1,957,456,213** |
| **Plan Fiduciary Net Position – Ending (b)** | **$ 2,423,261,830** | **$ 2,314,530,148** | **$ 2,169,775,040** | **$ 1,992,073,946** | **$ 2,009,367,134** |
| **Adjustment – GASB 75 Implementation** | | | **(936,418)** | | |
| **Plan Fiduciary Net Position – Ending (as restated)** | | | **$ 2,168,838,622** | | |
| **Employers' Net Pension Liability (a) – (b)** | **$ 1,614,107,878** | **$ 1,667,308,793** | **$ 1,633,605,108** | **$ 1,769,659,058** | **$ 1,706,478,517** |
| Plan Fiduciary Net Position as a % of Total Pension Liability | 60.02% | 58.13% | 57.06% | 52.96% | 54.08% |
| Covered Payroll | $ 362,747,630 | $ 353,751,292 | $ 356,515,416 | $ 344,635,441 | $ 342,264,593 |
| Employers' Net Pension Liability as a % of Covered Payroll | 444.97% | 471.32% | 457.95% | 513.49% | 498.58% |

## Schedule of Employers' Contributions
## Last 10 Fiscal Years

| | Actuarially Determined Contributions | Actual Contributions | Contribution Deficiency (Excess) | Covered Payroll* | Contributions as a Percentage of Covered Payroll |
|---|---|---|---|---|---|
| 2015 | $200,638,571 | $200,638,571 | $0 | $342,211,446 | 58.63% |
| 2016 | 199,609,396 | 199,609,396 | 0 | 344,154,131 | 58.00 |
| 2017 | 206,562,924 | 206,562,924 | 0 | 356,142,972 | 58.00 |
| 2018 | 204,955,180 | 204,955,180 | 0 | 353,371,000 | 58.00 |
| 2019 | 210,166,927 | 210,166,927 | 0 | 362,356,771 | 58.00 |
| 2020 | 210,871,852 | 210,871,852 | 0 | 363,572,159 | 58.00 |
| 2021 | 208,212,848 | 208,212,848 | 0 | 358,987,669 | 58.00 |
| 2022 | 212,711,117 | 212,711,117 | 0 | 366,743,305 | 58.00 |
| 2023 | 232,813,995 | 232,813,995 | 0 | 400,285,401 | 58.16 |
| 2024 | 254,358,101 | 254,358,101 | 0 | 438,548,450 | 58.00 |

**Values are estimated from contribution rate and actual contribution amount.*

## Schedule of Investment Returns
## Last 10 Fiscal Years

| Fiscal Year Ended June 30 | Annual Money-Weighted Rate of Return |
|---|---|
| 2015 | 6.62% |
| 2016 | 1.02% |
| 2017 | 11.22% |
| 2018 | 9.20% |
| 2019 | 6.84% |
| 2020 | (0.44)% |
| 2021 | 30.79% |
| 2022 | 4.00% |
| 2023 | 8.87% |
| 2024 | 13.36% |

## Notes to Required Supplementary 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 | June 30, 2024 |
| Actuarial Cost Method | Entry Age |
| Amortized Method | Closed, Level Percent of Payroll |
| Remaining Amortization Period | 15 years |
| Asset Valuation Method | 3-Year Smoothed Fair Value: 20% Corridor |
| Inflation | 2.25% (price inflation) |
| Actuarial Assumptions: | |
| Investment Rate of Return | 6.50% |
| Projected Salary Increase | 3.00% to 10.50% (includes 3.00% wage inflation) |
| Cost-of-Living Adjustments | 1.80% Compound |

## Other Post-Employment Benefits (OPEB) Plan
## Schedule of Changes in Net OPEB Liability and Related Ratios for MoDOT and MSHP Medical and Life Insurance Plan

| | 2024 | 2023 | 2022 | 2021 | 2020 |
|---|---|---|---|---|---|
| **Total OPEB Liability** | | | | | |
| Service Cost | $ 53,828 | $ 81,825 | $ 74,581 | $ 51,302 | $ 64,136 |
| Interest Cost | 69,719 | 52,551 | 45,896 | 55,700 | 61,346 |
| Changes of Benefit Terms | 0 | 0 | 0 | 0 | 0 |
| Differences Between Expected and Actual Experience | (37,641) | (8,837) | 263,007 | 452 | (17,475) |
| Changes in Assumptions | (1,150,169) | (530,806) | (368) | 393,621 | (58,897) |
| Benefit Payments | (27,227) | (33,227) | (35,099) | (33,865) | (35,159) |
| Net Change in Total OPEB Liability | (1,091,490) | (438,494) | 348,017 | 467,210 | 13,951 |
| **Total OPEB Liability (Beginning)** | **1,929,126** | **2,367,620** | **2,019,603** | **1,552,393** | **1,538,442** |
| **Total OPEB Liability (Ending)** | **$ 837,636** | **$ 1,929,126** | **$ 2,367,620** | **$ 2,019,603** | **$ 1,552,393** |
| **Plan Fiduciary Net Position** | | | | | |
| Contributions | $ 27,227 | $ 33,227 | $ 35,099 | $ 33,865 | $ 35,159 |
| Benefit Payments | (27,227) | (33,227) | (35,099) | (33,865) | (35,159) |
| **Net Change in Plan Fiduciary Net Position** | **0** | **0** | **0** | **0** | **0** |
| **Plan Fiduciary Net Position (Beginning)** | **0** | **0** | **0** | **0** | **0** |
| **Plan Fiduciary Net Position (Ending)** | **$ 0** | **$ 0** | **$ 0** | **$ 0** | **$ 0** |
| Net OPEB Liability (Ending) | $ 837,636 | $ 1,929,126 | $ 2,367,620 | $ 2,019,603 | $ 1,552,393 |
| Net Position as a Percentage of OPEB Liability | N/A | N/A | N/A | N/A | N/A |
| Covered-Employee Payroll | $ 2,236,049 | $ 2,016,099 | $ 1,889,323 | $ 1,791,020 | $ 1,760,722 |
| Net OPEB Liability as a Percentage of Payroll | 37.46% | 95.69% | 125.32% | 112.76% | 88.17% |

*Continued on next page.*

*Notes:*

*The Insurance Plan is financed on a pay-as-you-go basis and is an internal service fund of MoDOT.*

*These schedules are intended to present information for 10 years but may be built prospectively. Additional years will be displayed as they become available.*

## Other Post-Employment Benefits (OPEB) Plan
## Schedule of Changes in Net OPEB Liability and Related Ratios for MoDOT and MSHP Medical and Life Insurance Plan (Continued)

| | 2019 | 2018 |
|---|---|---|
| **Total OPEB Liability** | | |
| Service Cost | $ 66,676 | $ 81,000 |
| Interest Cost | 54,714 | 49,929 |
| Changes of Benefit Terms | 0 | 0 |
| Differences Between Expected and Actual Experience | (12,565) | 0 |
| Changes in Assumptions | (81,559) | (238,129) |
| Benefit Payments | (34,004) | (37,055) |
| Net Change in Total OPEB Liability | (6,738) | (144,255) |
| **Total OPEB Liability (Beginning)** | **1,545,180** | **1,689,435** |
| **Total OPEB Liability (Ending)** | **$ 1,538,442** | **$ 1,545,180** |
| **Plan Fiduciary Net Position** | | |
| Contributions | $ 34,004 | $ 37,055 |
| Benefit Payments | (34,004) | (37,055) |
| **Net Change in Plan Fiduciary Net Position** | **0** | **0** |
| **Plan Fiduciary Net Position (Beginning)** | **0** | **0** |
| **Plan Fiduciary Net Position (Ending)** | **$ 0** | **$ 0** |
| Net OPEB Liability (Ending) | $ 1,538,442 | $ 1,545,180 |
| Net Position as a Percentage of OPEB Liability | N/A | N/A |
| Covered-Employee Payroll | $ 1,639,523 | $ 790,000 |
| Net OPEB Liability as a Percentage of Payroll | 93.83% | 195.59% |

# Other Post-Employment Benefits (OPEB) Plan
# Schedule of MPERS' Proportionate Share of Net OPEB Liability
# for MoDOT and MSHP Medical and Life Insurance Plan

| Year Ended June 30 | Proportion of Net OPEB Liability | Proportionate Share of Net OPEB Liability | Covered Employee Payroll | Net OPEB Liability as % of Covered Employee Payroll | Net Position as % of Total OPEB Liability |
|---|---|---|---|---|---|
| 2018 | 0.14% | $1,545,180 | $ 790,000 | 195.59% | N/A |
| 2019 | 0.14% | 1,538,442 | 1,639,523 | 93.83% | N/A |
| 2020 | 0.15% | 1,552,393 | 1,760,722 | 88.17% | N/A |
| 2021 | 0.15% | 2,019,603 | 1,791,020 | 112.76% | N/A |
| 2022 | 0.17% | 2,367,620 | 1,889,323 | 125.32% | N/A |
| 2023 | 0.17% | 1,929,126 | 2,016,099 | 95.69% | N/A |
| 2024 | 0.15% | 837,636 | 2,236,049 | 37.46% | N/A |

*Notes:*

*The Insurance Plan is financed on a pay-as-you-go basis and is an internal service fund of MoDOT.*

*These schedules are intended to present information for 10 years but may be built prospectively. Additional years will be displayed as they become available.*

## Schedule of Administrative Expenses
## For the Year Ended June 30, 2024

| | |
|---|---|
| **Personnel Services** | |
| Salary Expense | $3,115,521 |
| Employee Benefit Expense | 2,056,854 |
| **Total Personnel Services** | **5,172,375** |
| | |
| **Professional Services** | |
| Actuarial Services | 95,883 |
| Audit Services | 62,700 |
| Legislative Consultant | 31,200 |
| Investment Special Consulting | 25,000 |
| Insurance Consultant | 7,650 |
| Other Consultant Fees | 4,708 |
| Fiduciary Insurance | 24,071 |
| IT Hosting and Support | 336,242 |
| Other | 33,730 |
| **Total Professional Services** | **621,184** |
| | |
| **Miscellaneous** | |
| Depreciation | 33,963 |
| Meetings / Travel / Education | 106,042 |
| Equipment / Supplies | 107,525 |
| Printing / Postage | 29,760 |
| Bank Service Charge | 9,342 |
| Building Expenses | 55,083 |
| Other | 115,676 |
| **Total Miscellaneous** | **457,391** |
| | |
| **Total Administrative Expenses** | **$6,250,950** |

## Schedule of Investment Expenses
## For the Year Ended June 30, 2024

| | |
|---|---|
| **Investment Income Expenses** | |
| Management and Performance Fees by Asset Class | |
| Equities | $ 2,443,193 |
| Fixed Income Core | 31,214 |
| Opportunistic Debt | 12,221,451 |
| Real Estate | 6,726,795 |
| Private Equity | 7,614,701 |
| Real Assets | 10,228,867 |
| Hedge Funds | 1,669,357 |
| **Total Management and Performance Fees** | **$40,935,578** |
| Investment Custodial Fees | 89,446 |
| Performance Management | 220,075 |
| General Consultant (Monitoring) Fee | 355,000 |
| Professional Fees | 546,036 |
| Investment Interest Expense | 2,142,248 |
| Other Fees / Expenses (Refunds) | 983,708 |
| **Total Investment Income Expenses** | **$45,272,091** |
| **Securities Lending Expenses** | |
| Borrower Rebates (Refunds) | $ 1,071,119 |
| Bank Fees | 66,804 |
| **Total Securities Lending Expenses** | **$ 1,137,923** |

## Schedule of Consultant and Professional Expenses
## For the Year Ended June 30, 2024

| Professional / Consultant | Nature of Service | |
|---|---|---|
| Gabriel, Roeder, Smith & Co. | Actuarial | $ 95,883 |
| LexisNexis Risk Data Management | Death Audit Services | 1,950 |
| MO Dept. of Health & Senior Services | Death Audit Services | 303 |
| Pension Benefit Information | Death Audit Services | 10,767 |
| Cobalt Community Research | Customer service and benefit delivery | 1,210 |
| Assured Partners | Director's & Officer's Insurance | 24,071 |
| Williams-Keepers, LLC | Financial Audit Services | 62,700 |
| CBIZ Human Capital Services | Compensation Consulting | 19,500 |
| Midwest Computech | Information Technology | 76,331 |
| Huber & Associates | Information Technology | 3,300 |
| Levi, Ray & Shoup, Inc. | Information Technology | 250,087 |
| Sikich, LLP | Information Technology | 6,524 |
| Thompson Coburn, LLP | Legal Consulting | 4,708 |
| Michael G. Winter Consultants, LLC | Legislative Consulting | 31,200 |
| Evercore Group LLC | Market Research | 25,000 |
| Charlesworth Benefits | Risk Management Consulting | 7,650 |
| **Total Consultant and Professional Expenses** | | **$ 621,184** |

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

## COMMUNICATION OF AUDIT RELATED MATTERS

## JUNE 30, 2024

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

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November 4, 2024

To the Audit Committee of the Board of Trustees of the
Missouri Department of Transportation and
Highway Patrol Employees' Retirement System

We have audited the financial statements of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System) for the year ended June 30, 2024, and have issued our report thereon dated November 4, 2024. Professional standards require that we advise you of the following matters relating to our audit.

**Our Responsibility in Relation to the Financial Statement Audit**

As communicated in our engagement letter dated June 11, 2024, our responsibility, as described by professional standards, is to form and express an opinion about whether the financial statements prepared by management with your oversight are presented fairly, in all material respects, in conformity with accounting principles generally accepted in the United States of America. Our audit of the financial statements does not relieve you or management of your responsibilities.

Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable, rather than absolute, assurance that the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, as part of our audit, we considered the internal control of the System solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

We have provided our findings regarding significant control deficiencies over financial reporting, and other matters noted during our audit in a separate letter to you dated November 4, 2024.

**Planned Scope and Timing of the Audit**

We conducted our audit consistent with the planned scope and timing we previously communicated to you.

**Compliance with All Ethics Requirements Regarding Independence**

The engagement team, others in our firm, as appropriate, our firm, and our network firms have complied with all relevant ethical requirements regarding independence.

## Significant Risks Identified

According to auditing standards generally accepted in the United States of America (GAAS), significant risks of material misstatement include management override of controls, and GAAS presumes that revenue recognition (including contribution revenue), is a significant risk. Accordingly, we considered these, and benefit obligations and fair value of investments, as significant risks.

## Qualitative Aspects of the Entity's Significant Accounting Practices

*Significant Accounting Policies*

Management has the responsibility to select and use appropriate accounting policies. A summary of the significant accounting policies adopted by the System is included in Note 1 to the financial statements. Except as noted below, there have been no initial selection of accounting policies and no changes in significant accounting policies or their application during 2024. No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

During the year ended June 30, 2024, the System implemented Governmental Accounting Standards Board (GASB) Statement 100, *Accounting Changes and Error Corrections,* which improved the clarity of the accounting and financial reporting requirements for accounting changes and error corrections, which resulted in greater consistency in application in practice, and provided more understandable, reliable, relevant, consistent, and comparable information to financial statement users for making decisions or assessing accountability. This standard did not have an impact on the System's financial statements.

The following summarizes a new accounting standard that may impact the System in the future:

The GASB has issued Statement 101, *Compensated Absences,* which requires a unified recognition and measurement model that will result in a liability for compensated absences that more appropriately reflects when an entity incurs an obligation. In addition, the model will be applied consistently to any type of compensated absence and will eliminate potential comparability issues between entities that offer different types of leave. The model will also result in a more robust estimate of the amount of compensated absences that an entity will pay or settle, which will enhance the relevance and reliability of information about the liability for compensated absences. This Statement will be effective for the System for the year ending June 30, 2025.

*Significant Accounting Estimates*

Accounting estimates and related disclosures are an integral part of the financial statements prepared by management and are based on management's current judgments. Those judgments are normally based on knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ markedly from management's current judgments.

The most sensitive accounting estimates affecting the financial statements are the fair value of investments (particularly alternative investments such as hedge funds and timberland), the useful lives of capital assets, and employers' total pension liability and related disclosures.

Management's estimate of the fair value of investments is based on quoted market prices; input from outside investment managers, consultants, and general partners; and current economic conditions. The estimated fair values of alternative investments represent particularly sensitive accounting estimates. Estimated useful lives of capital assets are generally based on past experience with similar assets. Employers' total pension liability and related disclosures are based on actuarial methods and assumptions determined in consultation with the System's actuary. We evaluated the key factors and assumptions used to develop those estimates in determining that they are reasonable in relation to the financial statements taken as a whole.

*Financial Statement Disclosures*

Certain financial statement disclosures involve significant judgment and are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting the System's financial statements relate to investments and the net pension liability of employers.

**Significant Difficulties Encountered During the Audit**

We encountered no significant difficulties in dealing with management relating to the performance of the audit.

**Uncorrected and Corrected Misstatements**

For purposes of this communication, professional standards also require us to accumulate all known and likely misstatements identified during the audit, other than those that we believe are trivial, and communicate them to the appropriate level of management. Further, professional standards require us to also communicate the effect of uncorrected misstatements related to prior periods on the relevant classes of transactions, account balances or disclosures, and the financial statements as a whole. There were no uncorrected misstatements.

In addition, professional standards require us to communicate to you all material, corrected misstatements that were brought to the attention of management as a result of our audit procedures. We did not identify any misstatements as a result of our audit procedures.

**Disagreements with Management**

For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, which could be significant to the System's financial statements or the auditor's report. No such disagreements arose during the course of the audit.

**Representations Requested from Management**

We have requested certain written representations from management, which are included in a separate letter dated November 4, 2024.

**Management's Consultations with Other Accountants**

In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing and accounting matters.

**Other Significant Matters, Findings, or Issues**

In the normal course of our professional association with the System, we generally discuss a variety of matters, including the application of accounting principles and auditing standards, significant events or transactions that occurred during the year, business conditions affecting the plan, and business plans and strategies that may affect the risks of material misstatement. None of the matters discussed resulted in a condition to our retention as the System's auditors.

**Other Information Included in Annual Reports**

Pursuant to professional standards, our responsibility as auditors for other information, whether financial or nonfinancial, included in the System's annual report, does not extend beyond the information identified in the audit report, and we are not required to perform any procedures to corroborate such other information. However, in accordance with such standards, we have read the information and considered whether such information, or the manner of its presentation, was materially inconsistent with its presentation in the financial statements.

Our responsibility also includes communicating to you any information which we believe is a material misstatement of fact. Nothing came to our attention that caused us to believe that such information, or its manner of presentation, is materially inconsistent with the information, or manner of its presentation, appearing in the financial statements.

This report is intended solely for the use of the Board of Trustees and management of the System and is not intended to be, and should not be, used by anyone other than these specified parties.

Sincerely,

Williams-Keepers LLC

WILLIAMS-KEEPERS LLC

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

## MANAGEMENT LETTER

## JUNE 30, 2024

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

2005 West Broadway, Suite 100, Columbia, MO 65203
OFFICE (573) 442-6171 FAX (573) 777-7800
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www.williamskeepers.com

November 4, 2024

To the Board of Trustees and Management of the
Missouri Department of Transportation and
Highway Patrol Employees' Retirement System

In planning and performing our audit of the financial statements of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System) for the year ended June 30, 2024, in accordance with auditing standards generally accepted in the United States of America, we considered the System's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstance for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Systems' financial statements will not be prevented, or detected and corrected on a timely basis. A reasonable possibility exists when the likelihood of an event occurring is either reasonably possible or probable as defined as follows:

- *Reasonably possible*. The chance of the future event or events occurring is more than remote but less than likely.
- *Probable*. The future event or events are likely to occur.

Our consideration of internal control was for the limited purpose described in the first paragraph and was not designed to identify all deficiencies in internal control that might be material weaknesses. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Our audit was also not designed to identify deficiencies in internal control that might be significant deficiencies. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance. We did become aware of a certain deficiency in internal control that we consider to be a significant deficiency. The following summarizes the deficiency.

## PRIOR YEAR RECOMMENDATION IMPLEMENTED

***Investment Accounting Procedures and Management Review (significant deficiency)***

During a prior audit, we noted the System did not have documented accounting procedures related to internally managed timber investments. Due to unforeseen changes in the timber investment portfolio during a prior year, the System transitioned to internally manage three timber investments. The System performed operational procedures over these investments, however, the accounting treatment of these investments was inconsistent. We recommended the system document routine accounting procedures and to perform the procedures on a timely basis. In the prior year audit, we noted the system had implemented routine accounting procedures and received external financial statement audits for all internally managed timber investments held as of December 31, 2022. However, one of the internally managed investments was partially held at cost. During the current year audit, MPERS produced financial statements in accordance with U.S. GAAP for each of these investments and had them externally audited for the year ended December 31, 2023. The internally managed investment partially held at cost received a Broker Opinion of Value as of March 20, 2024.

Management's Response: We concur. External audits were performed on all internally managed timber investments for the calendar year ended December 31, 2023. The one investment being partially held at cost has received a Broker Opinion Value as of March 20, 2024 and this has since been reflected in the books. All audits resulted in an unmodified opinion. External audits will continue to be performed annually.

MPERS has fully implemented the recommendation.

Sincerely,

Williams- Keepers LLC

WILLIAMS- KEEPERS LLC

# AGREED UPON PROCEDURES REPORT

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

## June 30, 2024

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

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**INDEPENDENT ACCOUNTANT'S REPORT**
**ON APPLYING AGREED UPON PROCEDURES**

November 4, 2024

The Board of Trustees
Missouri Department of Transportation and
Highway Patrol Employees' Retirement System

We have performed the procedures enumerated in Attachment A. The Missouri Department of Transportation and Highway Patrol Employees' Retirement System's (the System) management and trustees is responsible for the procedures enumerated in Attachment A for the year ended June 30, 2024.

The System has agreed to and acknowledged that the procedures performed are appropriate to meet the intended purpose of assisting the System's performance measures in evaluating vital signs related to benefit administration, financial and audit metrics, budgeting, communication, and investments. This report may not be suitable for any other purpose. The procedures performed may not address all the items of interest to a user of this report and may not meet the needs of all users of this report, and as such, users are responsible for determining whether the procedures performed are appropriate for their purposes.

The procedures and the associated findings are listed in Attachment A.

We were engaged by the System to perform this agreed-upon procedures engagement and conducted our engagement in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA). We were not engaged to and did not conduct an examination or review, the objective of which would be the expression of an opinion or a conclusion, respectively, on the identified procedures for the year ended June 30, 2024. Accordingly, we do not express such an opinion or conclusion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements related to our agreed-upon procedures engagement.

This report is intended solely for the information and use of the Board of Trustees and management of the System and is not intended to be and should not be used by anyone other than these specified parties.

Williams-Keepers LLC

WILLIAMS-KEEPERS LLC
Columbia, Missouri

**ATTACHMENT A**
**Agreed-upon Procedures for**
**Missouri Department of Transportation and Highway Patrol Employees' Retirement System**
**as of and for the year ended June 30, 2024**

## Benefit Administration

1. Benefit payments are initiated on time and accurately:
   a. Compare the retirement date to the first payment date per the benefit payment listing for the entire year.
      ***GREEN:*** *No instances were noted of benefit payments initiated in the current year being paid out prior to the benefit effective date.*

   b. Trace five retirements to supporting documentation.
      ***GREEN:*** *All five retirements agreed to supporting documentation without exception, and benefits appeared to be accurately calculated based on the retirees' information.*

2. Benefit administration is in compliance with applicable laws, regulations, and policies:
   a. Obtain the General Counsel's attestation of compliance.
      ***GREEN:*** *MPERS' internal General Counsel, Greta Bassett-Seymour, confirmed to the extent of her knowledge that the administration of benefits is in compliance with all laws, regulations, and policies applicable to the System.*

3. The cybersecurity policy is in place and current:
   a. Review the date of the last review and updates to the policy.
      ***GREEN:*** *The cybersecurity policy was updated effective July 24, 2023, with the assistance of outside consultants.*

## Financial and Audit

4. The Annual Report and Popular Annual Financial Report are completed timely:
   a. Confirm the date the Annual Report was posted to the website.
      ***GREEN:*** *The Annual Report was dated November 3, 2023, and was posted to the webiste on November 15, 2023.*

   b. Confirm the date the Popular Annual Financial Report was posted to the website.
      ***GREEN:*** *The Popular Annual Financial Report is not a dated document. It was posted to the website on December 5, 2023.*

5. Tax filings were completed by respective due dates:
   a. Review monthly state withholdings and confirmations of online filing. Verify that no penalties were incurred.
      ***GREEN:*** *WK reviewed the Transaction History report, verifying that monthly MO-941s were filed timely and no penalties were incurred for the year ended June 30, 2024.*

   b. Review quarterly Federal 941 and SUTA filings for the date of completion.
      ***GREEN:*** *WK reviewed quarterly Federal 941s filed manually on 10/30/23, 1/30/24, 4/26/24, and 7/22/24. WK reviewed quarterly SUTA filings submitted on 10/25/23, 1/16/24, 4/25/24, and 7/24/24. Quarterly filings were completed timely, and no penalties were incurred.*

c. Review annual 1099R, 1099Misc, Federal 945, and state filings for the date of completion.
*GREEN: WK reviewed the 2023 Federal Form 945 and confirmed a filing date of January 30, 2024. WK also reviewed submission support for the filing of Form 1099, which occurred on January 28, 2024.*

6. Obtain a clean audit opinion:
   a. Confirm that the financial statements have received an unmodified opinion.
   *GREEN: An unmodified opinion was issued for the Missouri Department of Transportation and Highway Patrol Employees' Retirement System as of and for the year ended June 30, 2023, in a report dated November 3, 2023.*

7. A 100% contribution rate was received from employers:
   a. Verify contributions agree to the employer payroll reports and required contribution rates.
   *GREEN: WK obtained confirmation of employer contributions with the Office of Administration and independently obtained confirmation of employer payroll with MODOT and Missouri State Highway Patrol. 100% of employer contributions were received at a 58% employer contribution rate for MODOT and MSHP.*

8. Funded status:
   a. Verify funded status per the actuarial valuation.
   *GREEN: The funding status increased from 69.6% as of June 30, 2023, to 70.6% as of June 30, 2024, per review of the June 30, 2024 actuarial valuation.*

   b. Verify that the retiree liability is fully funded per actuarial funding valuation.
   *GREEN: The funding status for the retiree liability was 100% as of June 30, 2024.*

**Budget**

9. Actual expenses vs. budgeted expenses:
   a. Review the budget to actual report and budget to financial statement reconciliation to compare budgeted amounts to actual expenditures.
   *GREEN: Actual expenditures for administrative expenses were approximately 5.3% under budget, and after consideration of the investment budget and actual expenses, the total expense for the year ended June 30, 2024, was approximately 89% of the total budget.*

10. Cost per member analysis:
    a. Review cost per member calculation and comparison information.
    *GREEN: WK reviewed the calculated average cost per member, noting MPERS reported spending $196 per member as compared to the average $313 spent per member in the reviewed peer group.*

**Communication**

11. New trustee onboarding:
    a. Review the results of trustee survey.
    *GREEN: Daniel Hageman was appointed as trustee during the year ended June 30, 2024. This trustee gave their onboarding experience a rating of 3, indicating that the experience met their expectations.*

12. Organizational satisfaction:
    a. Review the results of the staff survey.
       ***GREEN:*** *WK reviewed results from the staff survey noting an overall weighted average score of 2.63, exceeding the threshold of 1.5.*

    b. Review signed responses for the Code of Conduct and Conflict of Interest Acknowledgment Forms from Board of Trustees.
       ***GREEN:*** *WK reviewed all signed response, noting that all the members of the board of trustees returned their forms in 2024 (for FY25).*

13. Seminar satisfaction:
    a. Review overall satisfaction results from member surveys as it pertains to pre-retirement and mid-career satisfaction.
       ***GREEN:*** *WK reviewed results from the member surveys noting that 99% of responses indicated above-average satisfaction.*

14. Member satisfaction:
    a. Review overall satisfaction results from member interactions with staff.
       ***GREEN:*** *WK reviewed results from the member survey noting that 99% of responses indicated above-average satisfaction with the services provided.*

**<u>Investments</u>**

15. Total return vs. actuarial assumption:
    a. Compare the return from the custodial bank book of record to the actuarial rate.
       ***GREEN:*** *MPERS total return of 13.3% for the year ended June 30, 2024 was above the assumed investment rate of return of 6.5%.*

16. Total return vs. peers' return:
    a. Compare return from the custodial bank book of record to peer information from the investment consultant.
       ***GREEN:*** *MPERS total return of 13.3% for the year ended June 30, 2024 was above the InvMetrics Public DB Net Median 1-year investment return of 11.4%.*

17. Total return vs. policy benchmark:
    a. Compare return from the custodial bank book of record to policy information from the investment consultant.
       ***GREEN:*** *MPERS total return of 13.3% for the year ended June 30, 2024 exceeds the 1-year policy index return of 12.3%.*

18. Current allocation vs. policy allocation within bands:
    a. Compare current allocations from the custodial bank to the investment policy allocations.
       ***GREEN:*** *MPERS investment allocations are in compliance with the sub-asset class ranges outlined in the investment policy as of June 30, 2024.*

19. Volatility:
    a. Volatility at five years as measured by the standard deviation.
       ***GREEN:*** *MPERS' volatility at five years, as measured by the standard deviation, was 7.5% for the five years ended June 30, 2024 as compared to the peer universe median of 12.1%.*

b. Volatility at ten years measured by the standard deviation.

*__GREEN:__ MPERS' volatility at ten years, as measured by the standard deviation, was 5.9% for the ten years ended June 30, 2024 as compared to the peer universe median of 10.0%.*

20. Sharpe ratio:

a. Sharpe ratio at five years compared to the peer median.

*__GREEN:__ MPERS' five-year Sharpe ratio was 1.1% for the five years ended June 30, 2024 as compared to the peer universe median of 0.5%.*

b. Sharpe ratio at ten years compared to the peer median.

*__GREEN:__ MPERS' ten-year Sharpe ratio was 1.2% for the ten years ended June 30, 2024 as compared to the peer universe median of 0.6%.*

21. Risk and liquidity analysis:

*__GREEN:__ WK reviewed the Investment Performance report as of June 30, 2024 as evidence of the risk and liquidity analysis performed by NEPC, LLC.*

# AGREED UPON PROCEDURES REPORT

# MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

# AUGUST 31, 2024

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

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# INDEPENDENT ACCOUNTANT'S REPORT ON APPLYING AGREED UPON PROCEDURES

The Board of Trustees
Missouri Department of Transportation and
Highway Patrol Employees' Retirement System

We have performed the procedures enumerated in Attachment A. The Missouri Department of Transportation and Highway Patrol Employees' Retirement System's (the System) management and trustees are responsible for the procedures enumerated in Attachment A for the twelve months ended August 31, 2024.

The System has agreed to and acknowledged that the procedures performed are appropriate to meet the intended purpose of assisting the System in evaluating the annual alive and well check and monthly death audit procedures. This report may not be suitable for any other purpose. The procedures performed may not address all the items of interest to a user of this report and may not meet the needs of all users of this report, and as such, users are responsible for determining whether the procedures performed are appropriate for their purposes.

The procedures and the associated findings are listed in Attachment A.

We were engaged by the System to perform this agreed-upon procedures engagement and conducted our engagement in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA). We were not engaged to and did not conduct an examination or review, the objective of which would be the expression of an opinion or a conclusion, respectively, on the identified procedures for the twelve months ended August 31, 2024. Accordingly, we do not express such an opinion or conclusion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements related to our agreed-upon procedures engagement.

This report is intended solely for the information and use of the Board of Trustees and management of the System and is not intended to be and should not be used by anyone other than these specified parties.

Williams-Keepers LLC

WILLIAMS-KEEPERS LLC
Columbia, Missouri
November 4, 2024

## ATTACHMENT A

**Agreed-upon Procedures for**
**Missouri Department of Transportation and Highway Patrol Employees' Retirement System**
**For the Twelve Months Ended August 31, 2024**

**<u>Alive and Well Check</u>**

1. Obtain a listing of members receiving benefits who are located in the United States of America (U.S.) and over age 100 and those who are located outside of the U.S. and over age 85.

   *Completed.*

2. Verify completeness of the listing in agreed-upon procedure #1 used to determine which members should receive a Status Letter.

   *Completed.*

3. Obtain Status Verification letters sent to recipients located in the U.S. and over age 100 and those who are located outside of U.S. and over age 85.

   *Eight members located in the U.S. and over age 100 were sent a Status Verification letter from the System. There were no members located outside of the U.S. and over age 85.*

4. Verify that all Status Verification letters sent to recipients were received by MPERS before the first of October.

   *All eight Status Verification letters sent to members were received by MPERS before October 1st.*

5. Verify the participant signature on the returned Status Verification letter agrees to the payee signature on file.

   *The signatures of all eight members' returned Status Verification letter agreed to the payee signature on file.*

**<u>Death Audit</u>**

1. Verify completeness of the listing submitted to PBI for the selected month of August 2024.

   *Completed.*

2. Verify results received from PBI were updated in Pension Gold for those members who deceased during the selected month of August 2024.

   *For the 21 members listed on the August 2024 report returned by PBI, all members' date of death were appropriately updated in Pension Gold.*

3. Verify completeness of the listing submitted to DHSS for the selected month of August 2024.

   *Completed.*

4. Verify results received from DHSS were properly updated in Pension Gold for those members who deceased during the selected month of August 2024.

   *For the 21 members listed on the August 2024 report returned by DHSS, all members' date of death were appropriately updated in Pension Gold, except for one. For Edward Ecklund, the date of death reported by DHSS was July 4, 2024, but the date of death updated in Pension Gold was July 28, 2024. Pension Gold has been updated to reflect the correct date of death, July 4, 2024.*