REPORT OF

MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

SCHEDULES OF PENSION INFORMATION FOR PARTICIPATING EMPLOYERS

JUNE 30, 2018

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

2005 West Broadway, Suite 100, Columbia, MO 65203
OFFICE (573) 442-6171 FAX (573) 777-7800
3220 West Edgewood, Suite E, Jefferson City, MO 65109
OFFICE (573) 635-6196 FAX (573) 644-7240
www.williamskeepers.com

INDEPENDENT AUDITORS' REPORT

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

Report on Schedules

We have audited the accompanying schedule of employer allocations of Missouri Department of Transportation and Highway Patrol Employees' Retirement System (the System) as of and for the year ended June 30, 2018, and the related notes. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer of the System as and for the year ended June 30, 2018, and the related notes (collectively the "Schedules").

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these Schedules in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the Schedules that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer based on our audit. We conducted our audit in accordance with U.S. generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain evidence about the amounts and disclosures in the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System's preparation and fair presentation of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer 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, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the Schedules referred to above present fairly, in all material respects, the employer allocations and the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for all participating entities for the System as of and for the year ended June 30, 2018, in accordance with U.S. generally accepted accounting principles.

Other Matter

We have audited, in accordance with U.S. generally accepted auditing standards, the financial statements of the System as of and for the year ended June 30, 2018, and our report thereon, dated November 9, 2018, expressed an unmodified opinion on those financial statements.

Restriction on Use

Our report is intended solely for the information and use of the System's management, the Board of Trustees, the System's employers as of and for the year ended June 30, 2018, and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Williams-Keepers LLC

February 5, 2019

MODOT AND PATROL EMPLOYEES'
RETIREMENT SYSTEM

Schedule of Employer Allocations
As of and for the year ended June 30, 2018

Employer	Contributions	Employer Allocation Percentage
Missouri Department of Transportation	$ 127,168,503	62.39%
Missouri State Highway Patrol	76,659,171	37.61%
Total for All Entities	$ 203,827,674	100.00%

See Accompanying notes to the Schedules

MODOT AND PATROL EMPLOYEES' RETIREMENT SYSTEM

Schedule of Pension Amounts by Employer
As of and for the year ended June 30, 2018

	Net Pension Liability		Pension Expense		
Entity	Beginning	Ending	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Pension Expense
Missouri Department of Transportation	$ 1,012,417,855	$ 1,040,233,956	$ 91,422,736	$ (6,134,944)	$ 85,287,792
Missouri State Highway Patrol	620,250,835	627,074,837	55,118,327	6,134,944	61,253,271
Total for All Entities	$ 1,632,668,690	$ 1,667,308,793	$ 146,541,063	$ -	$ 146,541,063

	Deferred Outflows of Resources				
Entity	Difference between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Change in Assumptions	Change in Proportion and Difference Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources
Missouri Department of Transportation	$ -	$ 40,312,089	$ 68,597,491	$ 4,917,777	$ 113,827,357
Missouri State Highway Patrol	-	24,300,973	41,352,006	3,266,165	68,919,144
Total for All Entities	$ -	$ 64,613,062	$ 109,949,497	$ 8,183,942	$ 182,746,501

	Deferred Inflows of Resources				
Entity	Difference Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Change in Assumptions	Change in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources
Missouri Department of Transportation	$ 38,779,374	$ 41,020,611	$ -	$ 3,266,165	$ 83,066,150
Missouri State Highway Patrol	23,377,020	24,728,085	-	4,917,777	53,022,882
Total for All Entities	$ 62,156,394	$ 65,748,696	$ -	$ 8,183,942	$ 136,089,032

MISSOURI DEPARTMENT OF TRANSPORTATION AND HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

Notes to the Schedules of Employer Allocations and Pension Amounts by Employer
As of and for the Year Ended June 30, 2018

Note 1 - Plan Descriptions

Missouri Department of Transportation and Highway Patrol Employees' Retirement System (MPERS or "the System") 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). The Plan provides retirement, survivor, and disability benefits for employees of Missouri Department of Transportation (MoDOT), Missouri State Highway Patrol (MSHP), and MPERS' staff. 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-Tem of the Senate, a State Representative appointed by the Speaker of the House, and the Director of the MoDOT and Superintendent of the MSHP who serve as ex-officio members. Due to the nature of MPERS' reliance on funding from MoDOT and 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.

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.

Further information related to required contributions, pension benefits, other plan terms, and investments and related return and financial information related to MPER is available as described in Note 4.

Note 2 – Summary of Significant Accounting Policies

MPERS employers are required to report pension information in their financial statements for fiscal periods beginning on or after June 15, 2014, in accordance with Governmental Accounting Standards Board Statement No. 68, *Accounting and Financial Reporting for Pensions*. The Schedules of Employer Allocations and Schedules of Pension Amounts by Employer provide employers with the required information for financial reporting under that standard.

The underlying financial information used to prepare the pension allocation schedules is based on MPERS' financial statements and its accounting and payroll reporting systems. The financial statements of MPERS were prepared using the accrual basis of accounting and in accordance with U.S. generally accepted accounting principles.

Member and employer contributions are recognized when due, pursuant to formal commitments and statutory requirements. Benefits and refunds of employee contributions are recognized when due and payable in

accordance with the statutes governing MPERS. Expenses are recognized when the liability is incurred, regardless of when payment is made. Investments are reported at fair value on a trade date basis.
Total contributions for the fiscal year 2018 were used as the basis for determining each employer's proportionate share of the collective pension amounts reported on the schedules. However, the System is excluded from all allocations. As a result, contributions totaling approximately $1,120,000 related to the System's members were excluded from the Schedules of Employer Allocations.

The net pension liability is based on the Plan's fiduciary net position as reported in its financial statements and the estimated total pension liability estimated by MPERS' actuary as of each fiscal year-end. It is allocated based on each employer's proportionate share of employer contributions.

Deferred inflows and outflows, except for the change in proportion, are allocated based on each employer's proportionate share of contributions for the fiscal year. The difference between expected and actual investment earnings on pension plan investments is amortized as a component of pension expense over 5 years on a straight-line basis while the differences between expected and actual experience and changes in assumptions are amortized as a component of pension expense over the expected average remaining service lifetime (EARSL) of all participants (4.3720 years for the year ended June 30, 2018). Deferred inflows and outflows related to the change in proportion used for allocation purposes from one fiscal year to the next are estimated by reallocating beginning balances using the ending allocation percentage and amortizing the difference over the EARSL as a component of pension expense. The remaining unamortized deferred inflows and outflows are reported in the Schedule of Pension Amounts by Employer.

Pension expense is based on the service cost earned by participants during the fiscal year, interest on the total pension liability, certain changes in plan fiduciary net position, and the current year amortization of deferred inflows and outflows. It is allocated based on each employer's proportionate share of collective plan amounts and its specific amortization of change in proportion deferred item.

The preparation of these schedules in conformity with U.S. generally accepted accounting principles requires management to make significant estimates and assumptions that affect the reported amounts during the reporting period. Actual results could differ from those estimates.

Note 3 – Actuarial Assumptions and Methods

The components of the net pension liability of the Systems' employers at June 30, 2018, are as follows:

Total pension liability	$ 3,981,838,941
MPERS fiduciary net position	2,314,530,148
Employers' net pension liability	$ 1,667,308,793
Plan net position as a percentage of the total pension liability	58.13%
Covered payroll - all	$ 353,751,292
Employers' net pension liability as a percentage of covered payroll	471.32%

The total pension liability was calculated by the Systems' independent actuary as of June 30, 2018. The entry age normal cost method was utilized along with an inflation assumption of 2.25%, a long-term expected rate of return on investments of 7.00% (net of investment expenses and including inflation factor), salary increases of 3.00% to 12.45% (including wage inflation of 3.00%) and mortality based on RP-2014 Healthy Annuitant Mortality Tables projected to 2022 using projection scale MP-2017.

The change in assumption reported in the Schedules of Pension Amounts by Employer is attributed to the decrease in the investment rate of return from 7.75% to 7% and the expansion of salary range increases from a range of 3.5% - 11% to a range of 3% to 12.45%.

The current funding policy, if actuarial assumptions are met, results in the projected Plan fiduciary net position being sufficient to pay benefits for all future years. Therefore, the current 7.00% discount rate is considered adequate, and the use of the municipal bond rate calculation is not necessary.

Actuarial valuations of the Systems involve estimates of the reported amount and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The last 5-year experience study was conducted for the period July 1, 2012 through June 30, 2017. The last independent actuarial review of the reasonableness and accuracy of actuarial assumptions, actuarial cost methods, and valuations was conducted as of June 30, 2011.

Note 4 – Additional Financial and Actuarial Information

Additional financial and actuarial information supporting the preparation of the Schedules of Employer Allocations and Schedules of Pension Amounts by Employer is included in the Systems' Comprehensive Annual Financial Report for the year ended June 30, 2018. The Comprehensive Annual Financial Report ("CAFR") can be obtained at www.mpers.org or at MoDOT and Patrol Employees' Retirement System (MPERS), P.O. Box 1930, Jefferson City, MO 65102-1930.