GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

MINNESOTA STATE RETIREMENT SYSTEM

JUDGES RETIREMENT FUND

GASB STATEMENTS NO. 67 AND NO. 68 ACCOUNTING AND FINANCIAL REPORTING FOR PENSIONS

JUNE 30, 2015

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

100 South Fifth Street
Suite 1900
Minneapolis, MN 55402-1267

612.605.6200 phone
612.605.6203 fax
www.gabrielroeder.com

November 30, 2015

Minnesota State Retirement System
Judges Retirement Fund
St. Paul, Minnesota

Dear Board of Directors:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 for the Judges Retirement Fund ("JRF"). These calculations have been made on a basis that is consistent with our understanding of these accounting standards.

GASB Statement No. 67 is the accounting standard that applies to the financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing financial reporting and disclosure information that satisfies the requirements of GASB Statements No. 67 and No. 68. The calculation of the plan's liability for this report may not be applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 67 may produce significantly different results. The information in this report is calculated on a total plan basis. MSRS is responsible for preparing the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer, as applicable. This report may be provided to parties other than the Minnesota State Retirement System (MSRS) in its entirety and only with the permission of MSRS.

This report is based upon information, furnished to us by MSRS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. This information was checked for internal consistency, but it was not otherwise audited.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Judges Retirement Fund as of the measurement date. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Brian B. Murphy and Bonita J. Wurst are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

By Brian B. Murphy
Brian B. Murphy
FSA, EA, FCA, MAAA

By Bonita J. Wurst
Bonita J. Wurst
ASA, EA, MAAA

OTHER OBSERVATIONS

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

(1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, in other words of transferring the obligations to a unrelated third party in an arm's length market value type transaction.

(2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).

(3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

TABLE OF CONTENTS

SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
AS OF JUNE 30, 2015 (DOLLARS IN THOUSANDS)

	2015
Actuarial Valuation Date	June 30, 2015
Measurement Date of the Net Pension Liability	June 30, 2015
Membership	
Number of	
- Service Retirements	240
- Survivors	83
- Disability Retirements	23
- Deferred Retirements	16
- Terminated other non-vested	0
- Active Members	312
- Total	674
Covered-Employee Payroll	$ 43,449 [1]
Net Pension Liability	
Total Pension Liability	$ 410,972
Plan Fiduciary Net Position	174,580
Net Pension Liability	$ 236,392
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	42.48%
Net Pension Liability as a Percentage of Covered-Employee Payroll	544.07%
Development of the Single Discount Rate	
Single Discount Rate	5.25%
Long-Term Expected Rate of Investment Return	7.90%
Long-Term Municipal Bond Rate [2]	3.80%
Last year ending June 30 in the 2016 to 2115 projection period for which projected benefit payments are fully funded	2034
Total Pension Expense/(Income)	$ 17,706

Deferred Outflows and Deferred Inflows of Resources by Source Arising from Current and Prior Periods to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience in the measurement of Total Pension Liability	$ 3,048	$ 3,493
Changes in assumptions	17,357	5,050
Net difference between projected and actual earnings on pension plan investments	4,767	9,628
Total	$ 25,172	$ 18,171

[1] *Assumed equal to actual employer contributions divided by employer contribution rate.*

[2] *Based on the Bond Buyer 20-Bond Index of general obligation municipal bonds as of June 25, 2015 (i.e., the weekly rate closest to but not later than the Measurement Date).*

The covered-employee payroll figure shown represents the annual compensation for active employees on which contributions to the pension plan are based and does not necessarily represent Covered-Employee Payroll as defined in GASB Statement Nos. 67 and 68. If a different payroll figure should be used in this schedule, please let us know.

DISCUSSION

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans,* establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68, *Accounting and Financial Reporting for Pensions,* establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state and local governmental employers to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to JRF subsequent to the measurement date of June 30, 2015.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the difference between expected and actual experience in the measurement of the Total Pension Liability, assumption changes, and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a Statement of Fiduciary Net Position and a Statement of Changes in Fiduciary Net Position in accordance with GASB Statement No. 67. The *Statement of Fiduciary Net Position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *Statement of Changes in Fiduciary Net Position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes to the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

Both GASB Statements No. 67 and No. 68 require the notes to the financial statements for the employers and pension plans to include certain descriptive information about the pension plans through which the pension benefits are provided. The list of disclosure items should include:

- a description of benefits provided by the plan;
- the classes of employees and number of members covered by the pension plan;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- the pension plan's fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- the net pension liability using a discount rate that is 1% higher and 1% lower than the current discount rate used to calculate the total pension liability and net pension liability for financial reporting purposes;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the discount rates; and
- certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with Statement No. 67. This information includes:

- the composition of the pension plan's board and the authority under which benefit terms may be amended;
- a description of how fair value is determined;
- information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets; and
- annual money-weighted rate of return.

MSRS' comprehensive annual financial report, which contains the basic financial statements and related note disclosures for the Judges Retirement Fund can be found online at www.msrs.state.mn.us/financial-information or obtained from MSRS at 60 Empire Drive, Suite 300, St. Paul, MN, 55103 or requested via email at info@msrs.us or telephone at 1-800-657-5757.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- sources of changes in the net pension liability;
- information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Timing of the Valuation

GASB Statements Nos. 67 and 68 require that an actuarial valuation to determine the total pension liability be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2015 and a measurement date of June 30, 2015.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a single discount rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve Board) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the long-term expected rate of return on pension plan investments is 7.90%; the municipal bond rate is 3.80% (based on the weekly rate closest to but not later than the measurement date of the 20-Year Bond Buyer Index as published by the Federal Reserve Board); and the resulting single discount rate is 5.25%.

Effective Date and Transition

GASB Statements No. 67 and No. 68 are effective for fiscal years beginning after June 15, 2013, and June 15, 2014 respectively. Earlier application is encouraged by the GASB. MSRS first implemented GASB Statement No. 67 for fiscal year 2014.

SECTION B

FINANCIAL STATEMENTS

PENSION EXPENSE UNDER GASB STATEMENT NO. 68
FISCAL YEAR ENDED JUNE 30, 2015 (DOLLARS IN THOUSANDS)

A. Expense

1.	Service Cost	$	12,251
2.	Interest on the Total Pension Liability		21,773
3.	Current-Period Benefit Changes		0
4.	Employee Contributions (made negative for addition here)		(3,629)
5.	Projected Earnings on Plan Investments (made negative for addition here)		(13,531)
6.	Pension Plan Administrative Expense		60
7.	Other Changes in Plan Fiduciary Net Position		0
8.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Current Reporting Period		(873)
9.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Current Reporting Period		4,339
10.	Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.90%) and actual earnings on Pension Plan Investments		
	Arising from Current Reporting Period		1,192
11.	**Increases/(Decreases) from Experience in the Current Reporting Period**	**$**	**21,582**
12.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Prior Reporting Periods		1,016
13.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Prior Reporting Periods		(1,683)
14.	Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.90%) and actual earnings on Pension Plan Investments		
	Arising from Prior Reporting Periods		(3,209)
15.	**Total Pension Expense / (Income)**	**$**	**17,706**

STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT REPORTING PERIOD FISCAL YEAR ENDED JUNE 30, 2015 (DOLLARS IN THOUSANDS)

A. Outflows (Inflows) of Resources due to Liabilities		
1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	$	(4,366)
2. Assumption Changes (gains) or losses	$	21,696
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		5.0000
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	$	(873)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	$	4,339
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$	3,466
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	$	(3,493)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	$	17,357
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$	13,864
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	5,959
2. Recognition period for Assets {in years}		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	$	1,192
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	4,767

STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT AND PRIOR REPORTING PERIODS
FISCAL YEAR ENDED JUNE 30, 2015 (DOLLARS IN THOUSANDS)

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows/ (Inflows) of Resources
1. Due to Liabilities	$ 5,355	$ 2,556	$ 2,799
2. Due to Assets	1,192	3,209	(2,017)
3. Total	$ 6,547	$ 5,765	$ 782

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows/ (Inflows) of Resources
1. Differences between expected and actual experience	$ 1,016	$ 873	$ 143
2. Assumption Changes	4,339	1,683	2,656
3. Net Difference between projected and actual earnings on pension plan investments	1,192	3,209	(2,017)
4. Total	$ 6,547	$ 5,765	$ 782

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows/ (Inflows) of Resources
1. Differences between expected and actual experience	$ 3,048	$ 3,493	$ (445)
2. Assumption Changes	17,357	5,050	12,307
3. Net Difference between projected and actual earnings on pension plan investments	4,767	9,628	(4,861)
4. Total	$ 25,172	$ 18,171	$ 7,001

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows/ (Inflows) of Resources
2016	$ 782
2017	782
2018	780
2019	4,657
2020	0
Thereafter	0
Total	$ 7,001

STATEMENT OF FIDUCIARY NET POSITION AS OF JUNE 30, 2015 (DOLLARS IN THOUSANDS)

Assets		**June 30, 2015**
Cash & Short-term Investments	$	3,911
Receivables		134
Investment Pools (at fair value)		170,655
Securities Lending Collateral		17,755
Capital Assets		0
Total Assets	**$**	**192,455**
Total Deferred Outflows of Resources	**$**	**0**
Total Liabilities	**$**	**(17,875)**
Total Deferred Inflows of Resources	**$**	**0**
Net Position Restricted for Pensions	**$**	**174,580**

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION FOR THE FISCAL YEAR ENDED JUNE 30, 2015 (DOLLARS IN THOUSANDS)

1. Net position at market value at beginning of year	**$**	**175,556**
Additions		
2. Contributions		
a. Employee	$	3,629
b. Employer		9,776
c. Other sources		0
d. Total contributions	$	13,405
3. Investment income		
a. Investment income/(loss)	$	7,816
b. Investment expenses		(244)
c. Net investment income/(loss)	$	7,572
4. Other Additions		0
5. Total Additions *(2.d.) + (3.c.) + (4.)*	**$**	**20,977**
Deductions		
6. Benefits Paid		
a. Annuity benefits	$	(21,893)
b. Refunds		0
c. Total benefits paid	$	(21,893)
7. Expenses		
a. Other deductions	$	0
b. Administrative		(60)
c. Total expenses	$	(60)
8. Total deductions *(6.c.) + (7.c.)*	**$**	**(21,953)**
9. Net increase/(decrease) in fiduciary net position *(5.) + (8.)*	**$**	**(976)**
10. Net position at market value at end of year *(1.) + (9.)*	**$**	**174,580**
11. State Board of Investment calculated annual investment return		4.4%

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios Current Period

Fiscal Year Ended June 30, 2015 (Dollars in Thousands)

A. Total pension liability			
1. Service Cost	$	12,251	
2. Interest on the Total Pension Liability		21,773	
3. Changes of benefit terms		0	
4. Difference between expected and actual experience of the Total Pension Liability		(4,366)	
5. Changes of assumptions		21,696	(1)
6. Benefit payments, including refunds of employee contributions		(21,893)	
7. Net change in total pension liability	$	29,461	
8. Total pension liability – beginning		381,511	
9. Total pension liability – ending	**$**	**410,972**	
B. Plan fiduciary net position			
1. Contributions – employer	$	9,776	
2. Contributions – employee		3,629	
3. Net investment income		7,572	
4. Benefit payments, including refunds of employee contributions		(21,893)	
5. Pension Plan Administrative Expense		(60)	
6. Other changes		0	
7. Net change in plan fiduciary net position	$	(976)	
8. Plan fiduciary net position – beginning		175,556	
9. Plan fiduciary net position – ending	**$**	**174,580**	
C. Net pension liability, *A.9 - B.9.*	**$**	**236,392**	
D. Plan fiduciary net position as a percentage of the total pension liability, *B.9 / A.9.*		**42.48%**	
E. Covered-employee payroll	**$**	**43,449**	(2)
F. Net pension liability as a percentage of covered-employee payroll, *C. / E.*		**544.07%**	

(1) *Assumption changes are summarized on page 26.*
(2) *Assumed equal to actual employer contributions divided by employer contribution rate.*

The covered-employee payroll figure shown represents the annual compensation for active employees on which contributions to the pension plan are based and does not necessarily represent Covered-Employee Payroll as defined in GASB Statement Nos. 67 and 68. If a different payroll figure should be used in this schedule, please let us know.

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios Multiyear (Dollars in Thousands)

Last 10 Fiscal Years (which will be built prospectively)

Fiscal year ending June 30,	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Total Pension Liability										
Service Cost	$ 12,251	$ 12,075								
Interest on the Total Pension Liability	21,773	20,535								
Benefit Changes	0	0								
Difference between Expected and Actual Experience	(4,366)	5,080								
Assumption Changes	21,696 (1)	(8,416)								
Benefit Payments	(21,893)	(20,802)								
Refunds	0	0								
Net Change in Total Pension Liability	$ 29,461	8,472								
Total Pension Liability - Beginning	381,511	373,039								
Total Pension Liability - Ending (a)	**$ 410,972**	**$ 381,511**								
Plan Fiduciary Net Position										
Employer Contributions	$ 9,776	$ 9,426								
Employee Contributions	3,629	3,578								
Pension Plan Net Investment Income	7,572	28,011								
Benefit Payments	(21,893)	(20,802)								
Refunds	0	0								
Pension Plan Administrative Expense	(60)	(55)								
Other Changes	0	0								
Net Change in Plan Fiduciary Net Position	**$ (976)**	**20,158**								
Plan Fiduciary Net Position - Beginning	**175,556**	**155,398**								
Plan Fiduciary Net Position - Ending (b)	**$ 174,580**	**$ 175,556**								
Net Pension Liability - Ending (a) - (b)	**$ 236,392**	**205,955**								
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	**42.48 %**	**46.02 %**								
Covered-Employee Payroll[2]	**$ 43,449**	**$ 41,893**								
Net Pension Liability as a Percentage of Covered-Employee Payroll	**544.07 %**	**491.62 %**								

Notes to Schedule:

(1) *Assumption changes are summarized on page 26.*
(2) *Assumed equal to actual employer contributions divided by employer contribution rate.*

The covered-employee payroll figure shown represents the annual compensation for active employees on which contributions to the pension plan are based and does not necessarily represent Covered-Employee Payroll as defined in GASB Statement Nos. 67 and 68. If a different payroll figure should be used in this schedule, please let us know.

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF NET PENSION LIABILITY MULTIYEAR (DOLLARS IN THOUSANDS)

Fiscal Year Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered-Employee Payroll	Net Pension Liability as a % of Covered-Employee Payroll
	(a)	(b)	(a) - (b) = (c)	(b)/(c)	(d)	(c)/(d)
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014	$ 381,511	$ 175,556	$ 205,955	46.02%	$ 41,893	491.62%
2015	410,972	174,580	236,392	42.48%	43,449	544.07%

The covered-employee payroll figure shown represents the annual compensation for active employees on which contributions to the pension plan are based and does not necessarily represent Covered-Employee Payroll as defined in GASB Statement Nos. 67 and 68. If a different payroll figure should be used in this schedule, please let us know.

SCHEDULE OF CONTRIBUTIONS MULTIYEAR (DOLLARS IN THOUSANDS)

Last 10 Fiscal Years

Fiscal Year Ending June 30,	Actuarially Determined Contribution (1)	Actual Contributions	Contribution Deficiency (Excess)	Covered-Employee Payroll	Actual Contributions as a % of Covered-Employee Payroll
	(a)	(b)	(a) - (b) = (c)	(d)	(b)/(d)
2006	$ 7,779	$ 7,336	$ 443	$ 36,529	20.08%
2007	8,331	7,572	759	36,195	20.92
2008	10,045	7,936	2,109	38,296	20.72
2009	8,985	8,219	766	39,444	20.84
2010	9,400	8,283	1,117	39,291	21.08
2011	9,804	8,297	1,507	40,473	20.50
2012	9,879	7,922	1,957	38,644 (2)	20.50
2013	13,524	8,177	5,347	39,888 (2)	20.50
2014	14,193	9,426	4,767	41,893 (2)	22.50
2015	14,298	9,776	4,522	43,449 (2)	22.50

NOTES TO SCHEDULE OF CONTRIBUTIONS

Valuation Date:	June 30, 2015
Notes	(1) Actuarially determined contribution rates are calculated as of each July 1 and apply to the fiscal year beginning on the measurement date. (2) Assumed equal to actual employer contributions divided by employer contribution rate.

Methods and Assumptions Used to Determine Contribution Rates Reported in this Schedule:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	24 years
Asset Valuation Method	5-Year smoothed market; no corridor
Inflation	2.75%
Salary Increases	2.75%
Investment Rate of Return	8.00%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2012 valuation pursuant to an experience study of the period 2007 - 2011, prepared by a former actuary.
Healthy Post-Retirement Mortality	RP-2000 annuitant generational mortality table, projected with mortality improvement scale AA, white collar adjustment, set back one year for males and set back two years for females.

Other Information:

Benefit Increases After Retirement	The post-retirement increase is assumed to remain at 1.75% indefinitely. See separate funding actuarial valuation report as of July 1, 2015 for additional detail. To obtain this report, contact MSRS at 60 Empire Drive, Suite 300, St. Paul, MN, 55103 or request via email at info@msrs.us or telephone at 1-800-651-5757. This report can be found online at www.msrs.state.mn.us/actuarial-reports.

SCHEDULE OF INVESTMENT RETURNS MULTIYEAR

Last 10 Fiscal Years

Fiscal Year Ending June 30,	Annual Return[1]
2006	
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	18.66 %
2015	4.45 %

[1] *Annual money-weighted rate of return, net of investment expenses.*

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to MSRS for GASB-compliance purposes. MSRS furnished this information to us for inclusion within this report. We did not audit this information. We are not responsible for its accuracy or completeness.

Rate of Return

For the fiscal year ended June 30, 2015, the annual money-weighted rate of return for the Judges Retirement Fund was 4.45%. The money-weighted rate of return is a method of calculating period-by-period returns on pension plan investments that adjusts for the changing amounts actually invested. For purposes of this schedule, the money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

10-Year Schedule of Money-Weighted Investment Return

Ten-year data is not available. Additional years will be provided when they become available.

To request additional information about the computation of the annual money-weighted rate of return and the investments for the Minnesota Retirement Systems (including the investments for MSRS' defined benefit retirement funds), contact SBI at 60 Empire Drive, Suite 355, St. Paul, Minnesota, 55103, via email at minn.sbi@state.mn.us or telephone at (651) 296-3328.

SECTION D

ADDITIONAL FINANCIAL STATEMENT DISCLOSURES

ASSET ALLOCATION

Long-Term Expected Return on Plan Assets

The long-term expected rate of return on pension plan investments was determined using a building-block method. Best estimates for expected future real rates of return (expected returns, net of inflation) were developed for each asset class using both long-term historical returns and long-term capital market expectation from a number of investment management and consulting organizations. The asset class estimates and the target allocations were then combined to produce geometric, long-term expected real rate of return for the portfolio. Inflation expectations were applied to derive the nominal rate of return for the portfolio. For each asset class that is included in the pension fund's target asset allocation as of June 30, 2015, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Geometric)
Domestic Stocks	45.00%	5.50%
International Stocks	15.00%	6.00%
Bonds	18.00%	1.45%
Alternative Assets	20.00%	6.50%
Unallocated Cash	2.00%	0.50%
Total	100.00%	

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to MSRS for GASB-compliance purposes. MSRS furnished this information to us for inclusion within this report. We did not audit this information. We are not responsible for its accuracy or completeness.

At MSRS' direction, for purposes of this valuation, the long-term expected rate of return assumption is 7.90%. This assumption is based on a review of inflation and investment return assumptions dated September 11, 2014.

SENSITIVITY OF NET PENSION LIABILITY TO THE SINGLE DISCOUNT RATE ASSUMPTION

Single Discount Rate

A single discount rate of 5.25% was used to measure the total pension liability. This single discount rate was based on an expected rate of return on pension plan investments of 7.90% and a municipal bond rate of 3.80%. The projection of cash flows used to determine this single discount rate assumed that plan member and employer contributions will be made at the current contribution rates. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to fully finance the benefit payments through the year ending June 30, 2034 and assets were projected to be fully depleted in the year ending June 30, 2036. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the point of asset depletion, and the municipal bond rate was applied to all benefit payments after the point of asset depletion.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the fund's net pension liability, calculated using a single discount rate of 5.25%, as well as what the fund's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower (4.25%) or 1-percentage-point higher (6.25%) than the current single discount rate:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

(Dollars in Thousands)

	1% Decrease 4.25%	Current Single Discount Rate Assumption 5.25%	1% Increase 6.25%
Total Pension Liability	$457,434	$410,972	$371,516
Net Position Restricted for Pensions	$174,580	$174,580	$174,580
Net Pension Liabitliy	**$282,854**	**$236,392**	**$196,936**

A single discount rate of 5.78% was used for the measurement date as of July 1, 2014. For more information on the calculation of the single discount rate, refer to Section G of this report.

GASB Statement No. 68 Reconciliation (Dollars in Thousands)

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Total Pension Expense
Balance Beginning of Year	**$ 381,511**	**$ 175,556**	**$ 205,955**	**$ 4,064**	**$ 19,570**	
Changes for the Year:						
Service Cost	$ 12,251		$ 12,251			$ 12,251
Interest on Total Pension Liability	21,773		21,773			21,773
Interest on Plan Fiduciary Net Position (1)		$ 13,531	(13,531)			(13,531)
Changes in Benefit Terms						
Liability Experience Gains and Losses	(4,366)		(4,366)		$ 3,493	(873)
Changes in Assumptions	21,696		21,696	$ 17,357		4,339
Recognition of Deferred Outflows/(Inflows) of Resources Arising from Prior Reporting Periods						
Liability Experience Gains/(Losses)				(1,016)		1,016
Assumption Changes					(1,683)	(1,683)
Investment Gains/(Losses)					(3,209)	(3,209)
Contributions - Employer		9,776	(9,776)			
Contributions - Employees		3,629	(3,629)			(3,629)
Asset Gain/(Loss) (1)		(5,959)	5,959	4,767		1,192
Benefit Payments and Refunds	(21,893)	(21,893)	0			
Administrative Expenses		(60)	60			60
Other Changes						
Net Changes	**$ 29,461**	**$ (976)**	**$ 30,437**	**$ 21,108**	**$ (1,399)**	**$ 17,706**
Balance End of Year	**$ 410,972**	**$ 174,580**	**$ 236,392**	**$ 25,172**	**$ 18,171**	

(1) The sum of these items equal the net investment income of $7,572.

SUMMARY OF POPULATION STATISTICS

		Terminated		Recipients			
	Actives*	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	Total
Members on 7/1/2014	**316**	**16**	**0**	**227**	**24**	**84**	**667**
New members	16	0	0	0	0	0	**16**
Return to active	0	0	0	0	0	0	**0**
Terminated non-vested	0	0	0	0	0	0	**0**
Service retirements	(20)	0	0	20	0	0	**0**
Terminated deferred	0	0	0	0	0	0	**0**
Terminated refund/transfer	0	0	0	0	0	0	**0**
Deaths	0	0	0	(7)	(1)	(4)	**(12)**
New beneficiary	0	0	0	0	0	3	**3**
Disabled	0	0	0	0	0	0	**0**
Unexpected status changes	0	0	0	0	0	0	**0**
Net change	(4)	0	0	13	(1)	(1)	**7**
Members on 6/30/2015	**312**	**16**	**0**	**240**	**23**	**83**	**674**

** Includes active Judges who have reached the maximum benefit formula (employee contributions are directed to the Unclassified Employees Retirement Plan).*

SECTION E

SUMMARY OF BENEFITS

SUMMARY OF PLAN PROVISIONS

Following is a summary of the major plan provisions used in the valuation of this report. MSRS is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report.

Plan year	July 1 through June 30.
Eligibility	A judge or justice of any court. If the member was active prior to January 1, 1974, benefits may be computed according to provisions of the prior plan.
Tier 1 / Tier 2 Member	Tier 1 includes judges or justices first appointed or elected before July 1, 2013 and Tier 2 includes judges or justices first appointed or elected after June 30, 2013. A judge or justice with less than five years of service as of December 30, 2013 may make a one-time irrevocable election into Tier 2. For the purpose of this valuation, we have assumed no Tier 1 members elected Tier 2 benefits as of the valuation date.
Contributions	
Member	9.00% of salary for Tier 1 members, 7.00% of salary for Tier 2 members. Tier 1 member contributions after maximum benefit is reached are redirected to the Unclassified Employees Retirement Plan.
Employer	22.50% of salary.
	Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
Allowable service	Service as a judge. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.
Salary	Salary set by law.
Average salary	Average of the five highest years of salary of the last 10 years prior to termination of judicial service.

SUMMARY OF PLAN PROVISIONS (CONTINUED)

Retirement

<u>Normal retirement benefit</u>

Age/Service requirement	First appointed as a judge before July 1, 2013 (Tier 1): (a.) Age 65 and five years of Allowable Service (b.) Age 70 (mandatory retirement age) First appointed as a judge after June 30, 2013 (Tier 2): (a.) Age 66 and five years of Allowable Service (b.) Age 70 (mandatory retirement age) Judges appointed before July 1, 2013 with less than five years of allowable service on or before December 31, 2013 may make a one-time election for the Tier 2 benefit package.
Amount	First appointed as a judge before July 1, 2013 (Tier 1): 2.70% of Average Salary for each year of Allowable Service prior to July 1, 1980 and 3.20% of Average Salary for each year of Allowable Service after June 30, 1980. Maximum benefit equal to 76.80% of Average Salary. First appointed as a judge after June 30, 2013 (Tier 2): 2.50% of Average Salary for each year of Allowable Service Tier 1 who elected into Tier 2: 3.20% of Average Salary for each year of Allowable Service prior to January 1, 2014 plus 2.50% of Average Salary for each year of Allowable Service after December 31, 2013.

<u>Early retirement</u>

Age/Service requirement	Age 60 and five years of Allowable Service.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.50% for each month the member is under Normal Retirement Age at time of retirement.
<u>Form of payment</u>	Life annuity. Actuarially equivalent options are: (a.) 50%,75% or 100% joint and survivor with no bounce back feature (b.) 50%, 75% or 100% bounce back feature (c.) 15-year certain and life thereafter
<u>Benefit increases</u>	Since January 1, 2014, benefit recipients receive annual 1.75% benefit increases. If the accrued liability funding ratio reaches 70% for two consecutive years (on a Market Value of Assets basis), the benefit increase will revert to 2.0%. If the accrued liability funding ratio reaches 90% for two consecutive years (on a Market Value of Assets basis), the benefit increase will revert to 2.5%. A benefit recipient who has been receiving a benefit for at least 12 full months as of the June 30 of the calendar year immediately before the adjustment will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of the June 30 of the calendar year immediately before the adjustment will receive a pro rata increase.

SUMMARY OF PLAN PROVISIONS (CONTINUED)

Disability	
Disability benefit	
Age/Service requirement	Permanent inability to perform the function of judge.
Amount	No benefit is paid by the Fund. Instead, salary is continued for one year but not beyond age 70. Employee contributions continue and Allowable Service is earned. If disability continues after the first year (or at age 70 if earlier), the larger of 25.00% of Average Salary or the Normal Retirement Benefit, without reduction.
Retirement after disability	
Age/Service requirement	Member is still disabled after salary payments cease after one year or at age 70, if earlier.
Amount	No change in disability benefit amount from pre-retirement computed benefit amount.
Form of payment	Same as for retirement.
Benefit increases	Same as for retirement.
Death	
Survivor's benefit	
Age/service requirement	Active or disabled member dies before retirement or a former member eligible for a deferred annuity dies.
Amount	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit earned at date of death. If member dies after age 60 with five or more years of service, spouse may receive the 100% joint and survivor benefit the member had earned as of date of death. Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full-time student).
Benefit increases	Same as for retirement.
Refund of contributions	
Age/service requirement	Member dies prior to retirement or former member eligible for a deferred annuity dies and survivors' benefits are not payable.
Amount	Member contributions with 6.00% annual interest compounded daily until June 30, 2011 and 4.00% thereafter.

Summary of Plan Provisions (Concluded)

Termination	
Refund of contributions	
Age/Service requirement	Termination of service as a judge.
Amount	Member contributions with 6.00% annual interest compounded daily until June 30, 2011, 4.00% thereafter. If a member is vested, a deferred annuity may be elected in lieu of a refund.
Deferred benefit	
Age/service requirement	Five years of Allowable Service.
Amount	Benefit computed under law in effect at termination. Amount is payable at normal or early retirement. If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Form of payment	Same as for retirement.
Optional form conversion factors	Actuarially equivalent factors based on RP-2000 for healthy annuitants, white collar adjustment, projected to 2022 using scale AA, set back one year for males and set back two years for females, blended 80% males, and 6.5% interest.
Combined service annuity	Members are eligible for combined service benefits if they: (a.) Have sufficient allowable service in total that equals or exceeds the applicable service credit vesting requirement of the retirement plan with the longest applicable service credit vesting requirement; (b.) Have at least six months of allowable service credit in each plan worked under; and (c.) Are not in receipt of a benefit from another plan, or have applied for benefits with an effective date within one year. Members who meet the above requirements must have their benefit based on the following: (a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement; (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.
Changes in plan provisions	None.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

ACTUARIAL METHODS

Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

(i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;

(ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Total Pension Liability.

Valuation of Future Post-Retirement Benefit Increases

Benefit recipients receive a future annual 1.75% post-retirement benefit increase. If the funding ratio (determined on a market value of assets basis) reaches 70% (based on a 2.00% post-retirement benefit increase assumption) for two consecutive years, the benefit increase will increase to 2.00%, if the funding ratio reaches 90% (based on a 2.50% post-retirement benefit increase assumption) for two consecutive years, the benefit increase revert to 2.50%.

To determine an assumption regarding a future change in the post-retirement benefit increase, we performed a projection of liabilities and assets based on the following methods and assumptions:

- Future investment returns of 7.90%
- Liabilities and normal cost based on statutory funding assumptions
  - Discount rate of 8.00%
  - Statutory salary increases of 2.75%
- Open group; stable active population (new member profile based on average new members hired in recent years)
- The postretirement benefit increase rate is assumed to be 1.75% per year until the funding ratio threshold required to pay a 2.00% postretirement benefit increase is reached and is assumed to be 2.00% per year until the threshold required to pay a 2.50% postretirement benefit increase is reached.
- Current statutory contributions (i.e. not including potential contribution increases under the contribution stabilizer statutes) as directed by MSRS.

Based on these assumptions and methods, the projection indicates that this plan is expected to pay 1.75% postretirement benefit increases indefinitely. This assumption is reflected in our calculations.

Decrement Timing

All decrements are assumed to occur mid-year.

Asset Valuation Method

Fair value of assets.

SUMMARY OF ACTUARIAL ASSUMPTIONS

The following assumptions were used in valuing the liabilities and benefits under the plan. The demographic assumptions are based on the last experience study, dated February 2012, prepared by a former actuary. The economic assumptions are based on a review of inflation and investment return assumptions dated September 11, 2014.

Investment return	7.90% per annum.
Single discount rate	5.25% per annum.
Benefit increases after retirement	1.75% per annum.
Salary increases	2.75% per year.
Payroll growth	2.75% per year.
Inflation	2.75% per year.
Mortality rates	
Healthy pre-retirement	RP-2000 employee generational mortality table projected using mortality improvement scale AA, white collar adjustment.
Healthy post-retirement	RP-2000 annuitant generational mortality table projected with mortality improvement scale AA, white collar adjustment, set back one year for males and set back two years for females. The RP-2000 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 15 to 70 and the annuitant mortality table contains mortality rates for ages 50 to 95. We have applied the annuitant mortality table for active members beyond age 70 until the assumed retirement age and the employee mortality table for annuitants younger than age 50.
Disabled	RP-2000 annuitant generational mortality table projected with mortality improvement scale AA, white collar adjustment, set back one year for males and set back two years for females.
Retirement	Members retiring from active status are assumed to retire according to the age related rates shown in the rate table. Members who have attained the highest assumed retirement age are assumed to retire in one year.
Withdrawal	None.

SUMMARY OF ACTUARIAL ASSUMPTIONS (CONTINUED)

Disability	Age-related rates based on experience; see table of sample rates.
Administrative expenses	For purposes of the Projection of Plan Fiduciary Net Position, total prior year administrative expenses expressed as a percentage of prior year projected payroll are assumed to increase 2.75% per year and are allocated to the closed group based on the ratio of closed group payroll to total payroll.
Refund of contributions	Account balances for deferred members accumulate interest until normal retirement date and are discounted back to the valuation date.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 65.
Percentage married	Marital status as indicated by data.
Age of spouse	Females are assumed to be three years younger than their male spouses.
Form of payment	Members are assumed to elect a life annuity.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility.
Service credit accruals	It is assumed that members accrue one year of service credit per year.
Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by MSRS. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided. In cases where submitted data was missing or incomplete, the following assumptions were applied: <u>Data for active members:</u> There were 14 members who have reached the 24 year service cap; 2 of these were reported as terminated members. These members are reflected as active members in this valuation. We assumed these members earned the greater of the salary reported under the Unclassified Employees Retirement Plan or $138,318 for the July 1, 2014 to June 30, 2015 plan year. There were no members reported with missing service. There were no members reported with missing or invalid birth dates. There was 1 member reported with an invalid gender. We assumed the member was male. <u>Data for terminated members:</u> There was 1 member reported without a benefit. We calculated the benefit for this member using the reported Average Salary, Credited Service and Termination Date provided.

SUMMARY OF ACTUARIAL ASSUMPTIONS (CONTINUED)

Unknown data for certain members	Data for members receiving benefits: There were no members reported without a benefit. There were no members reported with missing or invalid birth dates or gender. There were retired members reported with a survivor option and an invalid or missing survivor gender (53 members) and/or survivor date of birth (41 members). We used the valuation assumptions if the survivor gender or date of birth was missing or invalid. There were 4 retirees reported with a survivor option and a survivor date of death. We assumed no benefit was payable to the survivor, and the member benefit already reflected the increase to the life annuity value (i.e., "bounce back"), if applicable. There were 3 retirees reported with a bounce back annuity but not reported with a reasonable reduction factor. A factor of 0.80, 0.85, and 0.90 was assumed for the 100%, 75%, and 50% joint and survivor annuity, respectively. There were no survivors reported on the data file with an expired benefit.
Changes in actuarial assumptions	The single discount rate was changed from 5.78% to 5.25%.

SUMMARY OF ACTUARIAL ASSUMPTIONS (CONCLUDED)

	Rate (%) *					
	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
20	0.03%	0.02%	0.03%	0.02%	0.03%	0.02%
25	0.04	0.02	0.04	0.02	0.04	0.02
30	0.04	0.02	0.04	0.03	0.04	0.02
35	0.05	0.04	0.06	0.05	0.05	0.04
40	0.08	0.06	0.09	0.06	0.08	0.06
45	0.12	0.08	0.13	0.10	0.12	0.08
50	0.18	0.13	0.20	0.16	0.18	0.13
55	0.56	0.29	0.27	0.24	0.56	0.29
60	0.61	0.47	0.43	0.38	0.61	0.47
65	1.04	0.74	0.67	0.59	1.04	0.74
70	1.74	1.24	0.98	0.88	1.74	1.24

** Generally, mortality rates are expected to increase as age increases. Due to the combination of pre-retirement rates, post-retirement rates, the white collar adjustment, and Projection Scale AA, the prescribed mortality tables have a few ages where assumed mortality decreases slightly instead of increases. We have used the rates as prescribed, but note that the prescribed assumption may not be reasonable at every age. If the rates were reasonably adjusted so that they decreased at all ages, we would not expect the valuation results to be materially different.*

*** These rates were adjusted for mortality improvements using projection scale AA.*

	Disability Retirement	
Age	**Male**	**Female**
20	0.00%	0.00%
25	0.00	0.00
30	0.00	0.00
35	0.01	0.00
40	0.01	0.01
45	0.02	0.03
50	0.07	0.05
55	0.17	0.12
60	0.38	0.31
65	0.00	0.00
70	0.00	0.00

Age	Retirement
60	0%
61	0
62	8
63	5
64	8
65	25
66	20
67	10
68	30
69	10
70	100

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

CALCULATION OF THE SINGLE DISCOUNT RATE

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Fiduciary Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the long-term rate of return is used as the discount rate. In years where assets are not projected to be sufficient to meet benefit payments, the use of a “risk-free” municipal bond rate is required, as described in the following paragraph.

The *Single Discount Rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve Board (FRB)) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.90%; the municipal bond rate is 3.80% (based on the FRB rate as of June 25, 2015). **The resulting single discount rate as of July 1, 2015 is 5.25%.**

Benefit payments projected to occur up through June 30, 2034 were fully funded and benefit payments projected to occur in the year ended June 30, 2035 were partially funded. Assets were projected to be depleted by the fiscal year ending June 30, 2035. Benefit payments were discounted using 7.9%, the expected long-term rate of return on pension plan investments, as long as assets were sufficient to fund the benefit payments. Beginning in the July 1, 2034 to June 30, 2035 fiscal year, when benefit payments exceed the Plan’s Fiduciary Net Position, benefit payments were discounted at 3.80%, the municipal bond rate. An equivalent single discount rate was determined that produced approximately the same present value of projected benefits when applied to all years of projected benefits as the present value of projected benefits using 7.90% through the point of asset depletion and 3.80% after. For calculation of the equivalent present value of projected benefits, see pages 33 and 34 of this report.

The tables in this section provide background for the development of the single discount rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF CONTRIBUTIONS (DOLLARS IN THOUSANDS)

	Projected Covered-Employee Payroll			Projected Contributions			
Year	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll toward Current UAL*	Total Contributions
	(a)	(b)	(c) = (a) + (b)	(d)	(e)	(f)	(g) = (d) + (e) + (f)
0	$ 43,449		$ 43,449				
1	44,577		44,577	$ 3,718	$ 10,030		$ 13,748
2	42,713	$ 3,090	45,803	3,544	9,610	$ 366	13,520
3	40,238	6,825	47,063	3,321	9,053	812	13,186
4	38,287	10,070	48,357	3,144	8,615	1,204	12,963
5	36,454	13,233	49,687	2,977	8,202	1,589	12,768
6	34,738	16,315	51,053	2,822	7,816	1,967	12,605
7	32,879	19,578	52,457	2,657	7,398	2,370	12,425
8	30,877	23,023	53,900	2,482	6,947	2,799	12,228
9	28,815	26,567	55,382	2,303	6,483	3,244	12,030
10	26,698	30,207	56,905	2,123	6,007	3,704	11,834
11	24,792	33,678	58,470	1,961	5,578	4,147	11,686
12	23,095	36,983	60,078	1,816	5,196	4,573	11,585
13	21,345	40,385	61,730	1,669	4,803	5,014	11,486
14	19,420	44,007	63,427	1,510	4,369	5,486	11,365
15	17,313	47,859	65,172	1,339	3,895	5,991	11,225
16	15,325	51,639	66,964	1,179	3,448	6,491	11,118
17	13,625	55,180	68,805	1,042	3,066	6,964	11,072
18	12,007	58,690	70,697	913	2,702	7,437	11,052
19	10,471	62,171	72,642	792	2,356	7,910	11,058
20	9,072	65,567	74,639	682	2,041	8,376	11,099
21	7,682	69,010	76,692	574	1,728	8,851	11,153
22	6,322	72,479	78,801	470	1,422	9,333	11,225
23	5,222	75,746	80,968	386	1,175	9,793	11,354
24	4,284	78,910	83,194	315	964	10,242	11,521
25	3,438	82,044	85,482	251	774	10,691	11,716
26	2,606	85,227	87,833	189	586	11,150	11,925
27	1,955	88,293	90,248	141	440	11,596	12,177
28	1,519	91,211	92,730	109	342	12,026	12,477
29	1,104	94,176	95,280	79	248	12,465	12,792
30	754	97,147	97,901	53	170	12,908	13,131
31	443	100,150	100,593	31	100	13,359	13,490
32	238	103,121	103,359	17	53	13,808	13,878
33	132	106,070	106,202	9	30	14,203	14,242
34	44	109,078	109,122	3	10	14,606	14,619
35	0	112,123	112,123	0	0	15,013	15,013
36	0	115,206	115,206	0	0	15,426	15,426
37	0	118,375	118,375	0	0	15,850	15,850
38	0	121,630	121,630	0	0	16,286	16,286
39	0	124,975	124,975	0	0	16,734	16,734
40	0	128,411	128,411	0	0	17,194	17,194
41	0	131,943	131,943	0	0	17,667	17,667
42	0	135,571	135,571	0	0	18,153	18,153
43	0	139,299	139,299	0	0	18,652	18,652
44	0	143,130	143,130	0	0	19,165	19,165
45	0	147,066	147,066	0	0	19,692	19,692
46	0	151,111	151,111	0	0	20,234	20,234
47	0	155,266	155,266	0	0	20,790	20,790
48	0	159,536	159,536	0	0	21,362	21,362
49	0	163,923	163,923	0	0	21,949	21,949
50	0	168,431	168,431	0	0	22,553	22,553

** Contributions related to future employees in excess of normal cost and expenses. Normal cost and expenses initially total 19.04% of pay but trend down over the projection period (based on the projection assumptions) due to the recognition of lower normal costs for Judges hired after June 30, 2013.*

Single Discount Rate Development
Projection of Contributions (Continued) (Dollars in Thousands)

	Projected Covered-Employee Payroll			Projected Contributions			
Year	Payroll for Current Employees	Payroll for New Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Contributions on Future Payroll toward Current UAL*	Total Contributions
	(a)	(b)	(c) = (a) + (b)	(d)	(e)	(f)	(g) = (d) + (e) + (f)
51	$ 0	$ 173,063	$ 173,063	$ 0	$ 0	$ 23,173	$ 23,173
52	0	177,822	177,822	0	0	23,810	23,810
53	0	182,712	182,712	0	0	24,465	24,465
54	0	187,737	187,737	0	0	25,138	25,138
55	0	192,900	192,900	0	0	25,829	25,829
56	0	198,204	198,204	0	0	26,540	26,540
57	0	203,655	203,655	0	0	27,269	27,269
58	0	209,255	209,255	0	0	28,019	28,019
59	0	215,010	215,010	0	0	28,790	28,790
60	0	220,923	220,923	0	0	29,582	29,582
61	0	226,998	226,998	0	0	30,395	30,395
62	0	233,240	233,240	0	0	31,231	31,231
63	0	239,655	239,655	0	0	32,090	32,090
64	0	246,245	246,245	0	0	32,972	32,972
65	0	253,017	253,017	0	0	33,879	33,879
66	0	259,975	259,975	0	0	34,811	34,811
67	0	267,124	267,124	0	0	35,768	35,768
68	0	274,470	274,470	0	0	36,752	36,752
69	0	282,018	282,018	0	0	37,762	37,762
70	0	289,773	289,773	0	0	38,801	38,801
71	0	297,742	297,742	0	0	39,868	39,868
72	0	305,930	305,930	0	0	40,964	40,964
73	0	314,343	314,343	0	0	42,091	42,091
74	0	322,988	322,988	0	0	43,248	43,248
75	0	331,870	331,870	0	0	44,437	44,437
76	0	340,996	340,996	0	0	45,659	45,659
77	0	350,374	350,374	0	0	46,915	46,915
78	0	360,009	360,009	0	0	48,205	48,205
79	0	369,909	369,909	0	0	49,531	49,531
80	0	380,082	380,082	0	0	50,893	50,893
81	0	390,534	390,534	0	0	52,292	52,292
82	0	401,274	401,274	0	0	53,731	53,731
83	0	412,309	412,309	0	0	55,208	55,208
84	0	423,647	423,647	0	0	56,726	56,726
85	0	435,297	435,297	0	0	58,286	58,286
86	0	447,268	447,268	0	0	59,889	59,889
87	0	459,568	459,568	0	0	61,536	61,536
88	0	472,206	472,206	0	0	63,228	63,228
89	0	485,192	485,192	0	0	64,967	64,967
90	0	498,534	498,534	0	0	66,754	66,754
91	0	512,244	512,244	0	0	68,589	68,589
92	0	526,331	526,331	0	0	70,476	70,476
93	0	540,805	540,805	0	0	72,414	72,414
94	0	555,677	555,677	0	0	74,405	74,405
95	0	570,958	570,958	0	0	76,451	76,451
96	0	586,660	586,660	0	0	78,554	78,554
97	0	602,793	602,793	0	0	80,714	80,714
98	0	619,370	619,370	0	0	82,934	82,934
99	0	636,402	636,402	0	0	85,214	85,214
100	0	653,903	653,903	0	0	88,277	88,277

** Contributions related to future employees in excess of normal cost and expenses. Normal cost and expenses initially total 19.04% of pay but trend down over the projection period (based on the projection assumptions) due to the recognition of lower normal costs for Judges hired after June 30, 2013.*

SINGLE DISCOUNT RATE DEVELOPMENT
PROJECTION OF PLAN FIDUCIARY NET POSITION (DOLLARS IN THOUSANDS)

Year	Projected Beginning Plan Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.90%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	$ 174,580	$ 13,748	$ 22,225	$ 67	$ 13,461	$ 179,497
2	179,497	13,520	23,341	64	13,797	183,409
3	183,409	13,186	24,668	60	14,042	185,909
4	185,909	12,963	25,794	57	14,187	187,208
5	187,208	12,768	26,924	55	14,239	187,236
6	187,236	12,605	27,830	52	14,200	186,159
7	186,159	12,425	28,776	49	14,071	183,830
8	183,830	12,228	29,796	46	13,840	180,056
9	180,056	12,030	30,858	43	13,493	174,678
10	174,678	11,834	31,919	40	13,020	167,573
11	167,573	11,686	32,805	37	12,418	158,835
12	158,835	11,585	33,591	35	11,694	148,488
13	148,488	11,486	34,383	32	10,842	136,401
14	136,401	11,365	35,127	29	9,854	122,464
15	122,464	11,225	35,929	26	8,716	106,450
16	106,450	11,118	36,606	23	7,421	88,360
17	88,360	11,072	37,105	20	5,971	68,278
18	68,278	11,052	37,417	18	4,372	46,267
19	46,267	11,058	37,575	16	2,627	22,361
20	22,361	11,099	37,553	14	741	0
21	0	11,153	37,431	12	0	0
22	0	11,225	37,198	9	0	0
23	0	11,354	36,703	8	0	0
24	0	11,521	36,015	6	0	0
25	0	11,716	35,176	5	0	0
26	0	11,925	34,243	4	0	0
27	0	12,177	33,128	3	0	0
28	0	12,477	31,848	2	0	0
29	0	12,792	30,527	2	0	0
30	0	13,131	29,143	1	0	0
31	0	13,490	27,729	1	0	0
32	0	13,878	26,257	0	0	0
33	0	14,242	24,744	0	0	0
34	0	14,619	23,249	0	0	0
35	0	15,013	21,761	0	0	0
36	0	15,426	20,285	0	0	0
37	0	15,850	18,848	0	0	0
38	0	16,286	17,452	0	0	0
39	0	16,734	16,098	0	0	0
40	0	17,194	14,790	0	0	0
41	0	17,667	13,529	0	0	0
42	0	18,153	12,319	0	0	0
43	0	18,652	11,162	0	0	0
44	0	19,165	10,060	0	0	0
45	0	19,692	9,016	0	0	0
46	0	20,234	8,032	0	0	0
47	0	20,790	7,109	0	0	0
48	0	21,362	6,250	0	0	0
49	0	21,949	5,454	0	0	0
50	0	22,553	4,719	0	0	0

Single Discount Rate Development
Projection of Plan Fiduciary Net Position (Continued)
(Dollars in Thousands)

Year	Projected Beginning Plan Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.90%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	$ 0	$ 23,173	$ 4,049	$ 0	$ 0	$ 0
52	0	23,810	3,444	0	0	0
53	0	24,465	2,903	0	0	0
54	0	25,138	2,423	0	0	0
55	0	25,829	2,003	0	0	0
56	0	26,540	1,640	0	0	0
57	0	27,269	1,330	0	0	0
58	0	28,019	1,067	0	0	0
59	0	28,790	847	0	0	0
60	0	29,582	665	0	0	0
61	0	30,395	517	0	0	0
62	0	31,231	397	0	0	0
63	0	32,090	301	0	0	0
64	0	32,972	227	0	0	0
65	0	33,879	169	0	0	0
66	0	34,811	124	0	0	0
67	0	35,768	91	0	0	0
68	0	36,752	65	0	0	0
69	0	37,762	47	0	0	0
70	0	38,801	33	0	0	0
71	0	39,868	23	0	0	0
72	0	40,964	15	0	0	0
73	0	42,091	10	0	0	0
74	0	43,248	7	0	0	0
75	0	44,437	4	0	0	0
76	0	45,659	3	0	0	0
77	0	46,915	2	0	0	0
78	0	48,205	1	0	0	0
79	0	49,531	1	0	0	0
80	0	50,893	0	0	0	0
81	0	52,292	0	0	0	0
82	0	53,731	0	0	0	0
83	0	55,208	0	0	0	0
84	0	56,726	0	0	0	0
85	0	58,286	0	0	0	0
86	0	59,889	0	0	0	0
87	0	61,536	0	0	0	0
88	0	63,228	0	0	0	0
89	0	64,967	0	0	0	0
90	0	66,754	0	0	0	0
91	0	68,589	0	0	0	0
92	0	70,476	0	0	0	0
93	0	72,414	0	0	0	0
94	0	74,405	0	0	0	0
95	0	76,451	0	0	0	0
96	0	78,554	0	0	0	0
97	0	80,714	0	0	0	0
98	0	82,934	0	0	0	0
99	0	85,214	0	0	0	0
100	0	88,277	0	0	0	0

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS (DOLLARS IN THOUSANDS)

Year	Projected Beginning Plan Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
1	$ 174,580	$ 22,225	$ 22,225	$ 0	$ 21,396	$ 0	$ 21,663
2	179,497	23,341	23,341	0	20,825	0	21,617
3	183,409	24,668	24,668	0	20,397	0	21,706
4	185,909	25,794	25,794	0	19,768	0	21,566
5	187,208	26,924	26,924	0	19,122	0	21,388
6	187,236	27,830	27,830	0	18,319	0	21,005
7	186,159	28,776	28,776	0	17,555	0	20,636
8	183,830	29,796	29,796	0	16,846	0	20,302
9	180,056	30,858	30,858	0	16,169	0	19,977
10	174,678	31,919	31,919	0	15,501	0	19,633
11	167,573	32,805	32,805	0	14,765	0	19,172
12	158,835	33,591	33,591	0	14,011	0	18,652
13	148,488	34,383	34,383	0	13,291	0	18,140
14	136,401	35,127	35,127	0	12,585	0	17,608
15	122,464	35,929	35,929	0	11,930	0	17,112
16	106,450	36,606	36,606	0	11,265	0	16,565
17	88,360	37,105	37,105	0	10,582	0	15,954
18	68,278	37,417	37,417	0	9,890	0	15,285
19	46,267	37,575	37,575	0	9,204	0	14,584
20	22,361	37,553	22,361	15,192	5,076	7,342	13,849
21	0	37,431	0	37,431	0	17,425	13,115
22	0	37,198	0	37,198	0	16,683	12,384
23	0	36,703	0	36,703	0	15,859	11,610
24	0	36,015	0	36,015	0	14,992	10,824
25	0	35,176	0	35,176	0	14,106	10,045
26	0	34,243	0	34,243	0	13,229	9,291
27	0	33,128	0	33,128	0	12,330	8,540
28	0	31,848	0	31,848	0	11,420	7,801
29	0	30,527	0	30,527	0	10,545	7,104
30	0	29,143	0	29,143	0	9,699	6,444
31	0	27,729	0	27,729	0	8,890	5,825
32	0	26,257	0	26,257	0	8,110	5,241
33	0	24,744	0	24,744	0	7,363	4,693
34	0	23,249	0	23,249	0	6,665	4,189
35	0	21,761	0	21,761	0	6,010	3,726
36	0	20,285	0	20,285	0	5,397	3,300
37	0	18,848	0	18,848	0	4,831	2,913
38	0	17,452	0	17,452	0	4,310	2,563
39	0	16,098	0	16,098	0	3,830	2,246
40	0	14,790	0	14,790	0	3,390	1,961
41	0	13,529	0	13,529	0	2,987	1,704
42	0	12,319	0	12,319	0	2,621	1,474
43	0	11,162	0	11,162	0	2,288	1,269
44	0	10,060	0	10,060	0	1,986	1,087
45	0	9,016	0	9,016	0	1,715	925
46	0	8,032	0	8,032	0	1,472	783
47	0	7,109	0	7,109	0	1,255	659
48	0	6,250	0	6,250	0	1,063	550
49	0	5,454	0	5,454	0	894	456
50	0	4,719	0	4,719	0	745	375

SINGLE DISCOUNT RATE DEVELOPMENT
PRESENT VALUES OF PROJECTED BENEFITS (CONTINUED)
(DOLLARS IN THOUSANDS)

Year	Projected Beginning Plan Fiduciary Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=((c)/(1+sdr)^(a-.5)
51	$ 0	$ 4,049	$ 0	$ 4,049	$ 21,396	$ 616	$ 306
52	0	3,444	0	3,444	20,825	505	247
53	0	2,903	0	2,903	20,397	410	198
54	0	2,423	0	2,423	19,768	329	157
55	0	2,003	0	2,003	19,122	262	123
56	0	1,640	0	1,640	18,319	207	96
57	0	1,330	0	1,330	17,555	162	74
58	0	1,067	0	1,067	16,846	125	56
59	0	847	0	847	16,169	96	42
60	0	665	0	665	15,501	72	32
61	0	517	0	517	14,765	54	23
62	0	397	0	397	14,011	40	17
63	0	301	0	301	13,291	29	12
64	0	227	0	227	12,585	21	9
65	0	169	0	169	11,930	15	6
66	0	124	0	124	11,265	11	4
67	0	91	0	91	10,582	8	3
68	0	65	0	65	9,890	5	2
69	0	47	0	47	9,204	4	1
70	0	33	0	33	5,076	2	1
71	0	23	0	23	0	2	1
72	0	15	0	15	0	1	0
73	0	10	0	10	0	1	0
74	0	7	0	7	0	0	0
75	0	4	0	4	0	0	0
76	0	3	0	3	0	0	0
77	0	2	0	2	0	0	0
78	0	1	0	1	0	0	0
79	0	1	0	1	0	0	0
80	0	0	0	0	0	0	0
81	0	0	0	0	0	0	0
82	0	0	0	0	0	0	0
83	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
87	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
				Totals	$ 298,496	$ 222,427	$ 520,923

SECTION H

GLOSSARY OF TERMS

GLOSSARY OF TERMS

Actuarial Accrued Liability (AAL)
The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."

Actuarial Assumptions
These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.

Accrued Service
Service credited under the system which was rendered before the date of the actuarial valuation.

Actuarial Equivalent
A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.

Actuarial Cost Method
A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.

Actuarial Gain (Loss)
The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.

Actuarial Present Value (APV)
The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future benefit payments at predetermined rates of interest to reflect the expected effects of the time value (present value) of money and the probabilities of payment.

Actuarial Valuation
The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.

Actuarial Valuation Date
The date as of which an actuarial valuation is performed.

Actuarially Determined Contribution (ADC)
A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

GLOSSARY OF TERMS

Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-Employee Payroll	The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
Deferred Inflows and Outflows of Resources	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
Discount Rate or Single Discount Rate	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: 1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period and; 2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.
Entry Age Actuarial Cost Method or Entry Age Normal (EAN)	The EAN is a funding method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

GLOSSARY OF TERMS

Fiduciary Net Position	The fiduciary net position is the value of the net assets of the trust restricted for pension benefits.
GASB	The Governmental Accounting Standards Board is an organization that exists with authority to promulgate accounting standards for state and local governmental entities.
Long-Term Expected Rate of Return	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
Money-Weighted Rate of Return	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
Multiple-Employer Defined Benefit Pension Plan	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Municipal Bond Rate	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
Net Pension Liability (NPL)	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contributing Entities	Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting Statements No. 67 and No. 68 plan members are not considered non-employer contributing entities.
Normal Cost	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
Other Postemployment Benefits (OPEB)	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.

GLOSSARY OF TERMS

Total Pension Expense The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:

1. Service Cost
2. Interest on the Total Pension Liability
3. Current-Period Changes in Benefit Terms
4. Employee Contributions
5. Projected Earnings on Plan Investments
6. Pension Plan Administrative Expense
7. Other Changes in Plan Fiduciary Net Position
8. Recognition of Outflow (Inflow) of Resources due to the difference between expected and actual in measurement of the Total Pension Liability
9. Recognition of Outflow (Inflow) of Resources due to Assumption Changes
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on pension plan investments

Total Pension Liability (TPL) The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.

Unfunded Actuarial Accrued Liability (UAAL) The UAAL is the difference between actuarial accrued liability and valuation assets.

Valuation Assets The valuation assets are the plan fiduciary net position used in determining the net position liability of the plan. For purposes of the GASB Statement No. 67, the asset valuation method is equal to the market value of assets.