Gabriel Roeder Smith & Company
Consultants & Actuaries

JUDGES' RETIREMENT SYSTEM OF ILLINOIS

GASB STATEMENTS NOS. 67 AND 68 ACCOUNTING AND FINANCIAL REPORTING FOR PENSIONS

JUNE 30, 2016

GRS
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November 2, 2016

The Board of Trustees
Judges' Retirement System of Illinois
Springfield, IL

Dear Board Members:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the Judges' Retirement System of Illinois ("JRS"). These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone 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 reporting and disclosure information that satisfies the requirements of GASB Statements Nos. 67 and 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statements Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the Judges' Retirement System of Illinois ("JRS") only in its entirety and only with the permission of JRS.

Our valuation and projections assume the sponsor will make the contributions required by state statute. To the extent the sponsor does not make the statutory required contribution the results contained in this report could be significantly different.

This report is based upon information, furnished to us by JRS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not otherwise audited.

This report complements the actuarial valuation report that was provided to JRS and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2016, for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, the information contained with this report is accurate and fairly represents the actuarial position of the Judges' Retirement System of Illinois. 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.

The signing actuaries are independent of the plan sponsor.

Alex Rivera and Lance J. Weiss and are members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

By ______________________________

Alex Rivera
FSA, EA, MAAA, FCA

By ______________________________

Lance J. Weiss
EA, MAAA, FCA

AR/LW:rg

Auditor’s Note – This information is intended to assist in preparation of the financial statements of the Judges' Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor’s review. Please let us know if the auditor recommends any changes.

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SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
AS OF JUNE 30, 2016

		2016
Actuarial Valuation Date		June 30, 2016
Measurement Date of the Net Pension Liability		June 30, 2016
Employer's Fiscal Year Ending Date (Reporting Date)		June 30, 2016
Membership		
Number of		
- Retirees and Beneficiaries		1,144
- Inactive, Nonretired Members		25
- Active Members		947
- Total		2,116
Covered Payroll	$	177,991,075
Net Pension Liability		
Total Pension Liability	$	2,637,553,302
Plan Fiduciary Net Position		840,288,860
Net Pension Liability	$	1,797,264,442
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		31.86 %
Net Pension Liability as a Percentage of Covered Payroll		1,009.75 %
Development of the Single Discount Rate		
Single Discount Rate Beginning of Year		6.85 %
Single Discount Rate End of Year		6.48 %
Long-Term Expected Rate of Investment Return		6.75 %
Long-Term Municipal Bond Rate Beginning of Year[a]		3.80 %
Long-Term Municipal Bond Rate End of Year[a]		2.85 %
Last year ending June 30 in the 2016 to 2115 projection period for which projected benefit payments are fully funded		2061
Total Pension Expense for Fiscal Year End 6/30/2016[b]	$	141,963,940
Total Pension Expense for Fiscal Year End 6/30/2017	$	207,147,500

Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses as of 6/30/2017

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual non-investment experience	$ 15,840,588	$ 2,456,915
Changes in assumptions	$ 159,641,539	-
Net difference between projected and actual earnings on pension plan investments	63,668,036	25,698,975
Total	$ 239,150,163	$ 28,155,890

[a] *Source: "20-Bond GO Index" is the Bond Buyer index, general obligation, 20 years to maturity, mixed quality. In describing this index, the Bond Buyer notes that the bonds' average credit quality is roughly equivalent to Moody's Investors Service's Aa2 rating and Standard & Poor's Corp.'s AA. The rate shown is as of June 30, 2016 the most recent date available on or before the measurement date.*

[b] *Based on the actuarial valuation as of June 30, 2015.*

DISCUSSION

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 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 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 or local governments 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 JRS subsequent to the measurement date of June 30, 2016.

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 liability and investment experience. The pension expense for fiscal year end June 30, 2016 is based on the results of the actuarial valuation as of June 30, 2015.

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 of 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.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type 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 and the net pension liability;
- The net pension liability using a discount rate that is 1 percent higher and 1 percent lower than 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 GASB 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;
- Annual money-weighted rate of return;

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
- A comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to 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 GASB Statement No. 68 pension expense for fiscal year end June 30, 2016, is based on the results of the actuarial valuation as of June 30, 2015.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2016, and a measurement date of June 30, 2016.

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) 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 6.75 percent; the municipal bond rate is 2.85 percent (based on the weekly rate closest to but not later than the measurement date of the "state & local bonds" rate from Federal Reserve statistical release (H.15)); and the resulting Single Discount Rate is 6.48 percent.

Effective Date and Transition

GASB Statements Nos. 67 and 68 are effective for fiscal years beginning after June 15, 2013, and June 15, 2014 respectively, earlier application is encouraged by the GASB.

Change in Assumptions

Pursuant to Public Act 99-0232, effective August 3, 2015, the five state retirement systems shall conduct an actuarial experience study at least once every three years. The most recent experience study performed for JRS prior to the passage of Pubic Act 99-0232 was for the period ending July 1, 2006, to June 30, 2012, with the actuarial assumptions adopted for use commencing with the June 30, 2013, actuarial valuation. In order to be compliant with Public Act 99-0232, at the Board's request, we performed an experience review for the period July 1, 2012, to June 30, 2015. The primary purpose of the study was to compare the demographic and economic experience against the actuarial assumptions used in the actuarial valuations. The study was based on the information used to perform the actuarial valuations for the period from July 1, 2012, to June 30, 2015.

Following is a summary of key findings and recommendations, as approved by the Board, which became effective for the June 30, 2016, actuarial valuation.

- **Price inflation**: The rate of price inflation was decreased from 3.00 percent to 2.75 percent.
- **Investment return**: The investment return assumption, net of investment expenses, compounded annually, was lowered from 7.00 percent to 6.75 percent, which reflects an underlying price inflation assumption of 2.75 percent.
- **Payroll growth assumption**: The payroll growth assumption was decreased from 3.75 percent to 3.00 percent, which reflects an underlying general price inflation assumption of 2.75 percent.
- **Salary increase**: The salary increase assumption was changed to 3.00 percent per year, compounded annually. This 3.00 percent salary increase assumption includes an inflation component of 2.75 percent per year and a productivity/merit/promotion component of 0.25 percent per year.
- **Normal retirement rates**: The overall rates were decreased to better reflect observed experience.
- **Turnover rates**: The current rate was increased for both Tier One and Tier Two members. For Tier Two members with less than five years of service, the turnover rate was increased to a flat rate of 1.75 percent.
- **Mortality rates**: The mortality tables used for the June 30, 2016, actuarial valuation were changed to the RP-2014 White Collar Total Healthy Annuitant Mortality table for post-retirement mortality and the RP-2014 White Collar Total Employee Mortality table for pre-retirement mortality. In addition to the change in mortality tables, generational mortality improvement factors were added to reflect future mortality improvement. The new mortality tables are a move from a single dimensional age-based table to a two dimensional table, where the year a person was born also influences their mortality rate.

A summary of the actuarial assumptions and methods used in this actuarial valuation are included in Section G of this report.

SECTION B

FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Judges' Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

STATEMENT OF FIDUCIARY NET POSITION
YEARS ENDED JUNE 30, 2016 AND 2015

	2016	2015
Assets		
Cash	$ 49,540,595	$ 33,161,274
Receivables		
Contributions:		
Participants	$ 197	$ 41,965
Employing state agencies	5,502,500	5,582,584
Other Accounts	201,284	173,069
Total Receivables	$ 5,703,981	$ 5,797,618
Investments		
Held in the Illinois State Board of Investment		
Commingled Fund at fair value	$ 785,176,162	$ 795,296,831
Securities lending collateral with State Treasurer	11,503,000	12,776,000
Total Investments	$ 796,679,162	$ 808,072,831
Property and equipment, net of accumulated depreciation	$ 47,968	$ 26,929
Total Assets	$ 851,971,706	$ 847,058,652
Liabilities		
Payables		
Benefits payable	$ -	$ -
Refunds payable	45,945	147,799
Administrative expenses payable	133,901	224,698
Participants' deferred service credit accounts	-	-
Due to State of Illinois	-	-
Securities lending collateral with State Treasurer	11,503,000	12,776,000
Total Liabilities	$ 11,682,846	$ 13,148,497
Net Position Restricted for Pensions	$ 840,288,860	$ 833,910,155

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
YEARS ENDED JUNE 30, 2016 AND 2015

	2016	2015
Additions		
Contributions		
Participants	$ 14,962,055	$ 15,431,105
Employing state agencies and appropriations	132,060,000	134,039,684
Total Contributions	$ 147,022,055	$ 149,470,789
Investment Income		
Net investments income	$ 21,875,864	$ 23,128,695
Interest earned on cash balances	150,116	117,257
Net appreciation in fair value of investments	(28,496,533)	12,763,198
Net Investment Income	$ (6,470,553)	$ 36,009,150
Total Additions	$ 140,551,502	$ 185,479,939
Deductions		
Benefits		
Retirement annuities	$ 109,011,315	$ 102,794,428
Survivors' annuities	23,560,481	22,859,921
Disability benefits	-	-
Lump-sum benefits	-	-
Total Benefits	$ 132,571,796	$ 125,654,349
Refunds	658,051	945,807
Administrative	942,950	982,656
Total Deductions	$ 134,172,797	$ 127,582,812
Net Increase in Net Position	$ 6,378,705	$ 57,897,127
Net Position Restricted for Pensions		
Beginning of Year	$ 833,910,155	$ 776,013,028
End of Year	$ 840,288,860	$ 833,910,155

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Auditor’s Note – This information is intended to assist in preparation of the financial statements of the Judges' Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor’s review. Please let us know if the auditor recommends any changes.

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios - Multiyear

Fiscal year ending June 30,	2016	2015	2014
Total Pension Liability			
Service Cost Including Pension Plan Administrative Expense	$ 58,041,274	$ 59,619,744	$ 57,138,961
Interest on the Total Pension Liability	158,611,299	151,431,750	145,993,903
Changes of Benefit Terms	-	-	-
Difference between Expected and Actual Experience	(3,260,012)	28,713,856	4,490,010
Changes of Assumptions	205,404,829	9,482,302	-
Benefit Payments	(132,571,796)	(125,654,349)	(118,590,965)
Refunds of Employee Contributions	(658,051)	(945,807)	(687,923)
Pension Plan Administrative Expense	(942,950)	(982,656)	(831,652)
Net Change in Total Pension Liability	284,624,592	121,664,840	87,512,334
Total Pension Liability - Beginning	2,352,928,710	2,231,263,870	2,143,751,536
Total Pension Liability - Ending (a)	$ 2,637,553,302	$ 2,352,928,710	$ 2,231,263,870
Plan Fiduciary Net Position			
Employer Contributions	$ 132,060,000	$ 134,039,684	$ 126,815,881
Employee Contributions	14,962,055	15,431,105	15,918,732
Pension Plan Net Investment Income	(6,470,553)	36,009,150	110,058,987
Benefit Payments	(132,571,796)	(125,654,349)	(118,590,965)
Refunds of Employee Contributions	(658,051)	(945,807)	(687,923)
Pension Plan Administrative Expense	(942,950)	(982,656)	(831,652)
Other	-	-	-
Net Change in Plan Fiduciary Net Position	6,378,705	57,897,127	132,683,060
Plan Fiduciary Net Position - Beginning	833,910,155	776,013,028	643,329,968
Plan Fiduciary Net Position - Ending (b)	840,288,860	833,910,155	776,013,028
Net Pension Liability - Ending (a) - (b)	$ 1,797,264,442	$ 1,519,018,555	$ 1,455,250,842
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	31.86 %	35.44 %	34.78 %
Covered-Employee Payroll	$ 177,991,075	$ 177,164,450	$ 172,846,373
Net Pension Liability as a Percentage of Covered-Employee Payroll	1,009.75 %	857.41 %	841.93 %

10 fiscal years will be built prospectively.
Please see the following page for additional notes relating to the Schedule of Changes in Net Pension Liability and Related Ratios - Multiyear.

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION
ADDITIONAL NOTES TO THE SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS MULTIYEAR

Beginning of year total pension liability for fiscal year 2016 uses a Single Discount Rate of 6.85 percent and the actuarial assumptions used in the June 30, 2015, funding actuarial valuation. The Single Discount Rate of 6.85 percent was based on a long-term expected rate of return on pension plan investments of 7.00 percent used in the June 30, 2015, funding actuarial valuation and a long-term municipal bond rate as of June 25, 2015, of 3.80 percent.

End of year total pension liability for fiscal year 2016 uses a Single Discount Rate of 6.48 percent and the actuarial assumptions in effect as of June 30, 2016, funding actuarial valuation. The Single Discount Rate of 6.48 percent was based on a long-term expected rate of return on pension plan investments of 6.75 percent used in the June 30, 2016, funding actuarial valuation and a long-term municipal bond rate as of June 30, 2016, of 2.85 percent.

The increase in total pension liability for fiscal year 2016 due to assumption changes includes the impact of the change in assumptions used in the June 30, 2016, funding actuarial valuation, which was determined as part of an experience review for the period July 1, 2009, to June 30, 2015, and the change in the long-term municipal bond rate of 3.80 percent as of June 25, 2015, to 2.85 percent as of June 28, 2016.

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF THE NET PENSION LIABILITY MULTIYEAR

Last 10 Fiscal Years (which may be built prospectively)

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll*	Net Pension Liability as a % of Covered Payroll
2014	$ 2,231,263,870	$ 776,013,028	$ 1,455,250,842	34.78 %	$ 172,846,373	841.93 %
2015	2,352,928,710	833,910,155	1,519,018,555	35.44 %	177,164,450	857.41 %
2016	2,637,553,302	840,288,860	1,797,264,442	31.86 %	177,991,075	1,009.75 %

** Covered payroll is the amount in force as of the valuation date and likely differs from actual payroll paid during the fiscal year.*

SCHEDULE OF CONTRIBUTIONS MULTIYEAR
LAST 10 FISCAL YEARS

Fiscal Year	Actuarially Determined Contribution*	Actual Contribution**	Contribution Deficiency (Excess)	Covered Payroll***	Actual Contribution as a % of Covered Payroll	Statutory Contribution	Statutory Contribution Deficiency/(Excess)
7/1/06 - 6/30/07	$ 73,371,653	$ 35,236,800	$ 38,134,853	$ 142,900,000	24.66%	$ 35,236,800	$ -
7/1/07 - 6/30/08	75,134,070	46,977,961	28,156,109	143,700,000	32.69%	46,872,500	(105,461)
7/1/08 - 6/30/09	78,386,597	59,983,000	18,403,597	155,645,000	38.54%	59,983,000	-
7/1/09 - 6/30/10	86,916,418	78,509,810	8,406,608	161,164,000	48.71%	78,832,000	322,190
7/1/10 - 6/30/11	95,490,182	62,694,460	32,795,722	169,155,000	37.06%	62,377,000	(317,460)
7/1/11 - 6/30/12	110,923,357	63,644,099	47,279,258	171,498,000	37.11%	63,628,000	(16,099)
7/1/12 - 6/30/13	125,576,795	88,239,564	37,337,231	177,006,000	49.85%	88,210,000	(29,564)
7/1/13 - 6/30/14	125,061,595	126,815,881	(1,754,286)	172,846,373	73.37%	126,808,000	(7,881)
7/1/14 - 6/30/15	124,215,990	134,039,684	(9,823,694)	177,164,450	75.66%	133,982,000	(57,684)
7/1/15 - 6/30/16	121,362,703	132,060,000	(10,697,297)	177,991,075	74.19%	132,060,000	-

* *The JRS Statutory Funding may not conform to Actuarial Standards of Practice, therefore, the actuarially determined contribution is equal to the normal cost plus an amount to amortize the unfunded actuarial accrued liability as a level percentage of total payroll. The amortization period for fiscal years 2007 through 2016 is 30 years. The Actuarially Determined Contribution (as a percent of payroll) for each fiscal year was determined as of the valuation two years prior and then applied to payroll in force as of the valuation date.*

** *The actual contributions for FYE 6/30/2006 through 6/30/2015 were obtained from the System's comprehensive annual financial reports. The actual contribution for FYE 6/30/2016 was provided by the System.*

*** *Covered payroll shown is the amount in force as of the valuation date and likely differs from actual payroll paid during the fiscal year.*

NOTES TO SCHEDULE OF CONTRIBUTIONS

Valuation Date:	June 30, 2016
Notes	Actuarially determined contribution rates and Statutory contribution rates are calculated as of June 30, which is 12 months prior to the beginning of the fiscal year in which the contributions will be made.

Methods and Assumptions Used to Determine Statutory Contribution Rates:

Actuarial Cost Method	Projected Unit Credit
Amortization Method	**Statutory Contributions** — The Statutory Contribution is equal to the level percentage of pay contributions determined so that the Plan attains a 90 percent funded ratio by the end of 2045. An amortization payment is not directly calculated. The amortization payment is the difference between the total statutory contribution and the employer normal cost contribution. **Actuarially Determined Contributions** — The Actuarially Determined Contribution is equal to the employer's normal cost plus a level percent of capped payroll amortization of the unfunded accrued liability. The amortization period for fiscal years 2006 through 2016 is an open-period 30 years. The Board has adopted a policy to calculate the ADC for financial reporting purposes, effective for the valuation as of June 30, 2015. Under this policy, the ADC for fiscal years ending on and after June 30, 2017, is calculated as the employer's normal cost plus a 25-year level percent of capped payroll closed-period amortization of the unfunded accrued liability. As of June 30, 2016, the remaining amortization period is 24 years. The ADC is expressed as a percentage and applied to capped payroll for the fiscal year.
Asset Valuation Method	5 year smoothed market
Inflation	2.75 percent
Salary Increases	Salary increase rates based on age-related productivity and merit rates plus inflation.
Postretirement Benefit Increases	Postretirement benefit increases of 3.00 percent, compounded, for Tier 1 and 3.00 percent or one-half of the annual increase in the Consumer Price Index, whichever is less, simple, for Tier 2.
Investment Rate of Return	6.75 percent as of the June 30, 2016, valuation.
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the June 30, 2016, valuation pursuant to an experience study of the period July 1, 2012, to June 30, 2015.
Mortality	For post-retirement, RP-2014 White Collar Healthy Annuitant mortality table, sex distinct, with rates set forward one year for males and set back one year for females and generational mortality improvements using the MP-2014 two-dimensional mortality improvement scales. For pre-retirement, RP-2014 White Collar Total Employee mortality table, sex distinct, and generational mortality improvement using MP-2014 two-dimensional mortality improvement scales.

Other Information:

Notes	The statutory contribution for fiscal year ending June 30, 2016, was determined based on the results of the June 30, 2014, valuation. Similarly, the statutory contributions for fiscal years ending June 30, 2017, and June 30, 2018, were determined based on the results of the valuations performed two years prior. All other contributions are projected using current assumptions.

Methods and Assumptions Used for Accounting Purposes as of the Valuation Date:

Actuarial Cost Method	Entry Age Normal
Discount Rate	6.85 percent as of the June 30, 2015, valuation.
	6.48 percent as of the June 30, 2016, valuation.
Asset Valuation Method	Market value

SECTION D

NOTES TO FINANCIAL STATEMENTS

Auditor’s Note – This information is intended to assist in preparation of the financial statements of the Judges' Retirement System of Illinois. Financial statements are the responsibility of management, subject to the auditor’s review. Please let us know if the auditor recommends any changes.

Single Discount Rate

A Single Discount Rate of 6.48 percent 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 6.75 percent and a municipal bond rate of 2.85 percent. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between statutory contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to finance the benefit payments through the year 2061. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the year 2061, and the municipal bond rate was applied to all benefit payments after that date.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 6.48 percent, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

SENSITIVITY OF NET PENSION LIABILITY TO THE SINGLE DISCOUNT RATE ASSUMPTION

1% Decrease 5.48%	Current Single Discount Rate Assumption 6.48%	1% Increase 7.48%
$ 2,114,460,461	$ 1,797,264,442	$ 1,531,264,763

SUMMARY OF POPULATION STATISTICS

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	1,144
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	25
Active Plan Members	947
Total Plan Members	2,116

Additional information about the member data used is included in the June 30, 2016, actuarial valuation report

SECTION E

GASB NO. 68 PENSION EXPENSE

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Fiscal year End 6/30	2016	2015
A. Total Pension Liability		
1. Service Cost Including Pension Plan Administrative Expense	$ 58,041,274	$ 59,619,744
2. Interest on the Total Pension Liability	158,611,299	151,431,750
3. Changes of Benefit Terms	-	-
4. Difference Between Expected and Actual Experience of the Total Pension Liability	(3,260,012)	28,713,856
5. Changes of Assumptions	205,404,829	9,482,302
6. Benefit Payments, Including Refunds of Employee Contributions	(133,229,847)	(126,600,156)
7. Pension Plan Administrative Expense	(942,950)	(982,656)
8. Net Change in Total Pension Liability	**$ 284,624,592**	**$ 121,664,840**
9. Total Pension Liability – Beginning	**2,352,928,710**	**2,231,263,870**
10. Total Pension Liability – Ending	**$ 2,637,553,302**	**$ 2,352,928,710**
B. Plan Fiduciary Net Position		
1. Contributions – Employer	$ 132,060,000	$ 134,039,684
2. Contributions – Employee	14,962,055	15,431,105
3. Net Investment Income	(6,470,553)	36,009,150
4. Benefit Payments, Including Refunds of Employee Contributions	(133,229,847)	(126,600,156)
5. Pension Plan Administrative Expense	(942,950)	(982,656)
6. Other	-	-
7. Net Change in Plan Fiduciary Net Position	**$ 6,378,705**	**$ 57,897,127**
8. Plan Fiduciary Net Position – Beginning	**833,910,155**	**776,013,028**
9. Plan Fiduciary Net Position – Ending	**$ 840,288,860**	**$ 833,910,155**
C. Net Pension Liability	**$ 1,797,264,442**	**$ 1,519,018,555**
D. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	**31.86%**	**35.44%**
E. Covered-Employee Payroll	**$ 177,991,075**	**$ 177,164,450**
F. Net Pension Liability as a Percentage of Covered-Employee Payroll	**1009.75%**	**857.41%**

PENSION EXPENSE UNDER GASB STATEMENT NO. 68
PLAN YEAR ENDED JUNE 30, 2015
APPLICABLE TO FISCAL YEAR ENDED JUNE 30, 2016

A. Expense

1. Service Cost Including Pension Plan Administrative Expense	$	59,619,744
2. Interest on the Total Pension Liability		151,431,750
3. Current-Period Benefit Changes		-
4. Employee Contributions (made negative for addition here)		(15,431,105)
5. Projected Earnings on Plan Investments (made negative for addition here)		(55,074,034)
7. Other Changes in Plan Fiduciary Net Position		-
8. Recognition of Outflow/(Inflow) of Resources due to Liabilities		10,454,096
9. Recognition of Outflow/(Inflow) of Resources due to Assets		(9,036,511)
10. Total Pension Expense	**$**	**141,963,940**

B. Reconciliation of Net Pension Liability

1. Net Pension Liability Beginning of Year	**$**	**1,455,250,842**
2. Pension Expense		141,963,940
3. Employer Contributions (made negative for addition here)		(134,039,684)
4. Change in Deferred Investment Experience (Inflows)/Outflows		28,101,395
5. Change in Deferred Liability Experience (Inflows)/Outflows		20,582,032
6. Change in Deferred Assumption Changes (Inflows)/Outflows		7,160,030
7. Net Pension Liability End of Year	**$**	**1,519,018,555**

C. Deferred Outflows and Deferred Inflows of Resources by Year to be recognized in Future Pension Expenses

Year Ending June 30		Deferred Outflows of Resources		Deferred Inflows of Resources		Net Deferred Outflows (Inflows) of Resources
2016	$	14,267,073	$	12,849,488	$	1,417,585
2017		14,267,073		12,849,488		1,417,585
2018		13,258,933		12,849,487		409,446
2019		4,591,270		-		4,591,270
2020		-		-		-
Total	$	46,384,349	$	38,548,463	$	7,835,886

Our understanding is that JRS is a single employer defined benefit pension plan. If the sponsor has component units, a proportionate share allocation of the pension expense and net pension liability under paragraph 342 of GASB Statement No. 68 may be required.

Pension Expense Under GASB Statement No. 68
Plan Year Ended June 30, 2016
Applicable to Fiscal Year Ended June 30, 2017

A. Expense

1. Service Cost Including Pension Plan Administrative Expense	$	58,041,274
2. Interest on the Total Pension Liability		158,611,299
3. Current-Period Benefit Changes		-
4. Employee Contributions (made negative for addition here)		(14,962,055)
5. Projected Earnings on Plan Investments (made negative for addition here)		(58,815,829)
7. Other Changes in Plan Fiduciary Net Position		-
8. Recognition of Outflow/(Inflow) of Resources due to Liabilities		60,252,046
9. Recognition of Outflow/(Inflow) of Resources due to Assets		4,020,765
10. Total Pension Expense	**$**	**207,147,500**

B. Reconciliation of Net Pension Liability

1. Net Pension Liability Beginning of Year	**$**	**1,519,018,555**
2. Pension Expense		207,147,500
3. Employer Contributions (made negative for addition here)		(132,060,000)
4. Change in Deferred Investment Experience (Inflows)/Outflows		61,265,617
5. Change in Deferred Liability Experience (Inflows)/Outflows		(10,588,739)
6. Change in Deferred Assumption Changes (Inflows)/Outflows		152,481,510
7. Net Pension Liability End of Year	**$**	**1,797,264,442**

C. Deferred Outflows and Deferred Inflows of Resources by Year to be recognized in Future Pension Expenses

Year Ending June 30	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
2017	$ 77,925,396	$ 13,652,585	$ 64,272,811
2018	$ 76,917,256	$ 13,652,584	63,264,672
2019	$ 68,249,593	$ 803,097	67,446,496
2020	$ 16,057,918	$ 47,624	16,010,295
2021	-	-	-
Total	$ 239,150,163	$ 28,155,890	$ 210,994,274

Our understanding is that JRS is a single employer defined benefit pension plan. If the sponsor has component units, a proportionate share allocation of the pension expense and net pension liability under paragraph 342 of GASB Statement No. 68 may be required.

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods
Plan Year Ended June 30, 2014

A. Change in Outflows and (Inflows) of Resources During Plan Year End June 30, 2014

Experience (Gain)/Loss	Balance at Beginning of Year	Amortization Factor	Amortization	Balance at End of Year
1. Differences Between Expected and Actual Non-Investment Experience	$ 4,490,010	4.0832	$ 1,099,630	$ 3,390,380
2. Assumption Changes	-	4.0832	-	-
3. Difference Between Expected and Actual Investment Earnings	(64,247,439)	5.0000	(12,849,488)	(51,397,951)
4. Total	$ (59,757,429)		$ (11,749,858)	$ (48,007,571)

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 Non-Investment Experience	$ 1,099,630	$ -	$ 1,099,630
2. Assumption Changes	-	-	-
3. Difference Between Expected and Actual Investment Earnings	-	12,849,488	(12,849,488)
4. Total	$ 1,099,630	$ 12,849,488	$ (11,749,858)

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 Non-Investment Experience	$ 3,390,380	$ -	$ 3,390,380
2. Assumption Changes	-	-	-
3. Difference Between Expected and Actual Investment Earnings	-	51,397,951	(51,397,951)
4. Total	$ 3,390,380	$ 51,397,951	$ (48,007,571)

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

Year Ending June 30	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
2015	$ 1,099,630	$ 12,849,488	$ (11,749,858)
2016	1,099,630	12,849,488	(11,749,858)
2017	1,099,630	12,849,488	(11,749,858)
2018	91,490	12,849,487	(12,757,997)
2019	-	-	-
Thereafter	-	-	-
Total	$ 3,390,380	$ 51,397,951	$ (48,007,571)

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods
Plan Year Ended June 30, 2015

A. Change in Outflows and (Inflows) of Resources During Plan Year End June 30, 2015

Experience (Gain)/Loss	Balance at Beginning of Year	Amortization Factor	Amortization	Balance at End of Year
1. Differences Between Expected and Actual Non-Investment Experience	$ 28,713,856	4.0832	$ 7,032,194	$ 21,681,662
2. Assumption Changes	9,482,302	4.0832	2,322,272	7,160,030
3. Difference Between Expected and Actual Investment Earnings	19,064,884	5.0000	3,812,977	15,251,907
4. Total	$ 57,261,042		$ 13,167,443	$ 44,093,599

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 Non-Investment Experience	$ 7,032,194	$ -	$ 7,032,194
2. Assumption Changes	2,322,272	-	2,322,272
3. Difference Between Expected and Actual Investment Earnings	3,812,977	-	3,812,977
4. Total	$ 13,167,443	$ -	$ 13,167,443

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 Non-Investment Experience	$ 21,681,662	$ -	$ 21,681,662
2. Assumption Changes	7,160,030	-	7,160,030
3. Difference Between Expected and Actual Investment Earnings	15,251,907	-	15,251,907
4. Total	$ 44,093,599	$ -	$ 44,093,599

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

Year Ending June 30	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
2016	$ 13,167,443	$ -	$ 13,167,443
2017	13,167,443	-	13,167,443
2018	13,167,443	-	13,167,443
2019	4,591,270	-	4,591,270
2020	-	-	-
Thereafter	-	-	-
Total	$ 44,093,599	$ -	$ 44,093,599

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods
Plan Year Ended June 30, 2016

A. Change in Outflows and (Inflows) of Resources During Plan Year End June 30, 2016

Experience (Gain)/Loss	Balance at Beginning of Year	Amortization Factor	Amortization	Balance at End of Year
1. Differences Between Expected and Actual Non-Investment Experience	$ (3,260,012)	4.0593	$ (803,097)	$ (2,456,915)
2. Assumption Changes	205,404,829	4.0593	50,601,047	154,803,782
3. Difference Between Expected and Actual Investment Earnings	65,286,382	5.0000	13,057,276	52,229,106
4. Total	$ 267,431,199		$ 62,855,226	$ 204,575,973

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 Non-Investment Experience	$ -	$ 803,097	$ (803,097)
2. Assumption Changes	50,601,047	-	50,601,047
3. Difference Between Expected and Actual Investment Earnings	13,057,276	-	13,057,276
4. Total	$ 63,658,323	$ 803,097	$ 62,855,226

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 Non-Investment Experience	$ -	$ 2,456,915	$ (2,456,915)
2. Assumption Changes	154,803,782	-	154,803,782
3. Difference Between Expected and Actual Investment Earnings	52,229,106	-	52,229,106
4. Total	$ 207,032,887	$ 2,456,915	$ 204,575,972

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

Year Ending June 30	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
2017	$ 63,658,323	$ 803,097	$ 62,855,226
2018	63,658,323	803,097	62,855,226
2019	63,658,323	803,097	62,855,226
2020	16,057,918	47,624	16,010,295
2021	-	-	-
Thereafter	-	-	-
Total	$ 207,032,887	$ 2,456,915	$ 204,575,972

SECTION F

SUMMARY OF BENEFITS

Summary of Retirement System Plan Provisions (As of June 30, 2016)

1. Participation. Participation in the system is mandatory when a person first becomes a judge, unless an "Election Not to Participate" is filed by the judge within 30 days of the date of notification of this option.

2. Member Contributions. All members of the system are required to contribute to the system the following percentage of their salaries:

Retirement Annuity	7.5 percent
Automatic Annuity Increase	1.0
Survivor's Annuity	2.5
Total	11.0 percent

   All judges who become participants after December 31, 1992, are required to make contributions toward the survivor's annuity unless they file an election not to participate in the survivor's annuity benefit, in which case the total participant contribution rate is 8.5 percent of salary.

3. Discontinuance of Contributions. A participant who becomes eligible to receive the maximum rate of annuity may elect to discontinue contributions and have his or her benefits "fixed" based upon the final rate of salary immediately prior to the effective date of such election. This election, once made, is irrevocable.

4. Election to Contribute Only on Increases in Salary. A participant who has attained age 60 and continues to serve as a judge after becoming eligible to receive the maximum rate of annuity and has not elected to discontinue contributing to the system may elect to make contributions based only on the amount of the increases in salary received by the judge on or after the date of the election.

5. Retirement Annuity – Eligibility. A judge who has at least 10 years of service may retire with an unreduced retirement annuity upon attainment of age 60. A judge with at least 6 years of service may retire with an unreduced retirement annuity upon attainment of age 62.

   A judge with at least 10 years of service may retire upon attainment of age 55, with the amount of the retirement annuity reduced 1/2 of 1 percent for each month that the judge is under age 60 if the judge has less than 28 years of service. This penalty for retirement before age 60 is reduced by 5/12 of 1 percent for every month of service in the System in excess of 20 years.

6. Retirement Annuity – Amount. The retirement annuity is determined according to the following formula based upon the final rate of salary:
   - 3 ½ percent for each of the first 10 years of service; plus
   - 5 percent for each year of service in excess of 10

The maximum retirement annuity is 85 percent of the final rate of salary.

7. Automatic Increase In Retirement Annuity. Annual automatic increases of 3 percent of the current amount of retirement annuity are provided. The initial increase is effective in the month of January of the year next following the year in which the first anniversary of retirement occurs.
8. Temporary Total Disability. A member with at least 2 years of service who becomes totally disabled and unable to perform his or her duties as a judge is entitled to a temporary disability benefit equal to 50 percent of salary payable during the period of disability but not beyond the end of the term of office.

9. Total and Permanent Disability. A member with at least 10 years of service who becomes totally and permanently disabled while serving as a judge is eligible to commence receiving his or her retirement annuity without reduction regardless of age.

10. Survivor's Annuity – Participation and Eligibility. A married judge, an unmarried judge who becomes a participant after December 31, 1992, or a judge who marries after becoming a participant is subject to the provisions relating to the survivor's annuity unless he or she files a written notice of election not to participate in the survivor's annuity.

    An active judge who is not contributing for the survivor's annuity and later marries or remarries may receive partial credit for the survivor's annuity thereby providing a prorated benefit for his or her spouse by contributing to the survivor's annuity benefit prospectively from the date of marriage.

    A surviving spouse without children is eligible for survivor benefits at age 50 or over provided marriage to the member had been in effect for at least 1 year immediately prior to the member's death.

    A surviving spouse with unmarried eligible children of the member is eligible for a survivor's annuity benefit at any age provided the above marriage requirements have been met. When all children are disqualified because of death, marriage or attainment of age 18, or age 22 in the case of a full-time student, the spouse's benefit is suspended if the spouse is under age 50 until the attainment of such age.

    Children of the member who are under age 18 or under age 22 and a full-time student or who are over age 18 and dependent because of a physical or mental disability are eligible for survivor benefits. Legally adopted children are eligible for survivor benefits on the same basis as other children.

    If the member dies in service as a judge, the member must have at least 1 1/2 years of service credit for survivor's annuity eligibility. If death occurs after termination of service, the deceased member must have at least 10 years of service credit for survivor's annuity eligibility.

11. Survivor's Annuity – Amount. (a) Upon the death of an annuitant, his or her surviving spouse shall be entitled to a survivor's annuity of 66-2/3 percent of the annuity the annuitant was receiving immediately prior to his or her death.

    (b) Upon the death of a judge while in service, the surviving spouse shall receive a survivor's annuity of 66-2/3 percent of the annuity earned by the judge as of the date of death, or 7 ½ percent of the judge's last salary, whichever is greater.

    (c) Upon the death of a former judge who had terminated service with at least 10 years of service, his or her surviving spouse shall be entitled to a survivor's annuity of 66-2/3 percent of the annuity earned by the deceased member as of the date of death.

    (d) Upon the death of an annuitant, a judge in service, or a former judge who had terminated service with at least 10 years of service, each surviving child unmarried and under the age of 18, or age 22 in the case of a full-time student, or disabled shall be entitled to a child's annuity in an amount equal to 5 percent of the decedent's final salary, not to exceed in total for all such children the greater of 20 percent of final salary or 66-2/3 percent of the earned retirement annuity.

    (e) Survivor's annuities are subject to annual automatic increases of 3 percent of the current amount of annuity.

12. Refund of Contributions. A participant who ceases to be a judge may apply for and receive a refund of his or her total contributions to the system, provided he or she is not then eligible to receive a retirement annuity.

    A participant who becomes unmarried, either before or after retirement, is entitled to a refund of contributions made for the survivor's annuity.

<u>Judges Who First Become Participants On or After January 1, 2011</u>

The following changes to the above provisions apply to judges who first become participants on or after January 1, 2011:

1. The highest salary for annuity purposes is equal to the average monthly salary obtained by dividing the participant's total salary during the 96 consecutive months of service within the last 120 months of service in which the total compensation was the highest by the number of months in that period.

2. The required contributions shall not exceed the contributions that would be due on the highest salary for annuity purposes.

3. For 2011, the final average salary is limited to the Social Security wage base of $106,800. Limitations for future years shall automatically be increased or decreased,

as applicable, by a percentage change in the Consumer Price Index-U during the preceding 12 month calendar year.

4. A participant is eligible to retire with unreduced benefits after attainment of age 67 with at least 8 years of service credit. However, a participant may elect to retire at age 62 with at least 8 years of service credit and receive a retirement annuity reduced by one-half of 1 percent for each month that his or her age is under 67.

5. The annual retirement annuity provided is equal to 3 percent of the participant's final average salary for each year of service. The maximum retirement annuity payable shall be 60 percent of the participant's final average salary.

6. Automatic annual increases are provided in the retirement annuity then being paid equal to 3 percent or the annual change in the Consumer Price Index for all Urban Consumers, whichever is less. Such increases are payable in the January next following attainment of age 67 and in January of each year thereafter.

7. Automatic annual increases are provided in the survivor annuity then being paid equal to 3 percent or the annual change in the Consumer Price Index for all Urban Consumers, whichever is less. Such increases are payable on each January 1 occurring on or after attainment of age 67.

8. The retirement annuity being paid is suspended when an annuitant accepts full time employment in a position covered under the Judges' Retirement System or any other article of the Illinois Pension Code. Upon termination of the employment, the retirement annuity shall resume and, if appropriate, be recalculated.

9. Salary and COLA development for members hired on or after January 1, 2011, are shown in the table below:

Year Ending	CPI-U	COLA	Maximum Annual Pensionable Earnings
2011		3.00%	$106,800.00
2012	3.90%	3.00%	$110,004.00
2013	2.00%	2.00%	$112,204.08
2014	1.20%	1.20%	$113,550.53
2015	1.70%	1.70%	$115,480.89
2016	0.00%	0.00%	$115,480.89

SECTION G

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Methods — Calculation of the Total Pension Liability

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.

Valuation Methods — Calculation of the Statutory Contributions, Actuarial Cost Method Adopted June 30, 1989, by Statute

The projected unit credit normal cost method is used. Under this method, the projected pension at retirement age is first calculated and the value thereof at the individual member's current or attained age is determined. The normal cost for the member for the current year is equal to the value so determined divided by the member's projected service at retirement. The normal cost for the plan for the year is the sum of the individual normal costs.

The actuarial liability at any point in time is the value of the projected pensions at that time less the value of future normal costs.

For ancillary benefits for active members, in particular death and survivor benefits, termination benefits, and the postretirement increases, the same procedure as outlined above is followed.

Estimated annual administrative expenses are added to the normal cost.

For valuation purposes, as well as projection purposes, an actuarial value of assets is used.

Appropriation Requirements Under P.A. 88-0593

The law governing the System under P.A. 88-0593 provides that:

For fiscal years 2011 through 2045, the minimum contribution to the System for each fiscal year shall be an amount determined to be sufficient to cause the total assets of the System to equal 90 percent of the total actuarial liabilities of the System by the end of fiscal year 2045. In making these determinations, the required contribution shall be calculated each year as a level-percentage-of-payroll over the years remaining to and including fiscal year 2045 and shall be determined under the projected unit credit actuarial cost method. For fiscal years 1997 through 2010, the minimum contribution to the System, as a percentage of the payroll, shall be increased in equal annual increments so that by fiscal year 2010, the contribution rate is at the same level as the contribution rate for fiscal years 2011 through 2045.

Actuarial Assumptions Adopted June 30, 2016

Actuarial assumptions are set by the Board of Trustees. Additional information regarding the rationale for the assumptions may be found in the experience review of the Judges' Retirement System for the three-year period ending June 30, 2015. All actuarial assumptions are expectations of future experience, not market measures.

Mortality

Post-Retirement Mortality

RP-2014 White Collar Total Healthy Annuitant mortality table, sex distinct, with rates set forward one year for males and set back one year for females and generational mortality improvement using MP-2014 two-dimensional mortality improvement scales recently released by the SOA. This assumption provides a margin for mortality improvements.

Pre-Retirement Mortality, including terminated vested members prior to attaining age 50

RP-2014 White Collar Total Employee mortality table, sex distinct and generational mortality improvement using MP-2014 two-dimensional mortality improvement scales recently released by the SOA, to reflect that experience shows active members having lower mortality rates than retirees of the same age.

Interest

6.75 percent per annum, compounded annually, net of investment expenses.

General Inflation

2.75 percent per annum, compounded annually.

This assumption serves as the basis for the determination of Tier Two pay cap growth and annual increases that are equal to the lesser of 3.0 percent or the annual change in the consumer price index-u during the preceding 12-month calendar year.

Marriage Assumption

75.0 percent of active and retired participants are assumed to be married.

Termination

Illustrative rates of withdrawal from the plan are as follows:

Age Based Withdrawal		
Age	Male	Female
30	0.0175	0.0175
35	0.0170	0.0160
40	0.0154	0.0144
45	0.0136	0.0126
50	0.0118	0.0108
55	0.0102	0.0092
60	0.0084	0.0074
65	0.0067	0.0057

It is assumed that terminated employees will not be rehired. The rates apply only to employees who have not fulfilled the service requirement necessary for retirement at any given age.

Salary Increases

A salary increase assumption of 3.00 percent per annum, compounded annually, was used. This 3.00 percent salary increase assumption includes an inflation component of 2.75 percent per annum, and a productivity/merit/promotion component of 0.25 percent.

Load for Inactive Members Eligible for Deferred Vested Pension Benefits

Deferred vested liability is increased by ten percent to account for increase in final average salary due to participation in a reciprocal system.

Disability

No assumption for disability.

Employee Contribution Election

For purposes of the actuarial valuation, it is assumed that all judges elect to contribute only on increases in salary when they become eligible for this provision.

Population Projection

For purposes of determining annual appropriation as a percent of total covered payroll, the size of the active group is assumed to remain level at the number of actives as of the actuarial valuation date. New entrants are assumed to enter with an average age and average pay as disclosed below.

The new entrant profile is based on the averages for all current active members. The average increase in uncapped payroll for the projection period is 3.00 percent per annum.

New Entrant Profile

Age Group	No.	Uncapped Salary	Capped Salary
Under 20			
20-24			
25-29	1	$ 190,758	$ 115,481
30-34	28	5,525,004	3,233,465
35-39	112	21,308,723	12,933,860
40-44	210	39,446,117	24,250,987
45-49	212	39,872,468	24,481,949
50-54	171	31,911,625	19,747,232
55-59	110	20,527,282	12,702,898
60-64	50	9,387,022	5,774,044
65-69	5	934,714	577,404
70 & Over			
Total	899	$ 169,103,713	$ 103,817,320
Avg. Salary		$ 188,102	$ 115,481
Avg. Age			47.23
Percent Male			68.30%

Retirement

Employees are assumed to retire in accordance with the rates shown below. The rates apply only to employees who have fulfilled the service requirement necessary for retirement at any given age.

Retirement Rates	
Age	Males & Females
60	15.00%
61-65	10.00%
66-70	11.00%
71	11.00%
72	12.00%
73	13.00%
74	14.00%
75-79	15.00%
80+	100.00%

Early Retirement Rates		
Age	Male	Female
55	6.50%	7.50%
56	6.50%	7.50%
57	6.50%	7.50%
58	6.50%	7.50%
59	6.50%	7.50%

Assets

Assets available for benefits are determined as described on page 40. The asset valuation method is prescribed by statute, and does not appear to allow a corridor; therefore, a corridor has not been established.

Expenses

As estimated and advised by JRS staff, based on current expenses and are expected to increase in relation to the projected capped payroll. Expenses are included in the service cost.

Spouse's Age

The female spouse is assumed to be four years younger than the male spouse.

Decrement Timing

All decrements are assumed to occur beginning of year.

Decrement Relativity

Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

Decrement Operation

Turnover decrements do not operate after member reaches retirement eligibility.

Eligibility Testing

Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.

415(b) and 401(a)(17) Limits

No explicit assumption is made with respect to these items.

Assumptions as a result of Public Act 96-0889

Members hired after December 31, 2010, are assumed to make contributions on salary up to the final average compensation cap in a given year until this plan provision or administrative procedure is clarified. State contributions, expressed as a percentage of pay, are calculated based upon capped pay.

Retirement rates for Tier Two members to account for the change in retirement age, as follows:

Retirement Rates for Tier Two Members	
Age	Male & Female
67	30.00%
68-70	13.00%
71	11.00%
72	12.00%
73	13.00%
74	14.00%
75-79	15.00%
80	100.00%

Early Retirement Rates for Tier Two Members	
Age	Males and Females
62	11.00%
63	12.00%
64	13.00%
65	14.00%
66	15.00%

Illustrative rates of withdrawal from the plan for Tier Two members are as follows:

Age Based Withdrawal for Tier Two Members		
Age	Male	Female
30	0.0175	0.0175
35	0.0170	0.0160
40	0.0154	0.0144
45	0.0136	0.0126
50	0.0118	0.0108
55	0.0102	0.0092
60	0.0084	0.0074
65	0.0067	0.0057

The preceding withdrawal rates for Tier Two members are the same as the rates for Tier One members.

For Tier Two members with less than five years of service, withdrawal rate is flat at 1.75 percent.

Projection Methodology Adopted June 30, 2005, and Amended June 30, 2009

Appropriation Requirements Under P.A. 93-0002, P.A. 94-0004 and P.A. 96-0043

State Contributions under P.A. 93-0002

In general, for each year during the life of the GOB program, the state contributions to the System are to be calculated as follows:

1. Calculation of the contribution maximum
   a. A projection of contributions will be made from the valuation date to June 30, 2045. Such projection will be based on hypothetical asset values determined using the following assumptions:
      i) That the System had received no portion of the general obligation bond proceeds in excess of the scheduled contributions for the remainder of fiscal 2003 and for the entirety of 2004,
      ii) That hypothetical state contributions had been made each fiscal year from 2005 through the valuation date, based on the funding process in place prior to P.A. 93-0002 (without regard to prior state minimum requirements),
      iii) That the actual amounts of member contributions and the actual cash outflows (benefit payments, refunds and administrative expenses) for each year prior to the valuation date were realized, and
      iv) That the hypothetical fund earned returns in each prior fiscal year equal to the rate of total return actually earned by the retirement fund in that year.
   b. The hypothetical asset values developed in a., above, will not exceed the actual assets of the fund.
   c. A projection of maximum contributions for each year of the GOB program will be performed each year, by reducing the contributions produced in a., above, by the respective amount of debt service allocated to the System for each year.
2. Calculation of the contribution with GOB proceeds
   a. The basic projection of state contributions from the valuation date through June 30, 2045, will be made, taking into account all assets of the System, including the GOB proceeds.
   b. State contribution rates (expressed as a percentage of covered pay), in the pattern required by the funding sections of the statutes, are calculated.
   c. In those projections, the dollars of state contributions which are added to assets each year during the GOB program are limited by the contribution maximum. Because the bonds are to be liquidated by the end of fiscal 2033, there is no contribution maximum thereafter.

State Contributions under P.A. 94-0004

The following is an excerpt from the Illinois Compiled statutes 40 ILCS 5/18-131:

(c) Notwithstanding any other provision of this Article, the total required State contribution for fiscal year 2006 is $29,189,400.

Notwithstanding any other provision of this Article, the total required State contribution for fiscal year 2007 is $35,236,800.

For each State fiscal year 2008 through 2010, the State contribution to the System, as a percentage of the applicable employee payroll, shall be increased in equal annual increments from the required State contribution for State fiscal year 2007, so that by State fiscal year 2011, the State is contributing at a rate otherwise required under this Section.

State Contributions under P.A. 96-0043

The following is an excerpt from the Illinois Compiled statutes 40 ILCS 5/18-131:

(d) For purposes of determining the required State contribution to the System, the value of the System's assets shall be equal to the actuarial value of the System's assets, which shall be calculated as follows:

As of June 30, 2008, the actuarial value of the System's assets shall be equal to the market value of the assets as of that date. In determining the actuarial value of the System's assets for fiscal years after June 30, 2008, any actuarial gains or losses from investment return incurred in a fiscal year shall be recognized in equal annual amounts over the 5-year period following that fiscal year.

(e) For purposes of determining the required State contribution to the system for a particular year, the actuarial value of assets shall be assumed to earn a rate of return equal to the system's actuarially assumed rate of return.

SECTION H

CALCULATION OF THE SINGLE DISCOUNT RATE

CALCULATION OF THE SINGLE DISCOUNT RATE

GASB Statements Nos. 67 and 68 include 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 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 assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a 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) 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 6.75 percent; the municipal bond rate is 2.85 percent; and the resulting Single Discount Rate is 6.48 percent.

The sponsor finances benefit using a funding policy defined in state statute. Sponsor contributions are calculated as a level percentage of capped payroll contributions needed to attain a funded status of 90 percent in 2045 under the Projected Unit Credit cost method. After 2045, the sponsor makes a contribution such that the funded status remains at 90 percent. The statutory contribution does not explicitly separate projected employer contributions between current and future plan members.

For purposes of developing the Single Discount Rate, we have projected actuarial liabilities on an Entry Age Normal basis, and compared against projected market value of assets. We have assumed the actuarial liability for future members will be fully financed, to the extent that assets are available, and any remaining asset will be assigned to current plan members. Based on this assignment of assets and employer contributions, plan assets assigned to current plan members are projected to be depleted by 2061.

The tables in this section provide background for the development of the Single Discount Rate.

The following tables show the assignment of assets and employer contributions and the projection of assets for current members as of the valuation date. Our projections assume the sponsor will make the required statutory contributions. The projections are based on the statutory funding projections performed during the June 30, 2016, actuarial valuation.

Total administrative expenses are assumed to increase at the same rate of projected capped payroll increases. Total administrative expenses are allocated between current and future hires by total payroll.

PROJECTION OF FUNDED STATUS AND ASSIGNMENT OF ASSETS

PYE 6/30	Open Group EAN Actuarial Liability	Closed Group EAN Actuarial Liability	Future Member EAN Actuarial Liability	Open Group Assets	Future Member Assigned Assets	Closed Group Assigned Assets	Funded Ratio Current Members	Funded Ratio Future Members
	(a)	(b)	(c)=(a)-(b)	(d)	(e)=min[(c),(d)]	(f)=(d)-(e)	(g)=(f)/(b)	(h)=(e)/(c)
2016	$ 2,561,148,870	$ 2,561,148,870	$ -	$ 840,288,860	$ -	$ 840,288,860	32.81%	0.00%
2017	2,639,753,636	2,639,753,563	-	897,766,361	-	897,766,361	34.01%	0.00%
2018	2,714,686,797	2,712,894,417	1,792,380	967,119,696	1,792,380	965,327,316	35.58%	100.00%
2019	2,785,630,575	2,780,197,545	5,433,030	1,033,110,600	5,433,030	1,027,677,569	36.96%	100.00%
2020	2,851,555,370	2,840,565,694	10,989,676	1,095,999,674	10,989,676	1,085,009,998	38.20%	100.00%
2021	2,911,782,469	2,893,047,064	18,735,405	1,156,711,932	18,735,405	1,137,976,527	39.33%	100.00%
2022	2,967,162,280	2,938,165,692	28,996,588	1,215,246,098	28,996,588	1,186,249,510	40.37%	100.00%
2023	3,016,639,324	2,974,922,214	41,717,111	1,270,124,592	41,717,111	1,228,407,481	41.29%	100.00%
2024	3,060,339,940	3,003,054,614	57,285,326	1,320,925,778	57,285,326	1,263,640,452	42.08%	100.00%
2025	3,097,760,129	3,021,933,647	75,826,483	1,367,055,473	75,826,483	1,291,228,990	42.73%	100.00%
2026	3,128,906,621	3,031,646,944	97,259,677	1,409,424,618	97,259,677	1,312,164,940	43.28%	100.00%
2027	3,153,492,822	3,031,726,914	121,765,908	1,447,991,601	121,765,908	1,326,225,693	43.74%	100.00%
2028	3,171,830,341	3,022,322,962	149,507,379	1,482,572,074	149,507,379	1,333,064,694	44.11%	100.00%
2029	3,183,933,001	3,003,393,034	180,539,967	1,514,047,298	180,539,967	1,333,507,331	44.40%	100.00%
2030	3,189,955,540	2,974,992,238	214,963,303	1,542,628,701	214,963,303	1,327,665,398	44.63%	100.00%
2031	3,190,615,302	2,937,716,010	252,899,291	1,569,160,932	252,899,291	1,316,261,641	44.81%	100.00%
2032	3,185,442,567	2,891,122,900	294,319,667	1,595,022,124	294,319,667	1,300,702,457	44.99%	100.00%
2033	3,175,115,742	2,835,775,023	339,340,720	1,621,638,767	339,340,720	1,282,298,047	45.22%	100.00%
2034	3,160,099,566	2,772,145,710	387,953,856	1,655,061,799	387,953,856	1,267,107,943	45.71%	100.00%
2035	3,141,129,863	2,700,975,810	440,154,052	1,691,644,704	440,154,052	1,251,490,652	46.33%	100.00%
2036	3,118,558,951	2,622,676,967	495,881,983	1,732,484,199	495,881,983	1,236,602,216	47.15%	100.00%
2037	3,092,816,394	2,537,742,561	555,073,832	1,778,693,950	555,073,832	1,223,620,118	48.22%	100.00%
2038	3,064,522,532	2,446,861,584	617,660,948	1,831,566,935	617,660,948	1,213,905,988	49.61%	100.00%
2039	3,034,397,965	2,350,860,624	683,537,341	1,892,573,472	683,537,341	1,209,036,131	51.43%	100.00%
2040	3,002,919,955	2,250,340,493	752,579,462	1,963,112,353	752,579,462	1,210,532,890	53.79%	100.00%
2041	2,970,999,811	2,146,367,903	824,631,907	2,044,851,466	824,631,907	1,220,219,559	56.85%	100.00%
2042	2,938,992,475	2,039,471,324	899,521,151	2,139,244,492	899,521,151	1,239,723,341	60.79%	100.00%
2043	2,907,742,925	1,930,612,273	977,130,652	2,247,999,788	977,130,652	1,270,869,137	65.83%	100.00%
2044	2,877,943,774	1,820,649,045	1,057,294,729	2,372,922,566	1,057,294,729	1,315,627,837	72.26%	100.00%
2045	2,850,056,182	1,710,213,380	1,139,842,801	2,515,676,514	1,139,842,801	1,375,833,713	80.45%	100.00%
2046	2,824,717,623	1,600,067,865	1,224,649,758	2,491,560,447	1,224,649,758	1,266,910,689	79.18%	100.00%
2047	2,802,718,769	1,491,160,034	1,311,558,735	2,470,427,981	1,311,558,735	1,158,869,246	77.72%	100.00%
2048	2,784,429,661	1,384,025,410	1,400,404,251	2,452,603,450	1,400,404,251	1,052,199,200	76.02%	100.00%
2049	2,770,566,487	1,279,503,989	1,491,062,498	2,438,701,187	1,491,062,498	947,638,690	74.06%	100.00%
2050	2,761,446,395	1,178,068,104	1,583,378,291	2,429,014,011	1,583,378,291	845,635,720	71.78%	100.00%
2051	2,757,434,917	1,080,200,434	1,677,234,482	2,423,864,812	1,677,234,482	746,630,330	69.12%	100.00%
2052	2,758,903,616	986,372,231	1,772,531,385	2,423,580,352	1,772,531,385	651,048,967	66.00%	100.00%
2053	2,766,101,644	896,937,298	1,869,164,346	2,428,386,126	1,869,164,346	559,221,781	62.35%	100.00%
2054	2,779,241,729	812,222,619	1,967,019,110	2,438,474,555	1,967,019,110	471,455,445	58.05%	100.00%
2055	2,798,399,844	732,412,621	2,065,987,222	2,453,916,776	2,065,987,222	387,929,554	52.97%	100.00%
2056	2,823,593,590	657,592,503	2,166,001,087	2,474,732,443	2,166,001,087	308,731,356	46.95%	100.00%
2057	2,854,824,199	587,838,170	2,266,986,029	2,500,924,022	2,266,986,029	233,937,993	39.80%	100.00%
2058	2,892,004,550	523,133,360	2,368,871,190	2,532,418,639	2,368,871,190	163,547,448	31.26%	100.00%
2059	2,934,979,461	463,378,653	2,471,600,808	2,569,078,686	2,471,600,808	97,477,878	21.04%	100.00%
2060	2,983,625,954	408,491,287	2,575,134,666	2,610,793,311	2,575,134,666	35,658,644	8.73%	100.00%
2061	3,037,746,680	358,313,193	2,679,433,487	2,657,387,693	2,657,387,693	-	0.00%	99.18%
2062	3,097,144,060	312,667,574	2,784,476,486	2,708,683,799	2,708,683,799	-	0.00%	97.28%
2063	3,161,617,124	271,356,661	2,890,260,463	2,764,500,479	2,764,500,479	-	0.00%	95.65%
2064	3,230,965,200	234,177,148	2,996,788,052	2,824,656,373	2,824,656,373	-	0.00%	94.26%
2065	3,304,986,085	200,905,450	3,104,080,635	2,888,968,245	2,888,968,245	-	0.00%	93.07%
2066	3,383,486,592	171,310,082	3,212,176,510	2,957,260,047	2,957,260,047	-	0.00%	92.06%
2067	3,466,283,804	145,154,286	3,321,129,518	3,029,364,534	3,029,364,534	-	0.00%	91.21%
2068	3,553,207,557	122,197,544	3,431,010,013	3,105,125,153	3,105,125,153	-	0.00%	90.50%
2069	3,644,107,447	102,197,273	3,541,910,174	3,184,403,248	3,184,403,248	-	0.00%	89.91%
2070	3,738,843,533	84,909,367	3,653,934,167	3,267,069,417	3,267,069,417	-	0.00%	89.41%
2071	3,837,296,860	70,090,617	3,767,206,243	3,353,012,799	3,353,012,799	-	0.00%	89.01%

The projections in this report are strictly for the purpose of determining the GASB Single Discount Rate and are different from a funding projection for the ongoing plan.

Current Member Projection of Assets and Assignment of Employer Contributions

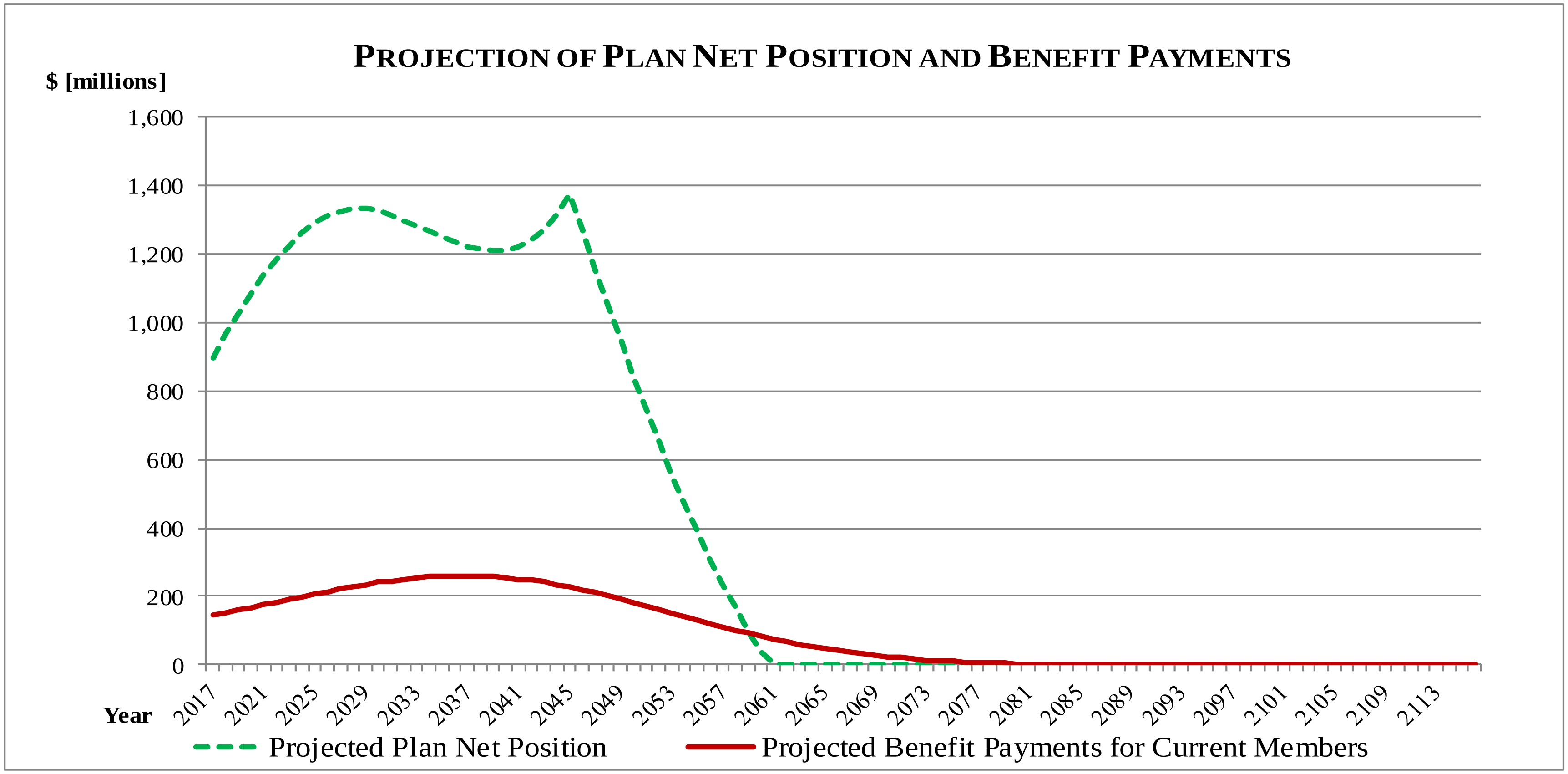
PYE 6/30	Assets (boy)	Member Contributions	Administrative Expenses	Benefit Payments	Assigned Employer Contribution	Income on Cash Flow	Income on Assigned Contribution	Total Investment Income	Assets (eoy)
2017	$ 840,288,860	$ 14,046,634	$ 1,086,400	$ 143,560,587	$ 131,334,000	$ 52,383,708	$ 4,360,146	$ 56,743,854	$ 897,766,361
2018	897,766,361	13,039,567	1,005,686	151,156,032	145,860,182	55,980,525	4,842,400	60,822,925	965,327,316
2019	965,327,316	12,091,431	955,602	158,851,180	144,996,281	60,255,604	4,813,719	65,069,324	1,027,677,569
2020	1,027,677,569	11,168,191	907,915	166,941,493	145,032,146	64,166,589	4,814,910	68,981,499	1,085,009,998
2021	1,085,009,998	10,325,850	854,713	175,217,395	146,125,983	67,735,579	4,851,224	72,586,803	1,137,976,527
2022	1,137,976,527	9,357,406	795,912	182,973,591	146,788,730	71,023,123	4,873,227	75,896,350	1,186,249,510
2023	1,186,249,510	8,468,751	746,323	190,993,872	146,575,827	73,987,429	4,866,159	78,853,587	1,228,407,481
2024	1,228,407,481	7,689,464	691,675	198,882,362	145,732,246	76,547,145	4,838,153	81,385,298	1,263,640,452
2025	1,263,640,452	6,894,053	639,733	206,857,163	144,749,908	78,635,934	4,805,540	83,441,474	1,291,228,990
2026	1,291,228,990	6,183,536	588,256	214,332,446	144,643,016	80,228,109	4,801,991	85,030,101	1,312,164,940
2027	1,312,164,940	5,370,386	540,692	221,721,532	144,775,637	81,370,560	4,806,394	86,176,954	1,326,225,693
2028	1,326,225,693	4,390,519	493,297	228,544,899	144,623,171	82,062,175	4,801,333	86,863,507	1,333,064,694
2029	1,333,064,694	3,691,285	449,477	234,881,380	144,977,430	82,291,684	4,813,094	87,104,778	1,333,507,331
2030	1,333,507,331	3,155,599	407,002	240,696,333	145,174,044	82,112,138	4,819,621	86,931,759	1,327,665,398
2031	1,327,665,398	2,468,180	366,544	245,589,466	145,712,687	81,533,882	4,837,503	86,371,386	1,316,261,641
2032	1,316,261,641	2,224,373	330,790	250,279,906	147,334,296	80,601,504	4,891,339	85,492,843	1,300,702,457
2033	1,300,702,457	1,987,812	294,156	254,037,126	149,554,138	79,419,886	4,965,035	84,384,921	1,282,298,047
2034	1,282,298,047	1,793,082	260,915	256,899,388	156,891,293	78,077,203	5,208,621	83,285,824	1,267,107,943
2035	1,267,107,943	1,638,682	229,995	258,737,568	159,431,878	76,986,746	5,292,966	82,279,712	1,251,490,652
2036	1,251,490,652	1,462,536	202,702	259,771,967	162,340,860	75,893,296	5,389,541	81,282,837	1,236,602,216
2037	1,236,602,216	1,324,617	177,266	259,948,237	165,447,373	74,878,741	5,492,673	80,371,414	1,223,620,118
2038	1,223,620,118	1,180,544	153,200	259,166,660	168,796,900	74,024,412	5,603,874	79,628,287	1,213,905,988
2039	1,213,905,988	1,040,464	131,512	257,345,493	172,417,376	73,425,239	5,724,070	79,149,309	1,209,036,131
2040	1,209,036,131	907,538	112,704	254,660,257	176,326,452	73,181,882	5,853,847	79,035,729	1,210,532,890
2041	1,210,532,890	795,512	95,391	250,821,990	180,411,865	73,407,195	5,989,478	79,396,674	1,220,219,559
2042	1,220,219,559	692,256	81,391	246,261,689	184,809,647	74,209,479	6,135,480	80,344,959	1,239,723,341
2043	1,239,723,341	593,823	67,660	240,705,549	189,331,937	75,707,630	6,285,615	81,993,245	1,270,869,137
2044	1,270,869,137	509,115	56,512	234,269,456	194,110,108	78,021,201	6,444,245	84,465,446	1,315,627,837
2045	1,315,627,837	438,226	47,063	227,159,691	199,088,473	81,276,410	6,609,521	87,885,931	1,375,833,713
2046	1,375,833,713	367,500	37,818	219,347,050	23,709,575	85,597,636	787,132	86,384,769	1,266,910,689
2047	1,266,910,689	301,428	29,841	210,732,523	23,122,457	78,529,397	767,641	79,297,037	1,158,869,246
2048	1,158,869,246	252,202	24,122	201,686,923	22,506,158	71,535,459	747,180	72,282,639	1,052,199,200
2049	1,052,199,200	204,848	18,382	192,035,260	21,906,730	64,654,274	727,280	65,381,554	947,638,690
2050	947,638,690	169,148	14,762	182,096,415	21,306,377	57,925,333	707,349	58,632,682	845,635,720
2051	845,635,720	136,572	11,234	171,906,838	20,711,074	51,377,452	687,585	52,065,037	746,630,330
2052	746,630,330	105,943	8,097	161,529,253	20,143,115	45,038,200	668,730	45,706,929	651,048,967
2053	651,048,967	77,917	5,717	151,091,748	19,609,236	38,932,120	651,005	39,583,125	559,221,781
2054	559,221,781	58,114	3,924	140,652,665	19,117,699	33,079,753	634,687	33,714,440	471,455,445
2055	471,455,445	46,896	2,962	130,352,528	18,665,877	27,497,138	619,687	28,116,825	387,929,554
2056	387,929,554	33,312	2,129	120,289,648	18,261,221	22,192,794	606,253	22,799,047	308,731,356
2057	308,731,356	22,720	1,361	110,491,652	17,910,450	17,171,873	594,608	17,766,480	233,937,993
2058	233,937,993	16,964	1,017	101,043,479	17,615,366	12,436,810	584,811	13,021,621	163,547,448
2059	163,547,448	13,404	803	92,017,367	17,373,424	7,984,994	576,779	8,561,773	97,477,878
2060	97,477,878	6,339	380	83,401,769	17,194,627	3,811,106	570,843	4,381,949	35,658,644
2061	35,658,644	5,455	327	75,256,239	38,408,639	(91,297)	1,275,125	1,183,828	0
2062	0	3,431	206	67,589,499	67,586,273	(2,243,791)	2,243,791	0	0
2063	0	1,684	101	60,410,414	60,408,830	(2,005,508)	2,005,508	0	0
2064	0	-	-	53,712,878	53,712,878	(1,783,209)	1,783,209	0	0
2065	0	-	-	47,501,651	47,501,651	(1,577,003)	1,577,003	0	0
2066	0	-	-	41,769,775	41,769,775	(1,386,711)	1,386,711	0	0
2067	0	-	-	36,507,227	36,507,227	(1,212,000)	1,212,000	0	0
2068	0	-	-	31,702,178	31,702,178	(1,052,478)	1,052,478	0	0
2069	0	-	-	27,340,917	27,340,917	(907,689)	907,689	0	0
2070	0	-	-	23,409,067	23,409,067	(777,156)	777,156	0	0
2071	0	-	-	19,889,811	19,889,811	(660,320)	660,320	0	0

The projections in this report are strictly for the purpose of determining the GASB Single Discount Rate and are different from a funding projection for the ongoing plan.

DEVELOPMENT OF SINGLE DISCOUNT RATE

PYE 6/30	Benefit Payments	Discount Rate	Discounted Benefit Payment	Single Discount Rate	Discounted Benefit Payment
2017	$ 143,560,587	6.75%	$ 138,947,675	6.48%	$ 139,121,141
2018	151,156,032	6.75%	137,048,302	6.48%	137,562,227
2019	158,851,180	6.75%	134,918,261	6.48%	135,762,545
2020	166,941,493	6.75%	132,824,044	6.48%	133,989,148
2021	175,217,395	6.75%	130,593,555	6.48%	132,068,232
2022	182,973,591	6.75%	127,751,218	6.48%	129,516,579
2023	190,993,872	6.75%	124,918,911	6.48%	126,961,544
2024	198,882,362	6.75%	121,853,257	6.48%	124,155,179
2025	206,857,163	6.75%	118,725,376	6.48%	121,270,438
2026	214,332,446	6.75%	115,237,287	6.48%	118,001,658
2027	221,721,532	6.75%	111,672,205	6.48%	114,636,752
2028	228,544,899	6.75%	107,830,314	6.48%	110,969,427
2029	234,881,380	6.75%	103,812,594	6.48%	107,101,662
2030	240,696,333	6.75%	99,655,907	6.48%	103,070,149
2031	245,589,466	6.75%	95,252,289	6.48%	98,761,795
2032	250,279,906	6.75%	90,933,475	6.48%	94,519,417
2033	254,037,126	6.75%	86,462,365	6.48%	90,096,527
2034	256,899,388	6.75%	81,907,770	6.48%	85,563,736
2035	258,737,568	6.75%	77,277,603	6.48%	80,928,589
2036	259,771,967	6.75%	72,680,608	6.48%	76,304,574
2037	259,948,237	6.75%	68,131,078	6.48%	71,706,904
2038	259,166,660	6.75%	63,631,130	6.48%	67,138,099
2039	257,345,493	6.75%	59,188,752	6.48%	62,606,912
2040	254,660,257	6.75%	54,867,593	6.48%	58,181,203
2041	250,821,990	6.75%	50,623,534	6.48%	53,814,951
2042	246,261,689	6.75%	46,560,305	6.48%	49,619,228
2043	240,705,549	6.75%	42,632,145	6.48%	45,546,505
2044	234,269,456	6.75%	38,868,597	6.48%	41,629,427
2045	227,159,691	6.75%	35,305,843	6.48%	37,908,085
2046	219,347,050	6.75%	31,935,905	6.48%	34,375,433
2047	210,732,523	6.75%	28,741,611	6.48%	31,014,427
2048	201,686,923	6.75%	25,768,516	6.48%	27,875,698
2049	192,035,260	6.75%	22,983,955	6.48%	24,925,552
2050	182,096,415	6.75%	20,416,312	6.48%	22,196,322
2051	171,906,838	6.75%	18,055,153	6.48%	19,678,346
2052	161,529,253	6.75%	15,892,467	6.48%	17,364,506
2053	151,091,748	6.75%	13,925,570	6.48%	15,253,440
2054	140,652,665	6.75%	12,143,736	6.48%	13,334,933
2055	130,352,528	6.75%	10,542,799	6.48%	11,605,881
2056	120,289,648	6.75%	9,113,744	6.48%	10,057,794
2057	110,491,652	6.75%	7,842,060	6.48%	8,676,004
2058	101,043,479	6.75%	6,718,017	6.48%	7,450,997
2059	92,017,367	6.75%	5,731,057	6.48%	6,372,234
2060	83,401,769	6.75%	4,866,002	6.48%	5,423,916
2061	75,256,239	6.75%	4,113,123	6.48%	4,596,170
2062	67,589,499	2.85%	18,818,446	6.48%	3,876,578
2063	60,410,414	2.85%	16,353,550	6.48%	3,253,846
2064	53,712,878	2.85%	14,137,557	6.48%	2,716,936
2065	47,501,651	2.85%	12,156,270	6.48%	2,256,449
2066	41,769,775	2.85%	10,393,205	6.48%	1,863,351
2067	36,507,227	2.85%	8,832,058	6.48%	1,529,422
2068	31,702,178	2.85%	7,457,064	6.48%	1,247,249
2069	27,340,917	2.85%	6,252,987	6.48%	1,010,167
2070	23,409,067	2.85%	5,205,402	6.48%	812,232
2071	19,889,811	2.85%	4,300,278	6.48%	648,100
2072	16,765,066	2.85%	3,524,251	6.48%	513,018
2082	2,028,214	2.85%	321,908	6.48%	33,113
2092	351,406	2.85%	42,110	6.48%	3,061
2102	68,174	2.85%	6,168	6.48%	317
2112	888	2.85%	61	6.48%	2
2113	460	2.85%	31	6.48%	1
2114	238	2.85%	15	6.48%	1
2115	119	2.85%	7	6.48%	0
Total Present Value			**$ 3,030,162,638**		**$ 3,030,162,637**

The projections in this report are strictly for the purpose of determining the GASB Single Discount Rate and are different from a funding projection for the ongoing plan.



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SECTION I

GLOSSARY OF TERMS

GLOSSARY OF TERMS

Accrued Service	Service credited under the system that was rendered before the date of the actuarial valuation.
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.
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 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 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 payments at predetermined rates of interest and 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.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)	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 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).
Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
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 employees that are provided with pensions through the pension plan.
Deferred Inflows and Outflows	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.
Deferred Retirement Option Program (DROP)	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
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.

GLOSSARY OF TERMS

Entry Age Actuarial Cost Method (EAN)	The EAN is a cost 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.
Fiduciary Net Position	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
GASB	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for 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, plan members are not considered non-employer contributing entities.
Normal Cost	The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

GLOSSARY OF TERMS

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.
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 Benefit Changes 4. Employee Contributions (made negative for addition here) 5. Projected Earnings on Plan Investments (made negative for addition here) 6. Pension Plan Administrative Expense 7. Other Changes in Plan Fiduciary Net Position 8. Recognition of Outflow (Inflow) of Resources due to Liabilities 9. Recognition of Outflow (Inflow) of Resources due to Assets
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 assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.