Maine Judicial Retirement Program

Actuarial Valuation Report as of June 30, 2015

Produced by Cheiron

October 2015

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October 27, 2015

Board of Trustees
Maine Public Employees Retirement System
PO Box 349
Augusta, Maine 04332-0349

Dear Members of the Board:

We are pleased to submit the June 30, 2015 actuarial valuation report for the Maine Judicial Retirement Program of the Maine Public Employees Retirement System (System). This report is for the use of the Public Employees Retirement Board and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report contains information on assets, liabilities, and contributions of the Legislative Retirement Program, as well as the required accounting statement disclosures under the Governmental Accounting Standards Board (GASB) Statement No. 67 as of June 30, 2015.

In preparing our report, we relied on information, some oral and some written, supplied by the System's staff. This information includes, but is not limited to, the plan provisions, member data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The results of this report rely on future plan experience conforming to the underlying assumptions and methods outlined in this report. To the extent that the actual plan experience deviates from the underlying assumptions and methods, or there are any changes in plan provisions or applicable laws, the results would vary accordingly.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This valuation was prepared for the Maine Public Employees Retirement System for the purposes described herein and for the use by the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Sincerely,
Cheiron

Gene Kalwarski, FSA, EA
Principal Consulting Actuary

Fiona E. Liston, FSA, EA
Principal Consulting Actuary

FOREWORD

This report presents the results, as of June 30, 2015, of the actuarial valuation of the retirement plan for judges in the Maine Judicial Retirement Program. Appendix A, following this introduction, contains the cost results, assets, and liabilities as of this June 30, 2015 date as well as Governmental Accounting Standards Board (GASB) Statement No. 67 disclosures as of a June 30, 2015 measurement date. Appendix B presents a summary of plan provisions. Appendix C presents a description of actuarial assumptions and methods used in determining costs, including a description of the funding method. Appendix D is a glossary of terminology used in the GASB disclosures.

The State of Maine's annual contributions to this Program are determined on a biennial basis. The contribution rates used in the State's budgeting process to produce the applicable State budget contributions in Fiscal Year (FY) 2016 and FY 2017 were based on the liabilities of the 2013 valuation, adjusted for anticipated growth in benefits and reductions due to benefit payouts to reflect our best estimate of the June 30, 2014 liability based on the valuation of the Program as of June 30, 2013 The budgeting process then combined this expected liability with the actual plan assets as of June 30, 2014 to develop the budgeted rates. The results of this June 30, 2015 valuation will be adjusted to June 30, 2016 and used as the basis for the applicable FY 2018 and FY 2019 State budget contributions.

The State of Maine's cost for this Program produced by the June 30, 2014 valuation was 14.25% of payroll. The rate produced by this valuation is 15.58% of payroll, including reflecting an investment returns loss and a liability loss. The liability loss was primarily due to recognition of portability service from other Programs within the System. The impact of this loss will be partially offset by a transfer of assets from their prior Programs. This transfer will be recognized in the 2016 valuation and will be part of the ratemaking process for developing the FY 2018 and FY 2019 contributions. While the amount of the transfer has not yet been calculated, we believe that its inclusion will bring the budgeted contribution rates much closer to what is currently being paid for this Program.

We note that none of the liability figures presented in this report are appropriate for measuring the settlement value of this Program.

Please refer to the Maine Public Employees Retirement System State Employee and Teacher Retirement Program Actuarial Valuation Report as of June 30, 2015 for the reconciliation of the market value of assets and the calculation of the actuarial value of assets.

APPENDIX A
MEMBERSHIP DATA, COSTS, AND FINANCIAL DISCLOSURE INFORMATION

Table A-1
Valuation Results as of June 30, 2015

A. Member Counts		
Active Members		56
Retired Members		49
Beneficiaries of Retired Members		21
Survivors of Deceased Members		0
Disabled Members		1
Deferred Vested Members		3
Inactives Due Refunds		1
Total Membership		**131**
Annual Payroll of Active Members*	$	6,851,612
Annual Payments to Benefit Recipients	$	3,401,651
B. Cost Results		
Employer Normal Cost Contribution Rate		**12.36%**
Unfunded Actuarial Liability Contribution Rate		**3.22%**
Total Employer Contribution Rate		**15.58%**
C. Valuation Results		
1. Calculation of Unfunded Actuarial Liability (UAL)		
a. Actuarial Liability (AL)		
- Retired, Disabled, and Beneficiary Members	$	29,093,440
- Terminated Vested and Inactive Members		1,329,240
- Active Members		28,488,937
- Total Actuarial Liability (AL)	$	58,911,617
b. Actuarial Value of Assets (AVA)		57,074,951
c. Unfunded Actuarial Liability (UAL)	$	1,836,666
2. Other Information		
a. Market Value of Assets (MVA)	$	56,340,825
b. UAL on MVA basis	$	2,570,792
c. Amortization Period for Funding		10 Years

*For FY 2016

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The Governmental Accounting Standards Board (GASB) Statements Nos. 67 and 68 establish standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in financial statements, notes to financial statements, and supplementary information. We have prepared the following exhibits reflecting provisions of GASB Statement Nos. 67 and 68:

- Table A-2: Schedule of Changes in Net Pension Liability and Related Ratios
- Table A-3: Sensitivity of Net Pension Liability to Changes in Discount Rate
- Table A-4: Schedule of Employer Contributions
- Table A-5: Average Expected Remaining Service Lives

A summary of the terminology used in GASB Statement Nos. 67 and 68 is provided in Appendix D of this report. Note that while much of the information provided in this report under GASB No. 67 is also utilized in GASB No. 68 and Table A-5 included in this section is only applicable to GASB No. 68, additional information necessary for disclosures under Statement No. 68 is developed elsewhere.

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Table A-2 below shows the change in the total pension liability (TPL), the plan fiduciary net position (FNP) (i.e., fair value of Program assets), and the net pension liability (NPL) during the measurement year ending June 30, 2015 and related ratios as calculated under the provisions of GASB Statement No. 67 for the Program.

The change in benefit terms item below reflects the 2014 one-time COLA paid September 19, 2014 based on 1.8% of the first $30,000 of annual benefits, up to a maximum of $540 for eligible members. There were no changes in assumptions during the year.

Table A-2
Schedule of Changes in Net Pension Liability and Related Ratios
FY 2015

Total Pension Liability (TPL)	
Service Cost	$ 1,605,751
Interest (Includes Interest on Service Cost)	3,863,455
Changes of Benefit Terms	27,931
Differences Between Actual and Expected Experience	2,237,833
Changes of Assumptions	0
Benefit Payments, Including Refunds of Member Contributions	(3,383,995)
Net Change in TPL	**4,350,975**
Beginning of Year TPL	**54,560,642**
End of Year TPL	**$ 58,911,617**
Plan Fiduciary Net Position (FNP)	
Employer Contributions	$ 979,281
Member Contributions	549,691
Net Investment Income	1,055,347
Benefit Payments, Including Refunds of Member Contributions	(3,383,995)
Administrative Expense	(49,399)
Net Change in FNP	$ (849,075)
Beginning of Year FNP	**57,189,900**
End of Year FNP	**$ 56,340,825**
End of Year Net Pension Liability (NPL)	**$ 2,570,792**
FNP as a Percentage of TPL	95.6%
Covered-Employee Payroll (Payroll)*	$ 7,185,501
NPL as a Percentage of Payroll	35.8%

*For FY 2015

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A ten-year schedule of changes in NPL and related ratios is to be included within the CAFR for PERS. However, based on GASB guidance, this ten-year history can be built one year at a time following implementation. We have shown only the second year of this *Schedule of Changes in Net Pension Liability and Related Ratios* above and believe that you can accumulate these individual years in the MainePERS CAFR to build this schedule to show the full ten-year schedule over time. Notes to this schedule should be included for any factors significantly impacting the trends reported within the period shown in this schedule at that time. We do not believe that any such note is necessary for the measurement year ending June 30, 2015, but it is our expectation that System staff will make the final determination regarding any notes needed for this schedule.

Table A-3 below illustrates the sensitivity of the net pension liability (NPL) to the discount rate. Changes in the discount rate affect the measurement of the total pension liability (TPL) for the Program. Lower discount rates produce a higher TPL, and higher discount rates produce a lower TPL. Because the discount rate does not affect the measurement of assets, the percentage change in the Net Pension Liability (NPL) can be very significant for relatively small changes in the discount rate.

Changes in the discount rate affect the measurement of the Total Pension Liability (TPL). Lower discount rates produce a higher TPL, and higher discount rates produce a lower TPL. Because the discount rate does not affect the measurement of assets, the percentage change in the NPL can be very significant for relatively small change in the discount rate. The table below shows the sensitivity of the NPL to the discount rate.

Table A-3
Sensitivity of Net Pension Liability to Changes in Discount Rate
FY 2015

	1% Decrease 6.125%	Discount Rate 7.125%	1% Increase 8.125%
Total Pension Liability (TPL)	$ 64,086,125	$ 58,911,617	$ 54,395,012
Plan Fiduciary Net Position (FNP)	56,340,825	56,340,825	56,340,825
Net Pension Liability (NPL)	$ 7,745,300	$ 2,570,792	$ (1,945,813)
FNP as a Percentage of TPL	87.9%	95.6%	103.6%

A one percent decrease in the discount rate increases the TPL by approximately 9% and increases the NPL by approximately 201%. A one percent increase in the discount rate decreases the TPL by approximately 8% and decreases the NPL by approximately 176%.

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Table A-4 below provides information relating to the employer contributions for the Program. Under GASB 67, if an actuarially determined contribution (ADC) or a contractually or statutorily required contribution (CRC) is developed for a single employer or cost-sharing plan, the following schedule is required. For purposes of this schedule, an ADC is a contribution amount determined in accordance with Actuarial Standards of Practice and a CRC is based on statutory or contractual requirements. Both should exclude any amounts to specifically finance specific liabilities of individual employers of the plan. If an ADC is available, the schedule of employer contributions should be developed on that basis. If there is no ADC, but there is a CRC, the schedule should be developed on that basis. Only if neither an ADC nor a CRC is developed can this schedule be omitted from the PERS's CAFR.

The Program's rates set in the ratemaking process meet the definition of an ADC, so for this Program this schedule should be developed on that basis. Based on GASB guidance, a full ten years of information should be shown in this schedule if it is available, but this ten-year history can be built one year at a time following implementation. We have shown only the second year of this *Schedule of Employer Contributions* below and believe that you can accumulate these in the MainePERS CAFR to build this schedule to show the full ten-year schedule over time.

Only the current year of the *Notes to Schedule of Employer Contributions* below needs to be included in the notes to this schedule. However, any factors that significantly affect trends in the *Schedule of Employer Contributions* at any point in the ten-year period should also be included in the notes to this schedule. We do not believe that any such note is necessary for the measurement year ending June 30, 2015, but it is our expectation that System staff will make the final determination regarding any notes needed for this schedule.

Table A-4
Schedule of Employer Contributions
FY 2015

Actuarially Determined Contribution (ADC)	$ 951,351
Contributions in Relation to the ADC	951,351
Contribution Deficiency/(Excess)	$ 0
Covered-Employee Payroll (Payroll)*	$ 7,185,501
Contributions as a Percentage of Payroll	13.24%

*For FY 2015

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Notes to Schedule of Employer Contributions:

Valuation Date:	June 30, 2012
Timing:	June 30, 2015 ADC rates are calculated based on a 2012 actuarial valuation developed as a roll-forward of the 2011 valuation liability, adjusted for expected experience and any assumption or methodology changes during FY 2012 using actual assets as of June 30, 2012.

Key Methods and Assumptions Used to Determine Contribution Rates

Actuarial Cost Method:	Entry age normal
Asset Valuation Method:	3-year smoothed market
Amortization Method:	Level percentage of payroll, open 10-year amortization of the 2012 UAL
Discount Rate:	7.25%
Amortization Growth Rate:	3.50%
Price Inflation	3.50%
Salary Increases:	3.50%
Mortality:	Sex distinct RP-2000 Combined Mortality projected to 2015 using Scale AA

A complete description of the methods and assumptions used to determine contribution rates for the year ending June 30, 2015 can be found in the June 30, 2012 actuarial valuation report.

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Average Expected Remaining Service Lives

Table A-5 below was provided in this report at the request of MainePERS staff, showing the development of the average remaining service life for the Plan. GASB 68 requires some items be recognized by employers into pension expense over a period "equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period." For the current measurement year ending on June 30, 2015, these values are thus developed as of June 30, 2014. The development of this value is shown below, including reflection of the decision by MainePERS to round the resulting value to the nearest whole year.

Table A-5
Average Expected Remaining Service Lives
For Measurement Year Ending June 30, 2015

Status	Total Expected Future Service	Count	Average Remaining Service Lives
Actives	308	60	5
In Pay	0	67	0
Deferred "Vested" Members	0	2	0
Inactives Due Refunds	0	1	0
Total Membership	308	130	2

APPENDIX B
SUMMARY OF PLAN PROVISIONS

1. Membership:

Membership is a condition of employment for all judges serving on or after December 1, 1984.

Membership ceases on the earlier of withdrawal of contributions, retirement, or death.

Judges who retired prior to December 1, 1984 are covered under a different plan.

2. Member Contributions:

Members are required to contribute 7.65% of earnable compensation.

3. Average Final Compensation:

For purposes of determining benefits payable, average final compensation is the average annual rate of earnable compensation for the three years of creditable service (not necessarily consecutive) that produce the highest such average.

For active judges as of July 1, 2003, July 1, 2004, and July 1, 2010, average final compensation shall be increased to reflect missed salary increases.

4. Creditable Service:

Creditable service includes the following:

A. all judicial service as a member after November 30, 1984;

B. all judicial service before December 1, 1984;

C. service credited while receiving disability benefits under the Program; and,

D. all service creditable under the State Employee and Teacher Program provided the member elects to have the member’s own and the employer’s contributions on behalf of such service transferred to the Judicial Program.

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5. **Service Retirement Benefits:**

Eligibility:

A. Eligibility for Members with at Least Ten Years of Creditable Service on July 1, 1993

i. Eligibility for members in active service and inactive members:

25 years of creditable service.

ii. Eligibility alternative for members in active service:

Attainment of age 70 with at least one year of service immediately before retirement.

iii. Eligibility for members not in active service at retirement and not in active service on or after October 1, 1999:

Attainment of age 60 and ten years of creditable service.

iv. Eligibility for members not in active service at retirement but in active service on or after October 1, 1999:

Attainment of age 60 and five years of creditable service.

B. Eligibility for Members with Less Than Ten Years of Creditable Service on July 1, 1993

i. Eligibility for members in active service and inactive members:

25 years of creditable service.

ii. Eligibility alternative for members in active service:

Attainment of age 70 with at least one year of service immediately before retirement.

iii. Eligibility for members not in active service at retirement and not in active service on or after October 1, 1999:

Attainment of age 62 with ten years of creditable service.

iv. Eligibility for Members not in active service at retirement but in active service on or after October 1, 1999:

Attainment of age 62 and five years of creditable service.

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C. Eligibility for Members with Less Than Five Years of Creditable Service on July 1, 2011

i. Eligibility for members in active service and inactive members:

   25 years of creditable service.

ii. Eligibility alternative for members in active service:

   Attainment of age 70 with at least one year of service immediately before retirement.

iii. Eligibility for members not in active service at retirement and not in active service on or after October 1, 1999:

   Attainment of age 65 with ten years of creditable service.

iv. Eligibility for Members not in active service at retirement but in Active Service on or after October 1, 1999:

   Attainment of age 65 and five years of creditable service.

Benefit:

Sum of:

(1) for service after November 30, 1984 and before July 1, 1998 and creditable service allowed under Section 1302(3), 2% of average final compensation multiplied by years of service;
(2) for service on or after July 1, 1998, 3% of average final compensation multiplied by years of service; and,
(3) for judicial service prior to December 1, 1984, 75% of November 30, 1984 salary for the position held at retirement, pro-rated for prior service less than ten years.

The benefit is reduced for retirement before age 60 at the rate of approximately 2¼% for each year retirement age is less than 60, for members with at least ten years creditable service on July 1, 1993; reduced for retirement before age 62 by 6% for each year the member's age is less than age 62, if less than ten years creditable service on July 1, 1993, but at least five years creditable service on July 1, 2011; reduced for retirement before age 65 by 6% for each year the member's age is less than age 65, if less than five years creditable service on July 1, 2011.

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Maximum Benefit: Total benefit cannot exceed 70% of average final compensation except as provided under the minimum benefit provision.

Minimum Benefit: For a judge in service and age 50 or older on December 1, 1984, 75% of salary on June 30, 1984 for the position held at retirement, increased by 6% per year from June 30, 1984 to June 30, 1989 or retirement date if earlier, and increased beyond June 30, 1989 by the cost-of-living increase granted the previous September.

Form of Payment: Life annuity; except, for a judge in service and age 50 before December 1, 1984, 50% joint and survivor annuity to surviving spouse.

6. Disability Retirement Benefits Other Than No Age Benefits (See Item 7):

Eligibility: Disabled as defined in the Judicial Retirement Program statutes prior to normal retirement age, employed prior to October 16, 1992 and did not elect the No Age Disability Option, and either disabled in the line-of-duty or disabled with at least five years of creditable service.

Benefit: 66⅔% of average final compensation, reduced by employment earnings over the specified statutory limit, and to the extent that the benefit, in combination with Workers' Compensation and Social Security, exceeds 80% of average final compensation.

Form of Payment: Payment begins on termination of service and ceases on cessation of disability or after two years, unless the member is unable to engage in any substantially gainful activity, in which case payments cease on the earlier of age 70 and the date the service retirement benefit exceeds the disability benefit.

Conversion to Service Retirement: During the period of disability, service is credited and average final compensation is increased at same rate as any cost-of-living adjustments for which the member is eligible (not subject to a cap) (see item 11). On the date when service benefits reach a level of 66⅔% of average final compensation or at age 70, if earlier, the disability converts to a service retirement benefit based on service and average final compensation at that time.

7. No Age Disability Retirement Benefits:

Conditions: Disabled as defined in the Judicial Retirement Program statutes, employed on or after October 16, 1992 or employed prior to October 16, 1992 and elected the provisions of No Age Disability, and either disabled in the line-of-duty or disabled with at least five years of creditable service.

Benefit: 59% of average final compensation, reduced by employment earnings over the specified statutory limit, and to the extent that the benefit, in combination with Workers'

APPENDIX B
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Compensation and Social Security, exceeds 80% of average final compensation. A member in service on November 30, 1984, may elect benefits applicable for retirement before December 1, 1984.

Form of Payment: Payment begins on termination of service and ceases on cessation of disability or after two years, unless the member is unable to engage in any substantially gainful activity; in which case, payments cease on the date the service retirement benefit equals or exceeds the disability benefit.

Conversion to Service Retirement: During the period of disability, service is credited and average final compensation is increased at the same rate as any cost-of-living adjustments for which the member is eligible (not subject to a cap) (see item 11). On the date when service benefits reach a level of 59% of average final compensation, the disability benefit converts to a service retirement benefit based on service and average final compensation at that time.

8. Pre-Retirement Ordinary Death Benefits:

Eligibility: Death while active, inactive eligible to retire, or disabled.

Benefit: Designated beneficiary, spouse, child(ren), or parents entitled to benefit calculated as if deceased member had retired under Option 2 (see item 12); however, beneficiary may elect survivor benefits payable to a surviving spouse, dependent child(ren), parent, or other designated beneficiaries in monthly amounts varying by status of beneficiary and number of eligible survivors. Otherwise accumulated contributions with interest are payable to designated beneficiary, spouse, child(ren), older parents, or estate.

Minimum Benefit: For a judge in service prior to December 1, 1984, one-half of the judge's retirement benefit determined on date of death, payable to the spouse and/or dependent children.

9. Pre-Retirement Accidental Death Benefits:

Eligibility: Death while active or disabled resulting from an injury received in the line-of-duty.

Benefit:

- If the member leaves no dependent children, two-thirds of the member's average final compensation to the surviving spouse until death.
- If the member is survived by a spouse who has the care of dependent child(ren) of the member, the surviving spouse shall receive an annual sum equal to the member's average final compensation while having the care of dependent child(ren). When there are no longer any dependent children, the surviving spouse shall receive two-thirds of member's average final compensation until death.

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- If the member is survived by a spouse who does not have the care of the member's dependent child(ren), the surviving spouse and dependent child(ren) shall share equally an annual sum equal to the member's average final compensation. When there are no longer any dependent child(ren), the surviving spouse shall receive two-thirds of the member's average final compensation until death.

- If the member leaves no spouse, the dependent child(ren) shall share an annual amount equal to the member's average final compensation. Benefits will cease when the last dependent child no longer meets the definition of "dependent child."

10. Refund of Contributions:

Eligibility: Termination of service other than by retirement or death.

Benefit: Member's accumulated contributions with interest.

11. Cost-of-Living Adjustments:

All service and disability retirement and survivor benefits are adjusted each year that there is a percentage change in the Consumer Price Index, based on the Index. If the percentage change is negative, then no adjustment is made in that year. In subsequent years, the adjustment that would have been made will be adjusted downward to the extent necessary to recoup the full actuarial value of not having made the previous year's negative adjustment. This process of adjustment may occur over a multi-year period if needed to recoup the full value of negative changes in the Index.

Cost-of-living adjustments (COLA) are effective September 1 of each year and are applied to that portion of the benefit which is not in excess of a COLA cap whose value grows annually with the same adjustment as the COLA (see values below) for all benefits that have been in payment for at least twelve months as of that date. The maximum annual increase is 3%. Average final compensation used in determining disability benefits for disabled members is similarly adjusted for purposes of determining the recipient's service retirement benefit if and when the recipient moves to service retirement.

COLA Cap History: (value as of September 1 of listed year when COLA effective):
2014 - $20,000.00
2015 - $20,420.00

Members who did not have ten years of service on July 1, 1993 will begin receiving cost-of-living adjustments at the latter of 12 months after their normal retirement age and the first September 1 following a minimum of twelve months of being in receipt of their benefit.

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Minimum benefits are increased 6% per year from July 1985 through June 1989, and as described above thereafter.

12. Methods of Payment of Service Retirement Benefits:

At retirement, a member who retires with a benefit must choose from the following methods of payment:

Full Benefit: Unadjusted benefit paid for the life of the member only.

Option 1: Cash refund equal to the remaining member contribution balance, if any, at the date of death (where the member contribution balance has been reduced each month by the portion of the monthly benefit deemed to be provided by member contributions).

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

Option 4: Joint and survivor annuity at any percentage other than those available under Option 2 and Option 3.

Option 5: Designated percentage of the benefit (not less than 51%) payable to the member, with the remaining percentage (the two to equal 100%) payable to a beneficiary (may only be a sole beneficiary) while both are alive. At the death of either, the higher of the two percentages is paid to the survivor for the survivor's life, and the lower-percentage benefit ceases to be paid.

Option 6:100% joint and survivor annuity (Option 2) with pop-up*.

Option 7: 50% joint and survivor annuity (Option 3) with pop-up.*

Option 8: Option 4 with pop-up*.

* The "pop-up" feature attached to a given Option means that in the case of a beneficiary predeceasing the member, the member's benefit will be revised prospectively to the amount that the benefit would have been had the member selected Full Benefit payment upon retirement.

13. Plan Changes since Prior Valuation:

None.

APPENDIX C
ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

1. **Annual Rate of Investment Return:** 7.125% (net of administrative and investment expenses)

2. **Annual Rate of Salary Increase:** 3.50%

3. **Annual Cost-of-Living Increase:** 2.55%

4. **Rates of Retirement:**

   100% retirement assumed to occur at age 60 for members with at least ten years of creditable service on July 1, 1993.

   For members with less than ten years of creditable service on July 1, 1993, but five or more years of creditable service on July 1, 2011, 50% are assumed to retire each year after reaching age 62, with 100% retirement assumed at age 70.

   For members with less than five years of creditable service on July 1, 2011, 50% are assumed to retire each year after reaching age 65, with 100% retirement assumed at age 70.

5. **Probabilities of Employment Termination at Selected Ages Due to:**

			Death	
Age	**Disability**	**Termination**	**Male**	**Female**
25	.0006	.07	.0003	.0002
30	.0006	.06	.0004	.0002
35	.0007	.05	.0007	.0004
40	.0011	.04	.0010	.0006
45	.0022	.03	.0012	.0009
50	.0042	.02	.0016	.0013
55	.0072	.01	.0027	.0024

6. **Rate of Healthy Life Mortality at Selected Ages:**

Age	Male	Female
55	.0027	.0024
60	.0053	.0047
65	.0103	.0090
70	.0177	.0155
75	.0306	.0249
80	.0554	.0413

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Rates are based on the RP-2000 Combined Healthy Mortality Table for Males and Females, projected with Scale AA to 2015. This assumption was set in 2011 with a margin for future improvement based on the five-year experience study process and will be examined following this valuation based on the experience from 2010 to 2015 to determine the base and projection tables to use for the 2016 valuation forward as well as ascertain the margin for future improvement.

7. Rates of Disabled Life Mortality at Selected Ages:

Age	Male	Female
25	.0092	.0072
30	.0112	.0089
35	.0134	.0109
40	.0160	.0126
45	.0193	.0144
50	.0236	.0165
55	.0295	.0191

Rates are based on the Revenue Ruling 96-7 Disabled Mortality Table for Males and Females.

8. Family Composition Assumptions:

80% of active members are married and have two children born when the member is 24 and 28; children are dependent until age 18; female spouse is three years younger than male spouse; member has no dependent parents; unmarried members have beneficiaries entitled to benefits worth 80% as much as those of married members' beneficiaries.

9. Rationale for Actuarial Assumptions:

The assumptions were adopted by the Trustees as a result of the latest experience study review performed in 2011, covering the period July 1, 2005 through June 30, 2010.

The Board continually reviews the investment return and inflation assumptions and adopted a reduced rate of 7.125%, effective with the 2014 valuation, at the advice of its investment consultants.

10. Assumption Changes since Last Valuation:

None.

APPENDIX C
ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Funding Method:

The entry age normal actuarial funding method is used to determine costs. Under this funding method, the total employer contribution rate consists of two elements: the employer normal cost rate and the unfunded actuarial liability (UAL) rate.

Under this method, the actuarial present value of the projected benefits of each active included in the valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to the year beginning on the valuation date is called the normal cost. For each active, the normal cost is determined by taking the value, as of entry age into the Program, of the member's projected benefits, reduced by the value of future member contributions, and then dividing it by the value, also as of the member's entry age, of the member's expected future salary. This rate is then multiplied by the member's salary at the valuation date to produce the normal cost for each member, which are then aggregated across all members to get the total normal cost for the Program. This total normal cost is then divided by the total salary for the Program at the valuation date to get the normal cost rate for the Program.

The portion of the actuarial present value not provided for at the valuation date by the actuarial present value of the future normal costs is called the actuarial liability. The unfunded actuarial liability is defined as the total actuarial liability at the valuation date less the actuarial value of Program assets at the valuation date. Contributions are made to fund this unfunded actuarial liability (UAL). The UAL rate for this program is developed by amortizing the unfunded liability over an open ten-year period, assuming these amortization payments increase over the previous year at a rate of 3.50% per year. The resulting amortization for the year beginning on the valuation date is then divided by the total payroll for the Program to develop the UAL rate.

The total rate for the Program is produced by adding the normal cost rate and the UAL rate, subject to the requirement that the total rate cannot be less than 0%.

By using an open amortization period, this funding method results in the expectation that any unfunded liability in the Program as of a valuation date will never be fully reduced to zero if all of the valuation assumptions are exactly met.

APPENDIX C
ACTUARIAL ASSUMPTIONS AND METHODS

2. Asset Valuation Method:

For purposes of determining the State contribution to the Program and the Program's funded ratio, we use an actuarial value of assets. The asset adjustment method dampens the volatility in asset values that could occur because of fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process.

In determining the actuarial value of assets, we calculate an expected actuarial value based on cash flow for the year and imputed returns at the actuarial assumption. This expected value is compared to the market value and one-third of the difference is added to the preliminary actuarial value to arrive at the final actuarial value.

Please refer to the Maine Public Employees Retirement System State Employee and Teacher Retirement Program Actuarial Valuation Report as of June 30, 2015 for additional information about the actuarial value of assets, including its development.

3. Changes since Last Valuation:

None.

APPENDIX D
GLOSSARY OF GASB TERMS

1. **Actuarially Determined Contribution**

   A target or recommended contribution for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

2. **Actuarial Valuation Date**

   The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

3. **Deferred Inflow of Resources**

   An acquisition of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience gains on the Total Pension Liability, assumption changes reducing the Total Pension Liability, or investment gains that are recognized in future reporting periods.

4. **Deferred Outflow of Resources**

   A consumption of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience losses on the Total Pension Liability, assumption changes increasing the Total Pension Liability, or investment losses that are recognized in future reporting periods.

5. **Entry Age Normal Actuarial Cost Method**

   The actuarial cost method required for GASB 67 and 68 calculations. Under this method, the actuarial present value of the projected benefits of each individual, included in an actuarial valuation, is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Service Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future service costs is called the Total Pension Liability.

6. **Measurement Date**

   The date as of which the Total Pension Liability and Plan Fiduciary Net Position are measured. The Total Pension Liability may be projected from the Actuarial Valuation Date to the Measurement Date. The Measurement Date must be the same as the Reporting Date for the plan.

APPENDIX D
GLOSSARY OF GASB TERMS

7. Net Pension Liability

The liability of employers and non-employer contributing entities for employees for benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Plan Fiduciary Net Position.

8. Plan Fiduciary Net Position

The fair or market value of assets.

9. Reporting Date

The last day of the Plan or employer's fiscal year.

10. Service Cost

The portion of the actuarial present value of projected benefit payments that is attributed to the current period of employee service in conformity with the requirements of GASB 67 and 68. The Service Cost is the normal cost calculated under the entry age normal actuarial cost method.

11. Total Pension Liability

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of GASB 67 and 68. The Total Pension Liability is the actuarial liability calculated under the entry age normal actuarial cost method.

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