



## **Maine Judicial Retirement Program**

### **Actuarial Valuation Report as of June 30, 2014**

**Produced by Cheiron**

**August 2015**

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August 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 revised June 30, 2014 Actuarial Valuation Report for the Maine Judicial Retirement Program of the Maine Public Employees Retirement System (System). Please note this report replaces the prior version dated October 31, 2014 and reflects changes in the financial disclosure information. 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 Judicial Retirement Program, as well as the required accounting statement disclosures under the Governmental Accounting Standards Board (GASB) Statement No. 67.

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, employee 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. This valuation report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

Sincerely,  
Cheiron



Gene Kalwarski, FSA, EA  
Principal Consulting Actuary



Fiona E. Liston, FSA, EA  
Principal Consulting Actuary

## INTRODUCTION

This report presents the results, as of June 30, 2014, 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, liabilities, and accounting disclosure information. 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 FY 2016 and FY 2017 were based on the liabilities of the 2013 valuation adjusted for anticipated growth in benefits and reductions due to 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, 2014 valuation will be used primarily for accounting disclosures. Next year's June 30, 2015 valuation will be 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, 2013 valuation was 17.23% of payroll. The rate produced by this valuation is 14.25% of payroll, including reflecting a change in the assumed rate of investment return used to value liabilities (from 7.25% to 7.125%), a gain in investment returns, action taken to recognize an additional amount of past deferred assets gain in order to offset the change in investment return assumption, and a gain in liabilities.

This report reflects the change in pension accounting requirements from GASB Statement No. 25 to GASB Statement No. 67.

Please refer to the Maine Public Employees Retirement System State Employee and Teacher Retirement Program Actuarial Valuation Report as of June 30, 2014 for the reconciliation of the market value of assets and the calculation of the actuarial value of assets.

MAINE JUDICIAL RETIREMENT PROGRAM  
ACTUARIAL VALUATION AS OF JUNE 30, 2014

**APPENDIX A**  
**PARTICIPANT DATA, COSTS, AND ACCOUNTING INFORMATION**

**Valuation Results as of June 30, 2014**

**A. Participant Data**

Number of:

Active Members	60
Retired Members	47
Beneficiaries of Retirees	19
Survivors of Deceased Members	0
Disabled Members	1
Deferred "Vested" Members	2
Inactives Due Refunds	1
<b>Total</b>	<b>130</b>

Annual Salaries of Active Members*	\$ 6,688,159
Annual Payments to Benefit Recipients	\$ 3,250,749

**B. Cost Results**

Employer Normal Cost**	<b>15.79%</b>
Unfunded Actuarial Liability	<b>(1.54%)</b>
Total Cost	<b>14.25%</b>

**C. Valuation Results**

1. Calculation of Unfunded Actuarial Liability	
a. Actuarial Liability	
- Retirees and beneficiaries currently receiving benefits and terminated vested employees not yet receiving benefits	\$ 28,785,537
- Current employees	
-- Accumulated employee contributions including allocated investment earnings	9,466,378
-- Employer-financed vested	13,962,695
-- Employer-financed nonvested	2,346,032
- Total Actuarial Liability (AL)	\$ 54,560,642
b. Actuarial Value of Assets (AVA)	55,419,017
c. Unfunded Actuarial Liability (UAL)	(\$ 858,375)
2. Other Information	
a. Market Value of Assets (MVA)	\$ 57,189,900
b. Unfunded Liability, (not less than \$0)	\$ 0
c. Amortization Period	10 Years

\*For the fiscal year ending 2015

\*\*Employer Normal Cost includes Retirement Benefits, Disability, and Survivor Benefit costs

**APPENDIX A**  
**PARTICIPANT DATA, COSTS, AND ACCOUNTING INFORMATION**

Prior to the current plan year, Statement No. 25 of the Governmental Accounting Standards Board (GASB) established standards for disclosure of pension information by the public employee retirement systems (PERS) and Statement No. 27 established similar standards for governmental employers who sponsor PERS in their notes to financial statements and supplementary information.

GASB No. 25 was replaced by GASB No. 67 effective June 30, 2014 for the Maine Public Employees Retirement System (MainePERS) disclosures. We have prepared the following exhibits under the provisions of GASB Statement No. 67:

- Schedule of Changes in Net Pension Liability and Related Ratios
- Sensitivity of Net Pension Liability to Changes in Discount Rate
- Schedule of Employer Contributions
- Notes to Schedule
- Key Methods and Assumptions Used to Determine Contribution Rates
- Total Expected Future Service

While GASB No. 25 is no longer applicable for the MainePERS disclosures, the requirements of GASB Statement No. 27 currently remain in effect for employers. For employers with June 30 fiscal years, such as the State of Maine, GASB No. 68 will replace GASB No. 27 effective for the fiscal year ending June 30, 2015.

A summary of the terminology used in GASB Statements Nos. 67 and 68 are provided in Appendix D of this report.

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**PARTICIPANT DATA, COSTS, AND ACCOUNTING INFORMATION**

The table below shows the changes in the Total Pension Liability, the Plan Fiduciary Net Position, (i.e., fair value of Plan assets), and the Net Pension Liability during the Measurement Year as calculated under the provisions of GASB Statement No. 67.

There were no changes in benefits during the year, but the schedule does show the impact of reducing the investment return assumption.

<b>Schedule of Changes in Net Pension Liability and Related Ratios</b>	
<b>FYE 2014</b>	
<b><u>Total Pension Liability</u></b>	
Service Cost	\$ 1,517,873
Interest (includes interest on service cost)	3,736,568
Changes of Benefit Terms	17,007
Differences Between Actual and Expected Experience	(292,261)
Changes of Assumptions	426,150
Benefit Payments, Including Refunds of Member Contributions	<u>(3,219,480)</u>
<b>Net Change in Total Pension Liability</b>	<b>2,185,857</b>
<b>Beginning Total Pension Liability</b>	<b><u>52,374,785</u></b>
<b>Ending Total Pension Liability</b>	<b><u>\$ 54,560,642</u></b>
<b><u>Plan Fiduciary Net Position</u></b>	
Employer Contributions	\$ 932,223
Member Contributions	528,192
Net Investment Income	8,416,042
Benefit Payments, Including Refunds of Member Contributions	(3,219,480)
Administrative Expense	<u>(41,681)</u>
Net Change in Plan Fiduciary Net Position	\$ 6,615,296
Beginning Plan Fiduciary Net Position	<b><u>50,574,604</u></b>
Ending Plan Fiduciary Net Position	<b><u>\$ 57,189,900</u></b>
Ending Net Pension Liability	<b><u>(\$ 2,629,258)</u></b>
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	104.82%
Covered Employee Payroll*	\$ 6,742,444
Net Pension Liability as a Percentage of Covered Payroll	(39.00%)

\*For the fiscal year ending 2014.

Total contributions and investment income exceeded the service cost, interest cost, and administrative expenses, resulting in a decrease in the Net Pension Liability (NPL) of approximately \$4.4 million, including the net pension liability changing from being positive to negative, or in other words, having a surplus.

**APPENDIX A**  
**PARTICIPANT DATA, COSTS, AND ACCOUNTING INFORMATION**

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.

<b>Sensitivity of Net Pension Liability to Changes in Discount Rate</b>			
	<b>1% Decrease 6.125%</b>	<b>Discount Rate 7.125%</b>	<b>1% Increase 8.125%</b>
Total Pension Liability	\$ 59,358,162	\$ 54,560,642	\$ 50,379,798
Plan Fiduciary Net Position	<u>57,189,900</u>	<u>57,189,900</u>	<u>57,189,900</u>
Net Pension Liability	<u>\$ 2,168,262</u>	<u>\$ (2,629,258)</u>	<u>\$ (6,810,102)</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	96.3%	104.8%	113.5%

A one percent decrease in the discount rate increases the TPL by approximately 9% and increases the NPL by approximately 182%. A one percent increase in the discount rate decreases the TPL by approximately 8% and decreases the NPL by approximately 159%.

<b>Schedule of Employer Contributions Last 10 Fiscal Years Exhibit Will Build to Reach 10 Years Starting with 2014 Judges</b>	
Actuarially Determined Contribution (ADC)	\$ 932,223
Contributions in Relation to the ADC	<u>932,223</u>
Contribution Deficiency/(Excess)	<u>\$ 0</u>
Covered Employee Payroll*	\$ 6,742,444
Contributions as a Percentage of Covered Employee Payroll	13.83%

\*For the fiscal year ending 2014

**APPENDIX A**  
**PARTICIPANT DATA, COSTS, AND ACCOUNTING INFORMATION**

**Notes to Schedule**

Valuation Date: 6/30/2014

Timing: Actuarially determined contribution rates are calculated based on a 2012 actuarial valuation developed as a roll-forward of the 2011 actuarial valuation, adjusted for expected experience and any assumption or methodology changes during FYE 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 percent 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% plus merit component based on employee's years of service

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, 2014 can be found in the June 30, 2012 actuarial valuation report.

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GASB 68 requires some items be recognized into expense with 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 measurement period ending on June 30, 2014, these values are thus developed as of June 30, 2013 as the beginning of the measurement period. The table below shows the development of this average remaining service life for this plan, including reflection of the decision to round to the nearest whole year.

<b>Table V-5</b>			
<b>Total Expected Future Service</b>			
<b>Status</b>	<b>Total Expected Future Service</b>	<b>Count</b>	<b>Average Remaining Service Life</b>
Actives	280	60	5
In Pay	0	65	0
Deferred “Vested” Members	0	0	0
Inactives Due Refunds	<u>0</u>	<u>1</u>	<u>0</u>
Total Membership	280	126	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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**SUMMARY OF PLAN PROVISIONS**

**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.

**APPENDIX B**  
**SUMMARY OF PLAN PROVISIONS**

*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.

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

**APPENDIX B**  
**SUMMARY OF PLAN PROVISIONS**

Minimum Benefit: For a judge in service and age 50 or older on December 1, 1984, 75% of salary on 6/30/84 for the position held at retirement, increased by 6% per year from 6/30/84 to 6/30/89 or retirement date if earlier, and increased beyond 6/30/89 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):**

Conditions: Disabled as defined in the Judicial Retirement Program statutes, prior to normal retirement age; employed as a judge prior to October 16, 1992, and did not elect No Age Disability Option.

Benefit: 66-2/3% of average final compensation, reduced by employment earnings over the specified statutory limit, and to the extent that the benefit, in combination with Worker's 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, average final compensation is increased with cost-of-living adjustments and service is credited. On the date when service benefits reach a level of 66-2/3% of average final compensation, or at age 70 if earlier, the disability benefit converts to a service retirement benefit based on service and pay at that point.

**7. No Age Disability Retirement Benefits:**

Conditions: Disabled as defined in the Judicial Retirement Program statutes; employed as a judge on or after October 16, 1992 or a judge employed prior to October 16, 1992, who elected the provisions of No Age Disability.

Benefit: 59% of average final compensation, reduced by the amount by which employment earnings plus the disability allowance exceeds the current salary of the position held at disability, and to the extent that the benefit, in combination with Worker's Compensation 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

**APPENDIX B**  
**SUMMARY OF PLAN PROVISIONS**

gainful activity; in which case payments cease on the date the service retirement benefit exceeds the disability benefit.

Conversion to Service Retirement: During the period of disability, average final compensation is increased with cost-of-living adjustments and service is credited. 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 pay at that point.

**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), parents, 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 parent, 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 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. When there is no longer any dependent child, the surviving spouse shall receive two-thirds of member's average final compensation until death.
- 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 is no longer any dependent child, the surviving spouse shall receive two-thirds of member's average final compensation until death.
- If the member leaves no spouse, the dependent child(ren) shall be paid 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."

**APPENDIX B**  
**SUMMARY OF PLAN PROVISIONS**

**10. Refund of Contributions:**

Eligibility: Termination of service without 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 the non-zero COLA.

Cost-of-living adjustments are effective September 1 and are applied to that portion of the benefit not in excess of \$20,000 (indexed) for all benefits that have been in payment for 12 months. 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.

Members on service retirement who did not have ten years of service on July 1, 1993 will not receive a cost-of-living adjustment until 12 months after their normal retirement age.

No cost-of-living adjustments will be made until September 2014.

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 must choose from the following methods of payment:

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

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

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

**APPENDIX B**  
**SUMMARY OF PLAN PROVISIONS**

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 Last Valuation:**

None.

**APPENDIX C  
 ACTUARIAL ASSUMPTIONS AND METHODS**

**A. Actuarial Assumptions**

- 1. Annual Rate of Investment Return:** 7.125%
- 2. Annual Rate of Salary Increase:** 3.50%
- 3. Annual Cost-of-Living Increase:** 2.55%
- 4. Normal Retirement Age:**

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, 50% are assumed to retire each year after reaching age 62.

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.

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

Age	Disability	Termination	Death	
			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

Rates are based on the RP-2000 Mortality Table for Males and Females, projected with Scale AA to 2015.

**APPENDIX C**  
**ACTUARIAL ASSUMPTIONS AND METHODS**

**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. Date of Adoption of 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.

**10. Assumption Changes since Last Valuation:**

The rate of investment return assumption was changed from 7.25% to 7.125%.

**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 normal cost rate and the unfunded actuarial liability (UAL) rate.

The normal cost rate is developed for each active employee. This rate is determined by taking the value, as of entry age into the plan, of the member's projected future benefits, reducing it by the value of future member contributions, and dividing it by the value, also as of the member's entry age, of the member's expected future salary.

In addition to contributions required to meet the plan's normal cost, contributions will be required to fund the plan's unfunded actuarial liability. The actuarial liability is defined as the present value of future benefits, less the present value of future normal costs and future member contributions. The unfunded actuarial liability is the total actuarial liability less the actuarial value of plan assets.

The unfunded liability is amortized by annual payments over an open ten-year period. The payments are determined so that they will be a level percentage of pay, assuming total pay increases 3.50% per year.

**2. Asset Valuation Method:**

For purposes of determining the State contribution to the plans in the Program, 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.

In the 2014 valuation, there was an additional recognition of 37.5% of the remaining balance of past investment gains.

**3. Changes since Last Valuation:**

There was an additional recognition of 37.5% of the past investment gains in the asset smoothing method.

**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 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 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 actuarial cost method.