Classic Values, Innovative Advice

Maine Public Employees Retirement System Judicial Retirement Program

Actuarial Valuation Report as of June 30, 2016

Produced by Cheiron

October 2016

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October 28, 2016

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, 2016 Actuarial Valuation Report for the Maine Judicial Retirement Program of the Maine Public Employees Retirement System (MainePERS). This report is for the use of the MainePERS 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, 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

Cheiron has completed the Actuarial Valuation Report of the Maine Public Employees Retirement System Judicial Retirement Program (Program) as of June 30, 2016. The purpose of this report is to:

1) Measure and disclose, as of the valuation date, the financial condition of the Program;

2) Compare the current financial condition of the Plan to that in the prior year's valuation and reconcile the differences;

3) Report on the employer contribution rates developed in this valuation for informational purposes (the actual contributions to be paid by the employers for Fiscal Year (FY) 2016 were developed in July 2014, based on a roll forward of the June 30, 2013 valuation); and

4) Provide specific information and documentation required for MainePERS's financial disclosures.

An actuarial valuation establishes and analyzes assets and liabilities on a consistent basis, and traces the progress of both from one year to the next. It includes measurement of investment performance as well as an analysis of actuarial liability gains and losses.

Section I presents a summary containing our key findings.

Section II contains details on various asset measures.

Section III shows similar information on liability measures for various purposes, including analysis of key changes in the measures.

Section IV develops the employer contribution rates to be compared to those actually established during the budgeting process.

Section V includes financial disclosure information.

Finally, at the end of this report we present appendices that contain a summary of the:

- Program membership at the valuation date (Appendix A);
- Actuarial methods and assumptions used in the valuation (Appendix B);
- Major benefit provisions of the Program (Appendix C); and
- Terminology used in the Governmental Accounting Standards Board (GASB) disclosures provided as a glossary (Appendix D).

SECTION I - BOARD SUMMARY

General Comments

The annual employer contribution to this Program is determined on a biennial basis. The contributions developed through the State's budgeting process to produce the applicable contributions in FY 2017 were based on the liabilities of the June 30, 2013 valuation, adjusted for anticipated growth in benefits and reductions due to payouts to reflect our best estimate of the June 30, 2014 liability together with the June 30, 2014 preliminary asset information available during the ratemaking process. The contributions developed through the State's budgeting process to produce the applicable contributions in FY 2018 were based on the liabilities of the June 30, 2015 valuation, adjusted for recently adopted changes in assumptions, anticipated growth in benefits and reductions due to payouts to reflect our best estimate of the June 30, 2016 liability together with the June 30, 2016 preliminary asset information available during the ratemaking process. This adjustment process also reflects any change in assumptions or plan provisions between the valuation date and the date the contributions will be made. The results of this June 30, 2016 valuation will be used primarily for accounting disclosures. Next year's June 30, 2017 valuation will be used as the basis for the applicable FY 2020 and FY 2021 State budget contributions.

Experience from July 1, 2015 through June 30, 2016 (FY 2016)

The State of Maine employer rate produced by the June 30, 2015 valuation for the Judicial Retirement Program was 15.58% of payroll. The same rate produced in this valuation is 11.34% of payroll. The change in contribution rate was attributable to several elements, including a loss in investment returns, a gain in liabilities, the transfer in of assets and liability due to service portability (including transfer of assets to account for service that was already recognized in the 2015 valuation), and a change in several of the actuarial assumptions. Details on the assumption changes can be found in a separate report.

As of June 30, 2016, the Program had an unfunded actuarial liability (UAL) of $(0.545) million. This represents a decrease of $2.382 million from the $1.837 million UAL measured as of June 30, 2015. The specific factors contributing to this change are presented in Table I-1 below.

Table I-1

$ in Millions	Liabilities	Assets*	UAL
Value as of June 30, 2015	$ 58.912	$ 57.075	$ 1.837
Expected Change	2.048	2.578	(0.530)
Impact of Assumption Changes	2.490	0.000	2.490
Change in Plan	2.017	6.342	(4.325)
Recognized Investment Loss	0.000	(1.729)	1.729
Recognized Liability Gain	(1.746)	0.000	(1.746)
Value as of June 30, 2016	$ 63.721	$ 64.266	$ (0.545)

* Demonstration uses the actuarial value of assets. Results would be different if the market value was used.

SECTION I - BOARD SUMMARY

Principal Results Summary

The balance of this Board Summary section of the Actuarial Valuation Report presents a summary of the principal results of the valuation, comparing key results between this year's valuation and last year's for member counts, assets and liabilities, and contribution rates.

Table I-2
Summary of Principal Results
Judicial Retirement Program

Valuation as of:	June 30, 2015	June 30, 2016	% Change
Member Counts			
Active Members	56	62	10.7%
Retired Members	49	51	4.1%
Beneficiaries of Retired Members	21	22	4.8%
Survivors of Deceased Members	0	0	0.0%
Disabled Members	1	1	0.0%
Deferred Vested Members	3	2	(33.3%)
Inactives Due Refunds	1	1	0.0%
Total Membership	131	139	6.1%
Annual Payroll of Active Members	$ 6,851,612	$ 7,184,400	4.9%
Annual Payments to Benefit Recipients	$ 3,401,651	$ 3,597,415	5.8%
Assets and Liabilities			
Actuarial Liability (AL)	$ 58,911,617	$ 63,721,271	8.2%
Actuarial Value of Assets (AVA)	57,074,951	64,265,782	12.6%
Unfunded Actuarial Liability (UAL)	$ 1,836,666	$ (544,511)	(129.6%)
AVA Funding Ratio (AVA/AL)	96.9%	100.9%	
MVA Funding Ratio (MVA/AL)	95.6%	95.6%	
Accrued Benefit Liability (PVAB)	$ 55,946,262	$ 59,602,247	6.5%
Market Value of Assets (MVA)	56,340,825	60,890,109	8.1%
Unfunded PVAB	$ (394,563)	$ (1,287,862)	226.4%
Accrued Benefit Funded Ratio	100.7%	102.2%	
Contributions as a Percentage of Payroll			
Employer Normal Cost Rate	12.36%	12.27%	
UAL Rate	3.22%	(0.93%)	
Total Employer Rate	15.58%	11.34%	
From 2014 Ratemaking (FY16/FY17)	14.99%	14.98%	
From 2016 Ratemaking (FY18/FY19)	14.94%	14.94%	

SECTION II - ASSETS

Pension plan assets play a key role in the financial operation of plans and in the decisions Trustees make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact benefit levels, employer contribution rates, and the ultimate security of members' benefits.

The assets for all of the defined benefit plans administered by MainePERS are commingled for investment purposes, with the adopted actuarial smoothing methodology applied to the market value of the total MainePERS DB assets. This produces an asset ratio (total MainePERS actuarial value of assets divided by total MainePERS market value of assets) that is then applied to the market value of assets attributable to each of the programs to determine their actuarial value of assets as of the valuation date. The asset ratio derived in this June 30, 2016 valuation as shown in Table II-1 below is 1.055439 ($ 13,112,869,070 ÷ $ 12,424,092,601). The allocation of actuarial value of the total MainePERS DB assets to each of the MainePERS DB programs based on this asset ratio is shown in the following chart.

Table II-1
Allocation of Actuarial Value of Total MainePERS DB Assets as of June 30, 2016

	Market Value	Actuarial Value
Teachers	$ 6,665,703,555	$ 7,035,241,991
State (Regular & Special)	3,294,631,835	3,477,282,187
Judges	60,890,109	64,265,782
Legislators	10,806,661	11,405,769
Participating Local Districts (Consolidated & Non-Consolidated)	2,392,060,441	2,524,673,341
Total	$ 12,424,092,601	$ 13,112,869,070

For a full reconciliation of the Market Value of Assets and the development of the Actuarial Value of Assets, see the State Employee and Teacher Retirement Program Actuarial Valuation as of June 30, 2016.

SECTION III - LIABILITIES

In this section, we present detailed information on liabilities including:

- Disclosure of program liabilities at June 30, 2015 and June 30, 2016; and
- Statement of changes in these liabilities during the year.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the purpose for which the figures are ultimately used.

- Present Value of Future Benefits (PVB): Used for analyzing the overall financial obligations of the Program, this represents the amount of money needed today to fully fund all future benefits of the Program, assuming active participants continue to earn salary increases and accrue benefits under their current plan provisions and assuming all actuarial assumptions are exactly met, including the 6.875% per year investment return.

- Actuarial Liability (AL): Used for funding calculations and GASB disclosures, this liability is calculated taking PVB above and subtracting the value of accruals that are assigned to future years on a person-by-person basis. This offset is equal to the present value of future member contributions and future employer normal cost contributions under an acceptable actuarial funding method. For this Program and the other MainePERS defined benefit plans, this method is referred to as the entry age normal (EAN) funding method.

- Present Value of Accrued Benefits (PVAB): Used for communicating the liabilities for benefits accrued as of the valuation date.

Table III-1 on the following page discloses each of these liabilities for the current and prior years' valuations. With respect to the actuarial liability and the present value of accrued benefits, a subtraction of the appropriate value of plan assets yields, for each respective type, a net surplus or an unfunded liability.

We note that none of the liabilities presented in this report is an appropriate measure of the settlement liability.

The present value of future benefits (PVB) is compared to the current market value of assets, the expected future value of member contributions, and the expected future value of total employer contributions. The future employer contribution is calculated as the employer contribution rate developed in each valuations times the expected future payroll of the active population as of the valuation date. The difference between the PVB and these anticipated resources indicates either an expected shortfall or an expected surplus representing either additional funding or excess funding required on the payroll of new hires to pay for benefits of existing members. This surplus or shortfall indicates the size of the Program's stored gains or losses that remain outside of the valuation process. These gains or losses may enter the rate-making process depending on the future investment performance.

SECTION III - LIABILITIES

Table III-1
Disclosure of Liabilities

	June 30, 2015	June 30, 2016
Present Value of Benefits (PVB)		
Active Member Benefits	$ 33,440,903	$ 36,060,954
Retiree Benefits	29,093,440	32,795,990
Terminated (Vested & Nonvested) Benefits	1,329,240	622,298
Total PVB	**$ 63,863,583**	**$ 69,479,242**
Market Value of Assets (MVA)	$ 56,340,825	$ 60,890,109
Future Member Contributions	2,079,717	2,311,065
Future Employer Contributions Assuming No Further Gains or Losses or New Hires	5,196,836	3,162,256
Projected (Surplus)/Shortfall	246,205	3,115,812
Total Resources	**$ 63,863,583**	**$ 69,479,242**
Actuarial Liability (AL)		
Present Value of Benefits (PVB)	$ 63,863,583	$ 69,479,242
Present Value of Future Normal Costs (PVFNC)		
Employer Portion	2,872,249	3,446,906
Member Portion	2,079,717	2,311,065
Actuarial Liability (AL = PVB – PVFNC)	**$ 58,911,617**	**$ 63,721,271**
Actuarial Value of Assets (AVA)	57,074,951	64,265,782
Net (Surplus)/Unfunded (AL – AVA)	**$ 1,836,666**	**$ (544,511)**
Present Value of Accrued Benefits		
Present Value of Future Benefits (PVB)	$ 63,863,583	$ 69,479,242
Present Value of Future Benefit Accruals (PVFBA)	7,917,321	9,876,995
Accrued Liability (PVAB = PVB – PVFBA)	**$ 55,946,262**	**$ 59,602,247**
Market Value of Assets (MVA)	56,340,825	60,890,109
Net (Surplus)/Unfunded (PVAB – MVA)	**$ (394,563)**	**$ (1,287,862)**

SECTION III - LIABILITIES

Changes in Liabilities

Each of the liabilities disclosed in the prior table is expected to change at each subsequent valuation. The components of these changes, depending upon which liability is analyzed, can include:

- New plan participants since the last valuation
- Benefits accrued since the last valuation
- Plan amendments changing benefits since the last valuation
- Passage of time, which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected since the last valuation
- A change in actuarial assumptions since the last valuation
- A change in the actuarial funding method since the last valuation

Unfunded liability measurements will change because of all of the above, as well as due to changes in Program asset measurements resulting from:

- Employer contributions being different than expected
- Investment earnings being different than expected
- A change in the method used to measure Program assets in developing the unfunded liability measure since the last valuation

In each valuation, we report on those elements of change in program liability measures that are of particular significance, potentially affecting the long-term financial outlook of the Program. In Table III-2 below, we present key changes in Program liability measures since the last valuation.

Table III-2

	Present Value of Future Benefits	Actuarial Liability	Present Value of Accrued Benefits
Liability Measurement – June 30, 2015	$ 63,863,583	$ 58,911,617	$ 55,946,262
Liability Measurement – June 30, 2016	69,479,242	63,721,271	59,602,247
Liability Measurement Increase (Decrease) Due to:	$ 5,615,659	$ 4,809,654	$ 3,655,985
Plan Amendment	$ 871,099	$ 2,016,584	$ 938,770
Assumption Change	2,284,794	2,489,800	1,980,482
Actuarial (Gain)/Loss	N/C	(1,745,956)	N/C
Benefits Accumulated and Other Sources	$ 2,459,766	$ 2,049,226	$ 736,733

N/C = Not calculated

SECTION IV - CONTRIBUTIONS

In this section, we present detailed information on employer contribution rates as developed in this June 30, 2016 valuation for the Program, including development of the employer contribution rate, including the employer normal cost rate and the unfunded actuarial liability (UAL) rate.

Note that these contribution rates are only informational and the actual contribution rates are set by the budgeting process described in the Board Summary at the beginning of this report.

Description of Rate Components

For this Program, the funding methodology employed is the entry age normal funding method. Under this method, there are two components to the total contribution: the normal cost rate (NC rate), and the unfunded actuarial liability rate (UAL rate).

An individual entry age normal cost rate is determined for each active member. The normal cost is determined by the following steps. First, an individual normal cost rate is determined by taking the value, as of entry age into a plan, of each active member's projected future benefit. Second, this value is then divided by the value, also at entry age, of the member's expected future salary. Finally, the rate is reduced by the member contribution rate to produce the employer normal contribution rate. These rates are then multiplied by each member's salary as of the valuation date and added together to get the total normal cost dollars as of the valuation date for that plan and then divided by the total payroll at the valuation for the plan to get the normal cost rate for that plan.

The unfunded actuarial liability under the entry age normal funding method equals the present value, at the time of valuation, of the future benefit payments less the present value of future employer normal cost contributions, future member contributions, and current assets. The UAL rate determined is the percentage that applied to member payroll is expected to amortize the UAL according to the Program's amortization policy, which is 10 years.

Contribution Calculations

Table IV-1 below presents and compares the composite total employer contribution rate, as well as its two components, for the Program as developed in this valuation and the prior one.

Table IV-1
Judicial Total Employer Rate

Valuation Date	June 30, 2015	June 30, 2016
Employer NC Rate	12.36%	12.27%
UAL Rate	3.22%	(0.93%)
Total Employer Rate	15.58%	11.34%

The rates developed in this section are for valuation purposes only. Actual budgeted rates are set based on the process described in the Board Summary section.

SECTION V - FINANCIAL DISCLOSURE INFORMATION

This section contains financial disclosure information regarding the Program developed under a number of accounting standards and guidance.

First, for informational purposes, we show the Program's funded status under the Financial Accounting Standards Board (FASB) ASC Topic 960, which discloses how the market value of assets would compare to accrued liabilities if contributions were to stop and accrued benefit claims had to be satisfied as of the valuation date. However, due to potential legal requirements and the possibility that alternative interest rates would have to be used to determine the liabilities, these values may not be a good indication of the amount of money it would take to buy the benefits for all members if all plans in the Program were to terminate. We have prepared the following exhibit in this section based on FASB ASC Topic 960:

- Table V-1: Accrued Benefits Information

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 V-2: Schedule of Changes in Net Pension Liability and Related Ratios
- Table V-3: Sensitivity of Net Pension Liability to Changes in Discount Rate
- Table V-4: Schedule of Employer Contributions
- Table V-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, Table V-5 included in this section is only applicable to GASB No. 68. Additional information necessary for disclosures under Statement No. 68 is provided under separate cover.

Finally, we have also developed disclosure information in this section based on additional guidance relating to Comprehensive Annual Financial Reports (CAFRs) of PERS provided by the Government Finance Officers Association (GFOA) in their publication, *Governmental Accounting, Auditing, and Financial Reporting* (GAAFR). We have prepared the following exhibits reflecting guidance in the GAAFR:

- Table V-6: Analysis of Financial Experience
- Table V-7: Solvency Test

The present value of accrued benefits, the total pension liability (GASB 67/68), and the actuarial liability (GAAFR) disclosures in this section are all determined assuming that the Program is ongoing and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities as of June 30, 2016 are discounted at the assumed valuation

SECTION V - FINANCIAL DISCLOSURE INFORMATION

interest rate of 6.875% per annum in all of these disclosures. The June 30, 2015 amounts used the prior year's assumption of 7.125%.

Table V-1 below includes the relevant amounts as of June 30, 2015 and June 30, 2016 as well as reconciliation between the two dates under FASB ASC Topic 960. The plan changes number represents the liability transferred in due to portability of service calculations.

Table V-1
Accrued Benefits Information

	June 30, 2015	June 30, 2016
FASB ASC Topic 960 Basis		
1. Present Value of Benefits Accrued to Date (PVAB)		
a. Members Currently Receiving Payments	$ 29,093,440	$ 32,795,990
b. Vested Terminated Members	1,329,240	622,298
c. Active Members	25,523,582	26,183,959
d. Total PVAB	$ 55,946,262	$ 59,602,247
2. Market Value of Assets (MVA)	56,340,825	60,890,109
3. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero	$ 0	$ 0
4. Ratio of MVA to PVAB (2)/(1)(d)	100.7%	102.2%

Change in Present Value of Benefits Accrued to Date during FY 2016

Increase (Decrease) During Year Attributable to:	
Passage of Time	$ 4,004,671
Benefits Paid	(3,501,911)
Assumption Changes	1,980,482
Plan Changes	938,770
Benefits Accrued, Other Gains/Losses	233,973
Net Increase (Decrease)	$ 3,655,985

SECTION V - FINANCIAL DISCLOSURE INFORMATION

Table V-2 below shows the changes in the total pension liability (TPL), the plan fiduciary net position (FNP) (i.e., fair value of Program net assets), and the net pension liability (NPL) during the measurement year ending June 30, 2016 and related ratios as calculated under the provisions of GASB Statement No. 67 for the Program. The change of benefit terms represents the liability transferred in due to portability of service calculations.

Table V-2
Schedule of Changes in Net Pension Liability and Related Ratios
FY 2016

Total Pension Liability (TPL)	
Service Cost	$ 1,396,704
Interest (Includes Interest on Service Cost)	4,154,433
Changes of Benefit Terms	2,016,584
Differences Between Actual and Expected Experience	(1,745,956)
Changes of Assumptions	2,489,800
Benefit Payments, Including Refunds of Member Contributions	(3,501,911)
Net Change in TPL	**4,809,654**
Beginning of Year TPL	**58,911,617**
End of Year TPL	**$ 63,721,271**
Plan Fiduciary Net Position (FNP)	
Employer Contributions	$ 1,077,545
Member Contributions	549,845
Net Investment Income	129,372
Benefit Payments, Including Refunds of Member Contributions	(3,501,911)
Transfers	6,342,010
Administrative Expense	(47,577)
Net Change in FNP	$ 4,549,284
Beginning of Year FNP	**56,340,825**
End of Year FNP	**$ 60,890,109**
End of Year Net Pension Liability (NPL)	**$ 2,831,162**
FNP as a Percentage of TPL	95.6%
Covered-Employee Payroll (Payroll)*	$ 7,188,426
NPL as a Percentage of Payroll	39.4%

*For FY 2016

SECTION V - FINANCIAL DISCLOSURE INFORMATION

Notes to Schedule of Changes in Net Pension Liability and Related Ratios

Change of assumptions. In 2016, the amounts reported as changes of assumptions were due to assumptions that were updated based on the experience study covering the period from June 30, 2012 through June 30, 2015.

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 current 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, 2016, but it is our expectation that System staff will make the final determination regarding any notes needed for this schedule.

Table V-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.

Table V-3
Sensitivity of Net Pension Liability to Changes in Discount Rate
FY 2016

	1% Decrease 5.875%	Discount Rate 6.875%	1% Increase 7.875%
Total Pension Liability (TPL)	$69,622,561	$ 63,721,271	$ 58,604,198
Plan Fiduciary Net Position (FNP)	60,890,109	60,890,109	60,890,109
Net Pension Liability (NPL)	$ 8,732,452	$ 2,831,162	$ (2,285,911)
FNP as a Percentage of TPL	87.5%	95.6%	103.9%

A one percent decrease in the discount rate increases the TPL by approximately 9% and increases the NPL by approximately 208%. A one percent increase in the discount rate decreases the TPL by approximately 8% and decreases the NPL by approximately 181%.

SECTION V - FINANCIAL DISCLOSURE INFORMATION

Table V-4 below provides information relating to the employer contributions for the Program. Under GASB Statement No. 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 third 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, 2016, but it is our expectation that System staff will make the final determination regarding any notes needed for this schedule.

Table V-4
Schedule of Employer Contributions
FY 2016

Actuarially Determined Contribution (ADC)	$ 1,077,545
Contributions in Relation to the ADC	1,077,545
Contribution Deficiency/(Excess)	$ 0
Covered-Employee Payroll (Payroll)	$ 7,188,426
Contributions as a Percentage of Payroll	14.99%

Notes to Schedule of Employer Contributions:

Valuation Date: June 30, 2014

Timing: June 30, 2016 ADC rates are calculated based on a 2014 Actuarial Valuation developed as a roll-forward of the 2013 valuation liability, adjusted for expected experience and any assumption or methodology changes during FY 2014 using actual assets as of June 30, 2014.

SECTION V - FINANCIAL DISCLOSURE INFORMATION

Key Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method:	Entry Age Normal
Asset Valuation Method:	Three-year smoothed market
Amortization Method:	Level percentage of payroll, open 10-year of the 2014 UAL
Discount Rate:	7.125%
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, 2016 can be found in the June 30, 2014 Actuarial Valuation Report.

Other Information

Change of assumptions. In 2016, the amounts reported as changes of assumptions were due to assumptions that were updated based on the experience study covering the period from June 30, 2012 through June 30, 2015.

Table V-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 Statement No. 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, 2016, these values are thus developed as of June 30, 2015. The development of this value is shown on the following page, including reflection of the decision by MainePERS to round the resulting value to the nearest whole year.

SECTION V - FINANCIAL DISCLOSURE INFORMATION

Table V-5
Average Expected Remaining Service Lives
For Measurement Year Ending June 30, 2016

Status	Total Expected Future Service	Count	Average Remaining Service Lives
Actives	266	56	5
In-Pay Members	0	71	0
Deferred Vested Members	0	3	0
Inactives Due Refunds	0	1	0
Total Membership	266	131	2

SECTION V - FINANCIAL DISCLOSURE INFORMATION

Table V-6 below is a gain/loss analysis of the changes in the actuarial liability over the past six years, reflecting variances between actual experience and assumed experience for different kinds of risk as specified in the GFOA GAAFR.

Table V-6
ANALYSIS OF FINANCIAL EXPERIENCE
Gain and Loss in Actuarial Liability During Fiscal Years Ended June 30
Resulting from Differences Between Assumed Experience and Actual Experience

Type of Activity	Gain (or Loss) For Fiscal Year Ended June 30, 2011	Gain (or Loss) For Fiscal Year Ended June 30, 2012	Gain (or Loss) For Fiscal Year Ended June 30, 2013	Gain (or Loss) For Fiscal Year Ended June 30, 2014	Gain (or Loss) For Fiscal Year Ended June 30, 2015	Gain (or Loss) For Fiscal Year Ended June 30, 2016
Investment Income	$ (225,240)	$ (1,255,201)	$ (292,984)	$ 2,483,976	$ (372,699)	$ (1,729,485)
Combined Liability Experience	(1,076,385)	2,127,639	(1,202,510)	324,891	(2,237,833)	1,745,956
Gain (or Loss) during Year from Financial Experience	(1,301,625)	872,438	(1,495,494)	2,808,867	(2,610,532)	16,471
Non-Recurring Items	(6,449,752)	1,031,107	(3,142,008)	(426,150)	(27,931)	1,835,626
Composite Gain (or Loss) During Year	**$ (7,751,377)**	**$ 1,903,545**	**$ (4,637,502)**	**$ 2,382,717**	**$ (2,638,463)**	**$ 1,852,097**

SECTION V - FINANCIAL DISCLOSURE INFORMATION

Table V-7 below compares the Program's assets as of each valuation date shown to the Program's actuarial liability divided into three separate groups: liabilities for contributions on deposit for current active members, liabilities for future benefits for inactive members, and employer-financed liabilities for current active members. This solvency test is used to assess funding progress based on what percentage of the liabilities for each of these groups the Program's assets are sufficient to cover. Per GFOA guidance, this schedule is to include this assessment for the ten most recent years and notes to this schedule should be provided to explain any factors that affect the comparability of the data. We do not believe that any such note is necessary for the measurement year ending June 30, 2016, but it is our expectation that System staff will make the final determination regarding any notes needed for this schedule.

Table V-7
SOLVENCY TEST
Aggregate Actuarial Liabilities For

Valuation Date June 30,	(1) Active Member Contributions	(2) Retirees, Vested Terms, Beneficiaries	(3) Active Members (Employer Financed Portion)	Reported Assets*	Portion of Actuarial Liabilities Covered by Reported Assets (1)	(2)	(3)
2016	$10,592,002	$ 33,418,288	$ 19,710,981	$ 64,265,782	100%	100%	103%
2015	9,717,368	30,422,680	18,771,569	57,074,951	100%	100%	90%
2014	9,466,378	28,785,537	16,308,727	55,419,017	100%	100%	105%
2013	9,464,604	26,605,274	16,304,907	51,055,251	100%	100%	92%
2012	9,379,428	24,731,810	12,229,440	49,735,004	100%	100%	128%
2011	9,028,737	24,690,578	14,148,982	49,324,784	100%	100%	110%
2010	8,510,723	26,915,670	17,723,306	47,677,635	100%	100%	69%
2009	7,980,202	25,570,008	16,993,110	48,478,344	100%	100%	88%
2008	7,481,505	24,943,576	15,209,371	50,418,942	100%	100%	118%
2007	6,941,423	21,133,577	18,767,351	48,225,053	100%	100%	107%

* Reported Assets are measured at actuarial value. Results would be different if market value of assets were used. Despite the name of this exhibit, the liabilities presented in this schedule are not an appropriate measurement of the settlement value of the System.

APPENDIX A - MEMBERSHIP INFORMATION

Active Member Data as of June 30, 2016	
Count	62
Average Current Age	60.0
Average Benefit Service	17.4
Average Vesting Service	17.6
Average Valuation Pay	$115,877

Non-Active Member Data as of June 30, 2016

	Count	Average Age	Total Annual Benefit	Average Annual Benefit
Retired	51	73.8	$ 2,910,738	$ 57,073
Retired – Concurrent Beneficiaries	7	74.5	100,738	14,391
Disabled	1	70.6	38,913	38,913
Beneficiaries	15	80.7	547,026	36,468
Pre-Retirement Death Benefits	0	0.0	0	0
Terminated Vested	2	57.0	68,219	34,110
Inactive Due Refund	1		NA	NA

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. Member contributions earn 5% annual interest.

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.

APPENDIX B - SUMMARY OF PROGRAM AND 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 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 in active service on or after October 1, 1999:

Attainment of age 62 and five years of creditable service.

APPENDIX B - SUMMARY OF PROGRAM AND 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 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 approximate rates listed in the table below, for members with at least ten years creditable service on July 1, 1993.

Age	Reduction	Age	Reduction
45	29.3%	53	16.6%
46	28.0	54	14.6
47	26.6	55	12.5
48	25.2	56	10.3
49	23.6	57	7.9
50	22.0	58	5.4
51	20.3	59	2.8
52	18.5	60	0.0

APPENDIX B - SUMMARY OF PROGRAM AND PLAN PROVISIONS

The benefit is 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.

The benefit is 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.

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 12). 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

APPENDIX B - SUMMARY OF PROGRAM AND PLAN PROVISIONS

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' 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 12). 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 13); 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.

APPENDIX B - SUMMARY OF PROGRAM AND PLAN PROVISIONS

- 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.

- 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. Termination Benefit

Eligibility: Termination of service other than by retirement or death with at least 5 years of credible service.

Benefit: The Member's choice of a refund of the accumulated contributions with interest or a retirement benefit using Creditable Service and Average Final Compensation as of date of termination, deferred to Normal Retirement age.

11.Refund of Contributions

Eligibility: Termination of service other than by retirement or death with less than 5 years of Creditable Service.

Benefit: Refund of Member's accumulated contributions with interest.

12.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

APPENDIX B - SUMMARY OF PROGRAM AND PLAN PROVISIONS

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
2016 - $20,940.71

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.

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

13. 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*.

APPENDIX B - SUMMARY OF PROGRAM AND PLAN PROVISIONS

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.

14. Plan Changes since Prior Valuation

None.

APPENDIX C - ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

1. Annual Rate of Investment Return:

	Previous	Revised
Judicial	7.125%	6.875%

Rate is net of both administrative and investment expense.

2. Cost-of-Living Adjustment (COLA) Assumed Rate:

	Previous	Revised
Judicial	2.55%	2.20%

3. Annual Rate of Individual Salary Increase:

	Previous	Revised
Judicial	3.50%	2.75%

4. Sample Rates of Termination (% at Selected Ages):

Age	Previous Assumption	Revised Assumption
25	7%	7%
30	6	6
35	5	5
40	4	4
45	3	3
50	2	2
55	1	1

APPENDIX C - ACTUARIAL ASSUMPTIONS AND METHODS

5. Sample Rates of Mortality for Healthy Annuitant Lives at Selected Ages (number of deaths per 10,000 members):

	Previous Assumption		Revised Assumption (showing values in 2016)	
Age	Male	Female	Male	Female
50	16	13	42	32
55	27	24	59	43
60	53	47	79	63
65	103	90	113	97
70	177	155	175	156
75	306	249	285	256
80	554	413	480	432
85	997	708	837	766
90	1,727	1,259	1,469	1,365
95	2,596	1,888	2,314	2,242

Previous rates are based on the RP-2000 Mortality Table for males and females projected forward to 2015 using Scale AA. These assumptions were set in 2011 with a margin for future improvement based on the five-year experience study process.

Revised rates are based on 104% and 120% of the RP-2014 Total Dataset Healthy Annuitant Mortality Table, respectively, for males and females, using the RP-2014 Total Dataset Employee Mortality Table for ages prior to start of the Healthy Annuitant Mortality Table, both projected from the 2006 base rates using the RPEC_2015 model, with an ultimate rate of 0.85% for ages 20-85 grading down to an ultimate rate of 0.00% for ages 111-120, and convergence to the ultimate rate in the year 2020.

APPENDIX C - ACTUARIAL ASSUMPTIONS AND METHODS

6. Sample Rates of Mortality for Active Healthy Lives at Selected Ages (number of deaths per 10,000 members)*:

	Previous Assumption		Revised Assumption (showing values in 2016)	
Age	Male	Female	Male	Female
20	3	2	4	2
25	3	2	5	2
30	4	2	4	3
35	7	4	5	4
40	10	6	6	5
45	12	9	10	8
50	16	13	17	13
55	27	24	29	20
60	53	47	48	30
65	103	90	85	45

* 5% of deaths assumed to arise out of and in the course of employment.

Previous rates are based on the RP-2000 Mortality Table for males and females projected forward to 2015 using Scale AA. These assumptions were set in 2011 with a margin for future improvement based on the five-year experience study process.

Revised rates are based on 104% and 120% of the RP-2014 Total Dataset Employee Mortality Table, respectively, for males and females, using the RP-2014 Total Dataset Healthy Annuitant Mortality Table rates after the end of the Total Employee Mortality Table, both projected from the 2006 base rates using the RPEC_2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0.00% for ages 111-120, and convergence to the ultimate rate in the year 2020.

APPENDIX C - ACTUARIAL ASSUMPTIONS AND METHODS

7. Sample Rates of Mortality for Disabled Annuitant Lives at Selected Ages (number of deaths per 10,000 members):

	Previous Assumption		Revised Assumption (showing values in 2016)	
Age	Male	Female	Male	Female
25	92	72	84	24
30	112	89	80	31
35	134	109	94	43
40	160	126	114	59
45	193	144	177	92
50	236	165	216	121
55	295	191	249	152
60	362	226	282	181
65	446	272	337	220
70	576	331	437	300

Previous rates are based on the Revenue Ruling 96-7 Disabled Mortality Table for males and females.

Revised rates are based on 108% and 105% of the RP-2014 Total Dataset Disabled Annuitant Mortality Table, respectively, for males and females, projected from the 2006 base rates using the RPEC_2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0.00% for ages 111-120, and convergence to the ultimate rate in the year 2020.

8. Sample Rates of Retirement at Selected Ages (number retiring per 1,000 members):

	Previous Assumptions			Revised Assumptions		
Age	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
60-61	1,000	NA	NA	1,000	NA	NA
62-64	1,000	500	NA	1,000	500	NA
65-69	1,000	500	500	1,000	500	500
70-74	1,000	1,000	1,000	1,000	500	500
75+	1,000	1,000	1,000	1,000	1,000	1,000

In the case of Judicial employees, Tier 1 refers to those who had accrued at least 10 years of service by July 1, 1993. Tier 2 refers to those who had not accrued at least 10 years of service by July 1, 1993 or were hired after that date but had five years of service by July 1, 2011. Tier 3 refers to those who did not have five years of service by July 1, 2011.

APPENDIX C - ACTUARIAL ASSUMPTIONS AND METHODS

9. Sample Rates of Disability at Selected Ages (number becoming disabled per 10,000 members):

Age	Previous Assumption	Revised Assumption
25	0.6	0.0
30	0.6	0.0
35	0.7	0.0
40	1.1	0.0
45	2.2	0.0
50	4.2	0.0
55	7.2	0.0
60	0.0	0.0

10. Family Composition Assumptions:

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

11. Technical and Miscellaneous Assumptions:

Decrement Timing: Middle of the valuation year

Pay Increase Timing: Salary provided is treated as the rate of pay as of valuation date. Annual increases are applied as of the beginning of each subsequent valuation.

Member Contribution Interest Rate: 5%

COLA Timing: September 1

12. Rationale for Actuarial Assumptions:

The previous assumptions were adopted by the MainePERS Trustees as a result of the prior experience study review performed in 2011 and covering the period July 1, 2005 through June 30, 2010, with the exception of the discount rate, inflation, and cost-of-living assumptions, which the Board continually reviews. The 7.125% discount rate, 3.50% inflation assumption, and 2.55% cost-of-living adjustment assumed rate were adopted by the Board effective with the June 30, 2014 valuation, at the advice of its investment consultants.

APPENDIX C - ACTUARIAL ASSUMPTIONS AND METHODS

The revised assumptions were adopted by the Board of Trustees at their July 14, 2016 meeting. The demographic assumptions adopted are based on an experience study covering the period from June 30, 2012 through June 30, 2015 and the economic assumptions are based on this experience study along with advice of the MainePERS investment consultants.

13. Changes since Last Valuation:

The COLA, salary increase, termination, retirement, disability, mortality, and disability mortality assumptions were updated based on the experience study covering the period from June 30, 2012 through June 30, 2015.

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 2.75% 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.

APPENDIX C - ACTUARIAL ASSUMPTIONS AND METHODS

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.

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 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.

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.

APPENDIX D - GLOSSARY OF GASB TERMS

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.

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