# Maine Public Employees Retirement System

Comprehensive Annual Financial Report For the Fiscal Year Ended June 30, 2018



2018



MainePERS is a component unit of the State of Maine.

### **Maine Public Employees Retirement System**

A Component Unit of the State of Maine

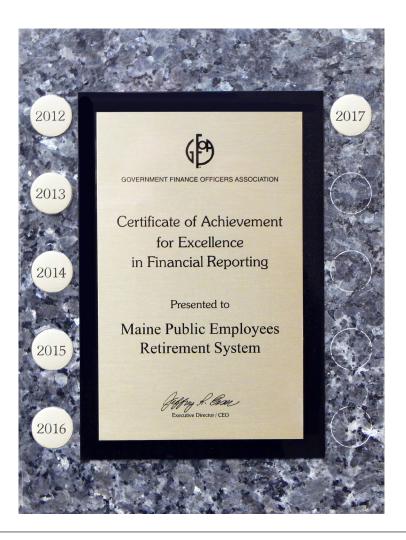
P.O. Box 349, Augusta, Maine 04332-0349

# Comprehensive Annual Financial Report

For the fiscal year ended June 30, 2018

This report has been produced as required by 5 M.R.S.A. §17102 (10), which states that the Maine Public Employees Retirement System must publish an annual report showing "the fiscal transactions of the retirement system for the fiscal year and the assets and liabilities of the retirement system at the end of the fiscal year; and the actuary's report on the actuarial valuation of the financial condition of the retirement system for the fiscal year."

This report was prepared by the Financial, Administrative and Investment staff of the Maine Public Employees Retirement System. Costs for producing this report were paid from the operating budget of the Maine Public Employees Retirement System. This CAFR is printed and also made available online. We respect the environment by printing on recycled paper and using soy-based inks—for a cleaner, healthier planet.





Public Pension Coordinating Council

# Recognition Award for Funding 2018

Presented to

### Maine Public Employees Retirement System

In recognition of meeting professional standards for plan funding as set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA) National Conference on Public Employee Retirement Systems (NCPERS) National Council on Teacher Retirement (NCTR)

Alan H. Winkle
Program Administrator

### **MainePERS Comprehensive Annual Financial Report**

For the fiscal year ended June 30, 2018

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# INTRODUCTORY SECTION



Maine State Berry: Blueberry



Sandra J. Matheson, Executive Director

#### **BOARD OF TRUSTEES**

Brian H. Noyes, Chair Richard T. Metivier, Vice Chair Shirrin L. Blaisdell Philip A. Brookhouse Michael R. Currie Terry Hayes, *State Treasurer, ex-officio* Kenneth I. Williams

### LETTER OF TRANSMITTAL

December 21, 2018

In accordance with the requirements of 5 M.R.S.A. §17102, I am pleased to present the Comprehensive Annual Financial Report ("CAFR" or "Annual Report") of the Maine Public Employees Retirement System ("MainePERS" or the "System") for the fiscal year ended June 30, 2018. This CAFR, taken as a whole, provides information on all aspects of the System. It is written to conform to Governmental Accounting Standards Board (GASB) requirements. Management of the System takes full responsibility for the accuracy, completeness and fairness of the representations made in this report.

Berry, Dunn, McNeil & Parker, LLC, has issued an unqualified opinion on the MainePERS' financial statements for the year ended June 30, 2018. The independent auditor's report is located at the front of the financial section.

Management's discussion and analysis (MD&A) immediately follows the independent auditor's report and provides a narrative introduction, overview and analysis of the basic financial statements. MD&A complements this letter of transmittal and should be read in conjunction with it.

#### **FUNDING OF SYSTEM PROGRAMS**

The System administers seven retirement programs, often referred to as "plans." In addition, the System operates a Group Life Insurance Program (GLI) providing life insurance coverage for both active employees and for retirees, and a program of defined contribution retirement plans under sections 401(a), 403(b) and 457(b) of the Internal Revenue Code, collectively referred to as MaineSTART. The System also manages the Retiree Health Insurance Post Employment Investment Trust on behalf of the State of Maine. The Trust is an irrevocable trust established for the purpose of accumulating assets to provide funding for the State's liability for retiree health benefits. Assets for the purpose of providing funding for the liability for retiree health and other post-employment benefits (OPEB) for the System's employees are held in the MainePERS OPEB Trust, also administered by the System.

The System's defined benefit retirement programs are the dominant element in its financial activities and position. The four major programs are the State Employee and Teacher Retirement Program, the Judicial Retirement Program, the Legislative Retirement Program and the Participating Local District (PLD) Consolidated Retirement Plan. In addition, the System continues to administer twelve closed single-employer plans on behalf of participating local districts who at the time of consolidation, opted not to join the PLD Consolidated Plan. These plans are collectively referred to as the PLD Agent Plan.

The System also administers two pay-as-you-go retirement programs, one for judges who retired prior to the establishment of the Judicial Retirement Program in 1984 and the other for former governors and their surviving spouses. The programs are funded each biennium by a direct appropriation from the Legislature and, in the case of the active governor, by employee contributions required by statute.

The basic defined benefit retirement plan funding equation provides that, over the long term, contributions plus investment earnings must be equal to benefit obligations. While investment market performance affects plan funding levels and funding requirements, it does not affect benefit obligations.

The return on invested contributions has historically supplied a significant amount of the benefit funding resources of defined benefit plans. In periods when the investment markets provide lower returns than expected, the resulting funding shortfall has historically been supplemented by a combination of increased employer contributions and investment market returns in other periods that exceeded expectations. For this reason, the performance of the investment markets is a significant factor affecting the financial activities or position of the System, and the effects of market performance flow through to contributions made by participating employers. The recent two-decade low-interest environment has increased the sensitivity of the trust fund to market fluctuations as more of the trust fund income is earned from equities.

As with all actuarially-funded defined benefit plans, the System uses actuarial methods and procedures that integrate short-term market behavior with the long-term time horizon of the plan. One of these methods is "smoothing" of investment results which moderates the volatility of employer contribution requirements.

The interplay of liabilities (i.e., the obligation to pay benefits) and assets (i.e., contributions and investment earnings on contributions) can be observed in changes in the programs' actuarial funded ratios over time. The funded ratio of the State Employee and Teacher Retirement Program had improved steadily from 1990 through 2008. Substantial investment losses in fiscal years 2008 and 2009 reduced the funding ratio. Fiscal years 2010 and 2011 experienced strong investment returns, and in combination with changes to plan provisions, the funding ratio again improved. Subsequent market gains and losses resulted in a funding ratio of 82.2 percent as of the end of fiscal year 2015. Low investment returns in fiscal years 2014 and 2015 reduced the funding ratio to 80.4 percent as of June 30, 2016, and subsequent gains increased it to 80.9 percent as of June 30, 2017 as investment returns increased. As of June 30, 2018 the funding ratio was 81.4 percent, due largely to investment returns exceeding the expected rate of return.

The funded ratio of the Judicial Retirement Program has in recent years remained close to 100 percent. The funded ratio as of June 30, 2013 was 97.5 percent. In fiscal year 2014, the funded ratio of the plan increased to 101.6 percent and as of June 30, 2015 the funded ratio was 96.9 percent. The funded ratio of this plan increased again as of June 30, 2016 to 100.9 percent; at June 30, 2017, the funded ratio rose to 102.7 percent. As of June 30, 2018 the funding ratio remained strong at 102.4 percent.

The funded ratio of the Legislative Retirement Program has been above 100 percent for many years, and continues this year due primarily to member turnover in the Plan. As of June 30, 2018, the funded ratio was 146.3 percent, compared to 145.9 percent at June 30, 2017 and 148.5 percent at June 30, 2016.

The funded ratio of the Participating Local District Consolidated Retirement Plan was 89.5 percent as of June 30, 2018. This compares to 86.5 percent as of June 30, 2017 and 86.1 percent as of June 30, 2016. Information concerning the funded status of the non-consolidated participating local district plans administered by the System is available by contacting the System.

Information regarding overall funding progress appears in the MD&A beginning on page 21. More information on the funding levels of all of the System's retirement programs can be obtained from the System.

The System's defined contribution plans, collectively called MaineSTART, provide an important supplement for our defined benefit participants and a valuable alternative for other participants. MaineSTART offers a family of funds from Vanguard designed to be low cost and easy for participants to manage. The investment strategy for these assets is determined by each participant.

The Group Life Insurance Program is funded by premiums paid by its participants and the employers of those participants, and by investment returns on the Group Life Insurance Program assets. The investment strategy for these assets is a similar strategy to the strategy employed for the defined benefit programs' assets.

The Retiree Health Insurance Post Employment Investment Trust is funded through direct appropriations from the State of Maine.

### **INVESTMENTS**

The basis of the investment policy is the mix of investment types in which assets are invested and the allocation of assets among asset classes. The System's Board of Trustees (Board) is responsible for establishing the policy that is the framework for investment of the programs' assets. The Board employs in-house investment professionals and outside investment consultants to advise it on investment matters, including policy.

The defined benefit program had a return of 10.3% while the group life insurance program had a return of 9% for fiscal year 2018. Total value of the defined benefit portfolio increased to \$14.5 billion at June 30, 2018 from \$13.6 billion at June 30, 2017. This increase in the total value of the portfolio is due to high earnings that substantially exceeded the negative cash flow experienced by the mature defined benefit programs.

The current target asset allocation was last modified in September 2017 to increase investments in alternative strategies such as private equity, private credit, infrastructure, real estate, natural resources and risk diversifiers.

The Board's choice of asset classes reflects its assessment of expected investment returns and the nature, level and management of risk. The defined benefit programs' assets perform two functions; they collateralize the benefits owed to participants, and they provide investment earnings. All benefit payments must eventually be funded from a combination of contributions and investment earnings.

#### HIGHLIGHTS OF THE PAST YEAR

A significant focus of our work this past year centered on the PLD Consolidated Plan in an effort to protect the core benefit for members and at the same time, develop a contribution rate methodology that shares risk between both the employer and the member. This effort required an enormous amount of communication and outreach to stakeholders, gathering input and explaining all the options and the costs associated with each. Ultimately, plan changes designed to protect the plan and control contribution rate volatility were adopted and now implementation of those changes is underway.

We are pleased to report that during this past year, we have designed and implemented the Employer Reporting and Assistance Program in an effort to provide support and assistance to our participating employers in their work with us. The program is designed with several goals in mind, including assisting employers with enrolling members, supporting employers in reporting weekly and monthly payroll information, and identifying areas where additional supports might be beneficial including training and education, or improving the employer experience with our employer reporting portal.

In the fall of 2017, MainePERS sold its main office building and adjacent land and became tenants while a new building is being constructed. The new headquarters, located only a mile from the existing building, will provide more modern, efficient office space for staff and will be equipped in such a way as to provide flexibility in operations in the future. We expect to move to the new location in January of 2019.

### **ACKNOWLEDGEMENTS**

We are pleased to acknowledge that for the fourteenth consecutive year, the System was awarded the Certificate of Achievement for Excellence in Financial Reporting by the Government Finance Officers Association ("GFOA"). In order to be awarded a Certificate of Achievement, a governmental unit must publish an easily readable and efficiently organized Comprehensive Annual Financial Report ("CAFR"), with contents that meet or exceed program standards. We are pleased that we are recognized for handling and accounting for retirement funds in a manner that conforms to generally accepted accounting practices and all applicable legal requirements. We fully expect to be in compliance with all of the Certificate of Achievement program requirements into the future. This 2018 CAFR will also be submitted to the GFOA.

The System, through its management staff, is responsible for establishing and maintaining an internal control structure that is designed to provide reasonable assurance that assets are protected from theft, fraud, or misuse and that financial recordkeeping is transparent, complete and accurate. The concept of reasonable assurance recognizes that the cost of a control should not exceed the benefits likely to be derived and that the valuation of costs and benefits requires estimates and judgments by management. Management believes that the existing internal controls accomplish these objectives. Management is also responsible for the completeness, accuracy and fair presentation of financial information and for all disclosures. This responsibility notably encompasses the System's financial statements themselves, including the amounts therein that, necessarily, are based on estimates and judgments.

The preparation of this report has been a collaborative effort of Executive Management, the Accounting and Finance Department, the Investment Department and the Communications Department. The System takes responsibility for all of the information contained in the report and confidently presents it as a basis for the many decisions of the Board of Trustees, staff, and others who will rely on it.

I am joined in transmitting this Comprehensive Annual Financial Report to all of our constituencies by the System's Director of Finance.

Respectfully submitted,

Sandra J. Matheson

**Executive Director** 

Sherry Tripp Vandrell

Director of Finance

### Appendix A to Letter of Transmittal

#### **OVERVIEW OF THE SYSTEM**

The Maine Public Employees Retirement System (MainePERS) is an independent public agency of the State of Maine that traces its history to 1942. By the authority granted to it by the Maine Legislature, the System administers seven defined benefit retirement programs that cover State employees, the State's public school teachers, judges, legislators, and employees of the 316 municipalities and other public entities, called "participating local districts" (PLDs) that have chosen to provide retirement plans to their employees through MainePERS. The System is also responsible for the payment of retirement and survivors' benefits to former governors and their surviving spouses and to former judges who retired prior to the establishment of the Judicial Retirement Program in 1984 and their surviving spouses. In addition, the System administers a Group Life Insurance Program that provides or makes available life insurance benefits for active and retired State employees and teachers, judges, and legislators as well as employees of those PLDs who have chosen to offer the Group Life Insurance Program. The System also administers defined contribution plans for eligible employers who choose to participate in the plans.

### **Board of Trustees**

Responsibility for the operation of the Maine Public Employees Retirement System rests with the System's Board of Trustees, which is comprised of eight members. State law specifies the Board's composition. With the exception of the State Treasurer, each trustee is subject to the legislative confirmation process. Three trustees are System members, one of whom is proposed and elected by the Maine Education Association, one of whom is proposed and elected by the Maine State Employees Association, and one of whom is a PLD member appointed by the governing body of the Maine Municipal Association. Four other trustees are appointed by the Governor. Of these, one must be selected by the Governor from a list of nominees submitted by the Maine Retired Teachers Association and one must be a MainePERS retiree selected from a list of nominees submitted by State and/or PLD retirees. The remaining two appointees are direct gubernatorial appointments, both of whom must be qualified through training or experience in investments, accounting, banking, insurance or as actuaries. All appointed trustees are required to have "a working knowledge of retirement policy and legal issues and a general knowledge and understanding of banking, finance, and investment practices." The eighth trustee is the State Treasurer, who serves ex-officio. All trustee terms are three years, except for the two-year term of the State Treasurer. The Board annually elects its chair and vice chair from among its members.

The MainePERS Trustees serve as Trustees of the State and Teacher, Judicial and Legislative Retirement Programs as well as for the PLD Consolidated Program, the Group Life Insurance Programs, the Defined Contribution Plans, and the Retiree Health Insurance Post-Employment Benefits Investment Trust.

The Board contracts for the services of an actuary to prepare annual valuations of the assets and liabilities of each of the retirement programs administered by the System. The actuary also provides information and recommendations as to sound and appropriate actuarial assumptions, which are utilized, together with valuation information, to determine the programs' funding requirements. The System's actuary in fiscal years 2017 and 2018 was Cheiron, Inc.

The Board's management of MainePERS investments is embodied in its investment policy. The policy states the Board's underlying investment objectives, sets out the investment strategies intended to realize the objectives, and establishes guidelines and criteria for implementation of the strategies. The Board has engaged Cambridge Associates to advise it on the investment policy and the administration of the investment program.

The Board is the final administrative decision maker in matters involving the rights, credits, and benefits of members. It has established an administrative appeals process for the making of such decisions; in this process relevant factual information and legal requirements are identified and analyzed by independent Hearing Officers who serve under contract. In decisions on disability retirement appeals, statutorily established medical boards and individual medical advisors provide recommendations as to the medical aspects of disability. The Board's final administrative decisions are appealable to the Maine Superior Court.

### Administration

The Office of the Executive Director has administrative responsibility for all aspects of the System and its operations. The Executive Director oversees all actuarial work and investments, and has administrative responsibility for the internal audit function. Actuarial work is carried out with the assistance of an actuary; investment operations are carried out with the assistance of the System's Chief Investment Officer and staff, one or more investment consultants, investment managers and other appropriate advisors. In addition, the Office performs the executive functions of the System and has day-to-day responsibility for legal and legislative matters, appeals, federal, state, and local governmental relations, planning, organizational development, accounting and financial reporting, and numerous special projects.

### Appendix A to Letter of Transmittal

The Department of Service Programs administers the service and disability retirement programs, MaineSTART defined contribution plans, employer programs, survivor benefit and group life insurance programs. The Department is the System's primary contact for members, participating employers, and benefit recipients.

The Department of Administration is responsible for most administrative and support functions, including information technology supports, communications, facilities, and human resources.

The System's primary responsibility is the administration of defined benefit and defined contribution retirement plans. Retirement and related benefits provided by MainePERS include:

- service retirement benefits, that provide retirement income to qualified members;
- disability retirement benefits, that provide income to a member who becomes disabled under Maine law while the member is in service and before the member retires; and
- death benefits that are paid to a member's designated beneficiaries.

Administration of these programs includes financial administration, investments, recordkeeping of members' work and compensation data, and provision of retirement-related services to members, employers, and retirees.

The System also administers the MaineSTART defined contribution retirement plans that are established under sections 401(a), 403(b), and 457(b) of the Internal Revenue Code. These plans are presently available to employees of those employers in the PLD Consolidated Plan that have adopted one or more of the plans.

The System itself and all of its programs are established by and operate within the scope of Maine statutes. The operation of the System's defined benefit retirement plans is also governed by provisions of the Maine Constitution, not all of which apply to all of the plans.

### **Membership and Contributions**

State employees and teachers are covered under the Maine Public Employees Retirement System's State Employee and Teacher Retirement Program. State employees are required by law to become members of MainePERS when hired. There is an exception to this rule for elected and appointed officials, for whom membership is optional. Public school teachers, other than substitute teachers, for whom membership is also optional, must also become members of MainePERS when hired. PLD employees become members of MainePERS when they are hired if their employer participates as a PLD in MainePERS at that time and if they meet the membership eligibility requirements in effect when they are hired. For some PLD employees, membership is optional. These employees include those employed by their PLD before the PLD joined MainePERS, those whose employers provide Social Security or a qualified replacement plan under federal law, elected and appointed officials, and chief administrative officers.

The Legislative Retirement Program, also administered by MainePERS, was established to provide a retirement program for those serving in the Maine Legislature. Except as provided otherwise by statute, membership in the Maine Legislative Retirement Program is mandatory for legislators entering service on or after December 3, 1986.

The Judicial Retirement Program was established to provide a retirement program for Maine's judges. Membership in the Judicial Retirement Program is a condition of employment for all judges serving on or after December 1, 1984.

All members of the System contribute a percentage of their compensation to the System; employers may opt to contribute all or a portion of that percentage on behalf of their employees. Each employer also contributes to the System an amount for the normal costs of the programs that is a percentage of total wages paid to members who are employees of that employer.

Prior to July 1, 2013 the State paid the normal cost employer contributions and unfunded actuarial liability contributions on behalf of all State employee and teacher members. As of July 1, 2013, teacher employers began paying the normal cost employer contributions on behalf of those teacher members they employed while the state continued to pay toward the unfunded actuarial liability associated with teacher members. The employer contribution percentages are actuarially determined by plan and vary from year to year.

Employer normal cost contributions, along with current member contributions, support benefits currently being earned by active members. The State's unfunded actuarial accrued liability (UAAL) contribution is a payment on the amortized debt that represents the liability for benefits in excess of the amount supported by assets of the System. The Maine Constitution requires that the UAAL established as of June 30, 1996 be fully funded in not more than 31 years from July 1, 1997. The amortization period at the end of FY 2018 is 10 years, requiring full payment of the UAAL by the end of FY 2028.

### Appendix A to Letter of Transmittal

The System also administers pay-as-you-go retirement programs for former judges who retired prior to the establishment of the Judicial Retirement Program in 1984 and their surviving spouses and former governors and their surviving spouses. The programs are funded each biennium by a direct appropriation from the Legislature and, in the case of the active governor, by employee contributions required by statute.

The Group Life Insurance Program is provided or made available to all eligible State employees, public school teachers, and employees of those PLDs who elect to offer this coverage to their employees, as well as to members of the Legislative and Judicial Retirement Programs. Basic coverage for the employee is equal to the employee's annual base compensation rounded up to the next \$1,000; supplemental coverage for the employee and coverage for dependents are also available.

Further details regarding program and plan provisions can be found elsewhere in this report and in the actuarial valuation for each program.

### **Financial Reporting**

Total operating expenses for staff and all other costs of operations are allocated among each of the Programs administered by the System. The System's administrative budget is approved annually by the Board of Trustees, and is reported to the Legislature.

The System's financial statements have been prepared in accordance with generally accepted accounting principles applied on a consistent basis, in accordance with the standards and requirements of the Governmental Accounting Standards Board (GASB). The financial statements are presented in accordance with GASB Statement No. 34, Basic Financial Statements - Management's Discussion and Analysis for State and Local Governments, GASB Statement No. 67, Financial Reporting for Pension Plans, and, with respect to the Group Life Insurance Program, GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans. Financial information presented throughout this Report is consistent with the financial statements. The financial statements are prepared on the accrual basis of accounting.

The System has an Internal Audit program, staffed by one internal auditor. This program focuses on a plan of internal controls and efficiencies in all of the departments at the System. The internal auditor presents audit reports to both management and the Finance and Audit Committee of the Board of Trustees.

The independent auditor, Berry Dunn, has conducted an audit of the financial statements in accordance with, as stated in its audit report, generally accepted auditing standards and including those tests and procedures Berry Dunn deemed necessary to express its opinion in its audit report.

The auditors have unrestricted access to the Board and the Board's Finance and Audit Committee to discuss the audit and their findings with respect to the integrity of the System's financial reporting and adequacy of the System's internal controls.

The System reports five defined benefit pension plans including two multiple-employer cost sharing plans (the State Employee and Teacher Plan and the PLD Consolidated Plan), two single employer plans (the Judicial and Legislative Plans) and an agent multiple employer plan which is an aggregation of single employer plans of those PLDs that elected not to join the consolidated cost sharing plan. Separate actuarial valuations are performed for each of the retirement programs that the System administers; contributions, inflows, and benefits payments are separately tracked and recorded, and separate trust fund balances are attributed to each such program. The System also reports the Group Life Insurance Program for active employees and two multiple-employer cost sharing Other Post-Employment Benefit (OPEB) plans providing life insurance coverage in retirement for state employees and teachers as well as for employees of those PLDs that participate in the life insurance program. In addition, the System reports the MaineSTART Defined Contribution plans as well as the Retiree Health Insurance Trust Fund. The System's financial statements, notes thereto and required supplementary information are prepared accordingly.

### BOARD OF TRUSTEES, MANAGEMENT STAFF, and PRINCIPAL PROFESSIONAL CONSULTANTS June 30, 2018

### **BOARD OF TRUSTEES**

Brian H. Noyes, *Chair* Appointed by the Governor

Richard Metivier, Vice Chair Appointed by the Maine Municipal Association

Shirrin L. Blaisdell Appointed by the Governor from a List of Retired State and PLD

**Employees Nominated by Retirees** 

Kenneth L. Williams Elected by the Maine Education Association

Michael Currie Appointed by the Governor

Terry Hayes, State Treasurer Ex-Officio Member

Phil Brookhouse Appointed by the Governor from a List of Nominees Submitted by

the Maine Education Association - Retired

Vacant Elected by the Maine State Employees Association

### SENIOR ADMINISTRATIVE STAFF

Sandra J. Matheson Executive Director

Michael J. Colleran General Counsel

Andrew H. Sawyer, CFA, CAIA Chief Investment Officer

Rebecca A. Grant Deputy Executive Director

James Dusch Deputy Executive Director

Sherry Tripp Vandrell, CMA, CGFM Director of Finance

Valerie E. Scott Associate Deputy Director

### PRINCIPAL PROFESSIONAL CONSULTANTS

Actuary: Cheiron, Inc.

Investment Consultant: Cambridge Associates

Auditors: BerryDunn

Internal Auditor: Randal L. Lloyd

See page 82 for a list of professional investment management firms. Information regarding commissions paid can be found on page 89.

### 2018 Legislative Update

## LEGISLATION ENACTED DURING THE 128th SECOND REGULAR and SECOND SPECIAL SESSIONS

# An Act to Authorize the Maine Public Employees Retirement System to Procure and Offer Long-term Disability Insurance

PL 2017, c. 378 [L.D. 176] Effective Date: August 1, 2018

This law authorizes MainePERS to contract with an insurance company to offer long-term disability insurance (LTDI) to members through their employers. It allows the board to adopt rules to implement LTDI and requires two reports to the Legislature, one by January 31, 2019 and the other by January 31, 2020, regarding the status of any LTDI program that is implemented.

## An Act to Align the Criteria Used by the Maine Public Employees Retirement System in Determining Veterans' Disability Claims with the Criteria Used by the United States Department of Veterans Affairs

PL 2017, c. 384 [L.D. 521] Effective Date: August 1, 2018

This law changes disability retirement benefit eligibility for veterans who receive federal service-connected disability benefits. Under this law, a veteran who is a MainePERS member and who has been awarded a service-connected disability based on a determination of individual unemployability is presumed to be disabled under the laws that govern the MainePERS disability program. The presumption may be rebutted based on evidence not considered by the federal program. This law applies to disability retirement benefit applications filed on or after October 1, 2018.

### An Act to Amend the Retirement Laws Pertaining to Participating Local Districts

PL 2017, c. 392 [L.D. 247] Effective Date: April 18, 2018

This bill pertains to the PLD Consolidated Plan. It makes clear that the following plan provisions are as set out in the rule (i.e., Chapter 803) that governs that plan: 1) inclusion of unused vacation/sick leave; 2) retire-rehire; 3) employer contributions; 4) cost-of-living adjustments; 5) early retirement reductions; and 6) withdrawal liability payments.

### An Act to Amend the Laws Governing Retirement Benefits for Capitol Police Officers

PL 2017, c. 439 [L.D. 1653] Effective Date: December 13, 2018

This law provides retroactive coverage in the 1998 Special Plan for Capitol Police Officers employed in that position on July 1, 2002 or hired thereafter, and employed as of the effective date of the law. This change is effective upon receipt of the funds necessary to pay the associated unfunded actuarial liability cost, as set forth in the enacted law.

continued on next page

### 2018 Legislative Update

(concluded)

# An Act Making Certain Appropriations and Allocations and Changing Certain Provisions of the Law Necessary to the Proper Operations of State Government

PL 2017, c. 460 [L.D. 925] Effective Date: July 9, 2018

This law is the Supplemental State budget, and Part K is the only section relevant to MainePERS. That Part sets forth how retirement benefits for certain correctional facility employees are to be computed if retirement results from the closure of a facility. Specifically, Part K permits eligible employees, as defined in the bill, to retire without a reduction for retiring before normal retirement age, contingent upon the funding of this benefit being received by MainePERS.

### An Act to Correct Errors and Inconsistencies in the Laws of Maine

PL 2017, c. 475 [L.D. 1894] Effective Date: September 12, 2018

This law is the errors and inconsistencies bill that makes corrections to previously enacted laws. Section 6 is the only MainePERS-related section, and corrects a cross-referencing error that was made in the System's omnibus bill last session.

### Resolve, To Continue a Review of the State Employee and Teacher Retirement Plan

Resolve, c. 57 [L.D. 1907] Effective Date: May 2, 2018

This Resolve authorizes the working group to continue to evaluate and design plan options for state employees and teachers. The working group is required to submit its final report to the Legislature no later than December 1, 2019.



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# FINANCIAL SECTION



Maine State Flower: White Pine Cone and Tassel



### INDEPENDENT AUDITOR'S REPORT

Board of Trustees of Maine Public Employees Retirement System

### **Report on the Financial Statements**

We have audited the accompanying statement of fiduciary net position of Maine Public Employees Retirement System (the System), a component unit of the State of Maine, as of June 30, 2018 and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, which collectively comprise the System's basic financial statements.

### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with U.S. generally accepted auditing standards and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates

made by management, as well as evaluating the overall presentation of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### **Opinion**

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the System as of June 30, 2018, and the changes in its fiduciary net position for the year then ended, in accordance with U.S. generally accepted accounting principles.

Board of Trustees of Maine Public Employees Retirement System

#### Other Matters

### Required Supplementary Information

U.S. generally accepted accounting principles require that Management's Discussion and Analysis and the required supplementary information as listed in the table of contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with U.S. generally accepted auditing, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### Additional Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the financial statements. The accompanying additional supplementary information as listed in the table of contents is presented for the purpose of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with U.S generally accepted auditing standards. In our opinion, the additional supplementary information is fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

### Report on Summarized Comparative Information

We have previously audited the System's June 30, 2017 basic financial statements and we expressed an unmodified opinion on those statements in our report dated October 31, 2017. In our opinion, the summarized comparative information presented herein as of and for the year ended June 30, 2017 is consistent, in all material respects, with the audited financial statements from which it has been derived.

### Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 31, 2018 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Berry Dunn McNeil & Parker, LLC

Manchester, New Hampshire October 31, 2018

### Introduction

This Management's Discussion and Analysis (MD&A) is prepared by the management staff of the Maine Public Employees Retirement System (MainePERS or the System) for the purpose of providing an overview of the System's financial statements.

### **Financial Reporting Structure**

The System's financial statements are prepared on an accrual basis of accounting in accordance with Governmental Accounting Standards Board (GASB) pronouncements. The accrual basis of accounting requires the recognition and recording of financial transactions and other related events when they occur and not just in conjunction with the inflows and outflows of cash and other resources.

The funds managed by the System are held in trust and consistent with state and federal law can only be used for the payment of pension and related benefits to its members or, in the case of the Retiree Health Insurance Trust Fund, for the payment of retiree health insurance premiums for eligible retirees of the State of Maine. The System's Board of Trustees, as fiduciary, establishes the System's investment policies and oversees their overall implementation.

The System reports five defined benefit retirement plans consisting of the State Employee and Teacher Plan, a multiple-employer cost sharing plan with a special funding situation; the Judicial Plan, a single employer plan; the Legislative Plan, a single employer plan; the PLD Consolidated Plan, a multiple-employer cost sharing plan; and the PLD Agent Plan, an agent multiple-employer plan. The System also reports a Group Life Insurance Plan covering active state employees (including judges and legislators), teachers, and participating employees of the PLD Plan as well as two multiple-employer cost sharing OPEB plans providing life insurance coverage in retirement for retired state employees and teachers and eligible retirees of the PLD Plans. In addition, the System reports certain defined contribution plans, the MainePERS OPEB Trust, and the Retiree Health Insurance Trust Fund.

### **Basic Financial Statements**

The Statement of Fiduciary Net Position reports the balance of Fiduciary Net Position restricted for future benefits as of the fiscal year end, with summarized values reported as of the previous fiscal year end. The Statement of Changes in Fiduciary Net Position reports the net change in Fiduciary Net Position for the fiscal year, with summarized values reported for the previous fiscal year. The System reports each as separate funds and in separate columns in the financial statements. Condensed versions of both statements are included in the following section.

The Schedules of Changes in the Plan's Net Pension Liability and Related Ratios (Required Supplementary Information) present the total pension liability and information indicating the source of changes in the liability for each defined benefit retirement plan administered by the System. In addition, the Schedules show summary information regarding each Plan's net position for the years presented. The Schedules also present each Plan's net pension liability as a percentage of the covered payroll.

The Schedules of Employer Contributions (Required Supplementary Information) present the actuarially determined contributions for each defined benefit plan and compares them to actual employer contributions for the period presented. They also provide the actual contributions as a percentage of covered payroll for each year.

The Schedule of Investment Returns (Required Supplementary Information) presents the annual money-weighted rate of return, net of investment expenses, for all of the defined benefit plans for each year presented.

The Schedules of Changes in the Plan's Net OPEB Liability and Related Ratios for the Group Life Insurance Plans (Required Supplementary Information) present the total OPEB liability and information indicating the source of changes in the liability for each OPEB plan administered by the System. In addition, the Schedules show summary information regarding each Plan's net position for the years presented. The Schedules also present each Plan's net OPEB liability as a percentage of the covered payroll.

The Schedules of Employer Contributions for the Group Life Insurance Plans (Required Supplementary Information) present the actuarially determined contributions for each OPEB plan and compare them to actual employer contributions for the periods presented. They also provide the actual contributions as a percentage of covered payroll for each year.

The Schedule of Investment Returns (Required Supplementary Information) presents the annual money-weighted rate of return, net of investment expenses, for all of the OPEB plans for each year presented.

(continued)

### **Financial Highlights and Analysis**

The following are the Condensed Comparative Statements of Fiduciary Net Position and Condensed Comparative Statements of Changes in Fiduciary Net Position for the System for the fiscal years ended June 30, 2018, 2017, and 2016:

Condensed Comparative Statements of Fiduciary (Dollar Values Expressed in Millions)	Net Posit	ion				
	June	e 30, 2018	June	e 30, 2017	June	e 30, 2016
Cash and Receivables	\$	68.8	\$	76.6	\$	65.8
Investments at Fair Value		14,952.4		13,950.8		12,716.4
Collateral on Loaned Securities		208.0		19.5		108.4
Other Assets		6.0		7.5		7.4
Total Assets	\$	15,235.2	\$	14,054.4	\$	12,898.0
Investment Management Fees Payable	\$	16.3	\$	15.2	\$	10.7
Obiligations Under Securities Lending Activities		208.0		19.5		108.4
Other Liabilities		14.1		14.8		14.5
Total Liabilities	\$	238.4	\$	49.5	\$	133.6
Fiduciary Net Position - Held in Trust	\$	14,996.8	\$	14,004.9	\$	12,764.4

	Jun	e 30, 2018	Jun	ne 30, 2017	Jun	ne 30, 2016
ADDITIONS:						
Member Contributions	\$	196.8	\$	194.1	\$	175.8
Employer Contributions		278.0		274.2		262.5
Non-Employer Contributing Entities Contributions		132.9		119.7		112.4
Total Investment Income		1,383.8		1,613.3		54.6
Transfers from Other Plans		0.4		0.3		6.6
Total Additions	\$	1,991.9	\$	2,201.6	\$	611.9
DEDUCTIONS:						
Benefits Paid	\$	959.3	\$	921.5	\$	879.9
Other		40.7		39.6		43.1
Total Deductions	\$	1,000.0	\$	961.1	\$	923.0
Net Increase (Decrease)	\$	991.9	\$	1,240.5	\$	(311.1)
Fiduciary Net Position - Held in Trust, Beginning of Year	\$	14,004.9	\$	12,764.4	\$	13,075.5
Fiduciary Net Position - Held in Trust, End of Year	\$	14,996.8	\$	14,004.9	\$	12,764.4

### Fiduciary Net Position

The Fiduciary Net Position of the System increased in fiscal year 2018 by \$991.9 million (7.1%) from the prior year Fiduciary Net Position. While lower than in 2017, investment returns were strong and contributed to the increase. Investment income was \$1,383.8 million in fiscal year 2018 compared to \$1,613.3 million in fiscal year 2017.

(continued)

Comparatively, the Fiduciary Net Position of the System increased in fiscal year 2017 by \$1,240.5 million (9.7%) from the prior year Fiduciary Net Position. Investment income was significantly higher than in the prior year due to strong returns on public equities and alternative assets. Investment income was \$1,613.3 million in fiscal year 2017 compared to \$54.6 million in fiscal year 2016.

#### <u>Assets</u>

Investments at Fair Value increased by \$1,001.6 million (7.2%) in fiscal year 2018. This increase in Investments at Fair Value combined with an increase of \$188.5 million in collateral on loaned securities and a decrease in cash and receivables of \$7.8 million contributed to an increase in total assets of \$1,180.8 million during the fiscal year. The System records the collateral on loaned securities due to its securities lending activity as an asset and corresponding liability. The increase of \$188.5 million in collateral on loaned securities arose due to increased market values and higher utilization rates for the domestic equity account. Non-cash collateral is not recorded in total assets on the System's financial statements.

Comparatively, Investments at Fair Value increased by \$1,234.4 million (9.7%) in fiscal year 2017. This increase in Investments at Fair Value combined with a decrease of \$88.9 million in collateral on loaned securities and an increase in cash and receivables of \$10.8 million contributed to an increase in total assets of \$1,156.4 million during the fiscal year. The decrease of \$89 million in collateral on loaned securities arose due to the timing of a portfolio restructure in the domestic equity account.

There were \$2.5 million in pending sales at June 30, 2018. There were no outstanding trades at June 30, 2017 or June 30, 2016.

### **Liabilities**

The System's custodian records an investment purchase or sale between the time it enters into a trade and the time that trade is settled. On June 30, 2018, total loans outstanding in the securities lending program were \$208 million. On June 30, 2017 and 2016, the total loans outstanding in the securities lending program were \$19.5 million and \$108.4 million, respectively.

### Additions to Fiduciary Net Position

Additions to Fiduciary Net Position during fiscal year 2018 totaled \$1,991.9 million compared to additions of \$2,201.6 million to Fiduciary Net Position in fiscal year 2017. This was largely due to the fact that investment income, net of fees and other deductions, decreased by \$229.5 million. The decrease in investment income relative to fiscal year 2017 is primarily attributable to public equity and alternative market returns.

Additions to Fiduciary Net Position during fiscal year 2017 totaled \$2,201.6 million compared to additions of \$611.9 million to Fiduciary Net Position in fiscal year 2016. This was largely due to the fact that investment income, net of fees and other deductions, increased by \$1,558.7 million. The increase in investment income is primarily attributable to public equity and alternative market returns.

The State's contributions on behalf of State employees totaled \$156.5 million, \$163.0 million, and \$144.1 million for fiscal years 2018, 2017, and 2016, respectively. The State's contributions on behalf of teachers totaled \$129.4 million, \$116.4 million, and \$112.5 million, for fiscal years 2018, 2017, and 2016, respectively. The State's contribution on behalf of judges totaled \$1.2 million, \$1.1 million, and \$1.1 million for fiscal years 2018, 2017, and 2016, respectively. Based on the funding methodology used and considering the funded status of the Legislative Plan, no employer contribution was required in fiscal years 2018, 2017 or 2016.

The balance of employer contributions reported is from local school district employers and Participating Local District (PLD) employers. Local school district employers pay the normal cost contribution on behalf of public school teachers. The normal cost rate as a percentage of earnable compensation for fiscal year 2018 was 3.97%; for fiscal years 2017 and 2016 the normal cost rate was 3.36%. The range of employer contributions in the PLD Consolidated Plan as a percent of earnable compensation in fiscal year 2018 was 3.9% to 15.7%; for fiscal year 2017 the range was 4.6% to 14.2%; and for fiscal year 2016 the range was 4.4% to 14%. Historically, the PLD Consolidated Plan's funded status and established funding approach resulted in employers of the PLD Consolidated Plan paying less than what the true normal cost would otherwise require. The employer rates have been incrementally increased over the past several years to reach a contribution rate closer to true normal cost.

Member and employer data, contribution and benefit data for the 12 non-consolidated PLDs are specific to each PLD and are obtainable from the System.

(continued)

### **Deductions from Fiduciary Net Position**

Total deductions from Fiduciary Net Position restricted for benefits during fiscal year 2018 increased by \$38.9 million (4%). The fiscal year 2018 increase was due in part to an increase in the number of recipients receiving benefits, as well as the increased cost of benefits paid and refunds and withdrawals of contributions. Benefit payments in fiscal year 2018 exceeded contributions by \$351.6 million. Contributions totaled \$607.7 million, and benefit payments totaled \$959.3 million.

Comparatively, total deductions from Fiduciary Net Position restricted for benefits during fiscal year 2017 increased by \$38.1 million (4.1%). The fiscal year 2017 increase was due in part to an increase in the number of recipients receiving benefits, as well as the increased cost of benefits paid and refunds and withdrawals of contributions. Benefit payments in fiscal year 2017 exceeded contributions by \$333.5 million. Contributions totaled \$588 million, and benefit payments totaled \$921.5 million.

### System Funding Status - Aggregate

### **Funding Progress** 85.0% 83.6% 83.2% 83.0% 82.0% 81.6% 80.2% 79.6% 80.0% 79.1% 75.0% 72.6% **Funding Ratio** 70.4% 70.0% 65.0% 60.0% 2011 2009 2010 2012 2013 2014 2015 2016 2017 2018 Year

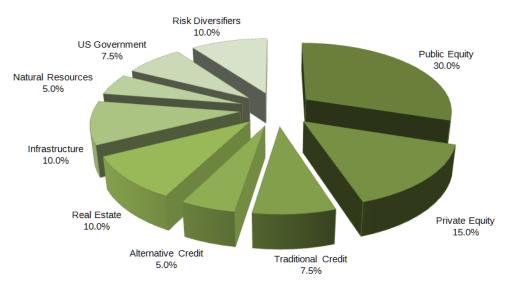
At June 30, 2018, the State Employee and Teacher, Judicial, Legislative and PLD defined benefit plans were actuarially funded at 83%, an increase from the actuarial funding level of 82% at June 30, 2017. As illustrated in the chart, the actuarial funded ratio of the System was 72.6% at June 30, 2009. This was followed by a significant decline in 2010 to 70.4%. In 2010, investment markets and returns improved over 2009, although not enough to offset the prior years' investment declines. Significant improvement in investment returns in 2011, combined with a decrease in the overall unfunded liabilities of the plan resulting from changes in plan benefit structure and changes in assumptions adopted following the completion of an experience study in 2011, pushed the funding level to 80.2% for this year. Modest investment returns, combined with increased deductions from the plan for benefits, contributed to the decrease in 2012. The increase in the funded ratio for 2013 and 2014 is attributable in part to strong investment returns during those years, in addition to changes in plan provisions and increased contribution rates. Lower investment returns combined with increased contribution rates in 2015 contributed to keeping the funding ratio level. The decrease in funding level in 2016 is attributable, in large part, to low investment returns due to the low return environment, combined with an increase in the overall liabilities of the plans resulting from changes in assumptions adopted following the completion of an experience study in 2016. The modest increases in 2017 and 2018 are attributable, in large part, to investment returns during those years.

(continued)

#### Investments

The assets of all the defined benefit retirement plans that the System administers are commingled for investment purposes.

# Target Asset Allocation Defined Benefit Retirement Plans



The System's investment portfolio for the defined benefit retirement plans is invested across nine asset classes: public equity, private equity, traditional credit, alternative credit, real estate, infrastructure, natural resources, US Government, and risk diversifiers. Publicly traded derivative securities are used in some portfolios to emulate one or more of the asset classes. The investment policy established by the System's Board of Trustees (the Board) in 2012 and as amended in December 2017 assigned strategic target allocations for these asset classes, as shown in the above chart.

Investments of the Group Life Insurance Plans and the Retiree Health Insurance Trust are invested separately from the assets of the defined benefit retirement plans. The target allocations for these assets are public equity (70%), real estate (5%), traditional credit (15%), and US Government (10%).

All of the assets invested by the System are in portfolios managed by professional investment management firms. These managers act as fiduciaries and invest the assets assigned to them in accordance with the Board's investment policy and their separate contractual arrangements. At June 30, 2018, total fair value of assets in these portfolios (together with the amounts otherwise managed) was \$15 billion. The total fair value of assets as of June 30, 2017 and June 30, 2016, respectively, was \$14 billion and \$12.7 billion. The investment return, net of all fees, for the fiscal year ended June 30, 2018 was 10.3%. The investment return for the fiscal years ended June 30, 2017 and June 30, 2016, respectively, was 12.5% and 0.6%. Investment returns in fiscal year 2018 were lower than in fiscal year 2017, due primarily to Public Equity and Alternative market returns. Over the five, ten and thirty year periods ended June 30, 2018, the average annual investment return for the total fund was 8.2%, 6.3%, and 8.2%, respectively.

### System Membership - Aggregate

The following membership counts for all of the defined benefit plans are derived from actuarial valuation data:

	2018	2017	% Change
Current active participants:			
Vested and nonvested	51,522	51,298	0.4%
Terminated participants			
Vested	10,414	10,379	0.3%
Inactives Due Refunds	46,963	45,850	2.4%
Retirees and beneficiaries receiving benefits	45,287	44,310	2.2%
Total Membership	154,186	151,837	1.5%

(concluded)

The number of active State employees at June 30, 2018 in the State Employee and Teacher plan was 12,447, a decrease of 236 from June 30, 2017. The number of Teachers at June 30, 2018 was 27,396, an increase of 243 from June 30, 2017. Membership for judges was 62, a decrease of 1 from the previous year. Membership for Legislators was 185, which represents no change from June 30, 2017. Total active membership in the PLD Consolidated Plan and the 12 non-consolidated plans at June 30, 2018 was 11,432, an increase of 218 from June 30, 2017.

#### **Group Life Insurance Plan**

The Group Life Insurance Plans provide life insurance coverage for eligible members of the defined benefit plans administered by the System. Eligible members include State, teacher and those PLD employees whose employers have elected to participate in the program, and whose positions are eligible for coverage. Eligible employees who elect coverage receive life insurance coverage while actively employed and may carry coverage into retirement. The following summarized data, stated in millions, is derived from actuarial valuation data for the Group Life Insurance Plan with respect to benefits in retirement:

	2018	2017	% Change
Total OPEB Liability	\$ 232.3	\$ 215.5	7.8%
Plan Net Position	110.1	102.0	7.9%
Net OPEB Liability	<b>\$</b> 122.2	\$ <u>113.5</u>	<u>7.7%</u>

### **Defined Contribution Plans**

The Section 401(a), Section 457 and Section 403(b) Plans administered by the System's Board of Trustees are defined contribution plans. These plans are provided as supplemental plans to the basic retirement benefits of employees of PLDs that elect to participate in the Defined Contribution Plans. Contributions may be made to the Plans subject to plan and Internal Revenue Code limitations. Investments in the Defined Contribution Plans are individually directed and controlled by plan participants.

### **Retiree Health Insurance Trust Fund**

The Maine State Legislature established the Retiree Health Insurance Post Employment Investment Trust (the Fund) as an irrevocable trust for the sole purpose of holding and investing funds appropriated or otherwise provided to the Fund for the purpose of accumulating assets to provide funding to the State's unfunded liability obligations for retiree health benefits. The Trustees of the System were named Trustees of the Investment Trust Fund. At June 30, 2018, the Fiduciary Net Position Held in Trust for the Fund was \$256,860,318.

### **Currently Known Facts, Decisions, or Conditions**

The 128<sup>th</sup> Legislature of the State of Maine enacted a Constitutional Resolution (L.D. 723), *Resolution, Proposing an Amendment to the Constitution of Maine to Reduce Volatility in State Pension Funding Requirements Caused by the Financial Markets.* This Resolution proposed to amend the Constitution of Maine to change the period over which experience losses in each of the State sponsored plans are amortized from 10 years to 20 years. This proposal was approved by voters in the statewide election ballot in November 2017 and became part of the Constitution in January of 2018.

The System's Board of Trustees adopted changes in the methodology for calculating contributions rates for the PLD Plan effective for rates beginning with fiscal year 2020. This new methodology introduces a level of risk sharing between the employers and members in the plan while at the same time providing for reduced volatility in those rates by implementing caps on those rates. More information about this newly adopted methodology can be found in the valuation report for the PLD Plan, available on the System's website.

### **Requests for Information**

Questions concerning this Management's Discussion and Analysis, other parts of the System's financial statements or the System's financial activities should be directed to Maine Public Employees Retirement System, Sherry Tripp Vandrell, Director of Finance, at PO Box 349, Augusta, Maine 04332 or at (207) 512-3100 or toll-free at (800) 451-9800.

# STATEMENT OF FIDUCIARY NET POSITION June 30, 2018 With Summarized Information as of June 30, 2017

Assets:	State Employee an <u>Teacher Pla</u>		Legislative Plan	PLD Consolidated <u>Plan</u>	PLD Agent Plan
Cash and cash					
equivalents (note 3) Investments at fair value (note 3):	\$ 27,547,295	\$ 298,177	\$ 45,720 \$	3,272,098 \$	108,907
Common equity securities Common/collective trusts Mutual funds	1,801,220,695 5,219,248,309			436,079,691 1,263,592,072	5,737,119 16,623,975
Partnerships	4,576,701,631	28,025,489	5,021,544	1,108,030,036	14.577,382
Total investments	11,597,170,635	71,015,417	12,724,382	2,807,701,799	36,938,476
Receivables: Contributions and	20 400 400			0.250.012	FO 166
premiums (notes 6 and 7) Accrued interest and dividends Due from brokers for	20,498,490 1,934,652		2,123	8,359,012 468,384	50,166 6,162
securities sold	2,023,030	12,388	2,220	489,781	6,444
Total receivables	24,456,172	24,235	4,343	9,317,177	62,772
Collateral on loaned securities (note 5) Capital assets, net of accumulated	166,090,889	1,017,060	182,234	40,210,988	529,021
depreciation	4,784,620	29,299	5,250	1,158,367	15,240
Total assets	11,820,049,611	72,384,188	12,961,929	2,861,660,429	37,654,416
Liabilities: Accounts payable Due to brokers for securities	5,441,150	33,319	5,970	1,317,315	17,331
purchased Other liabilities	3,301,711	20,218	- 3,623	799,352	10,516
Accrued investment management fees Obligations under securities	13,023,090	79,751	14,281	3,152,919	41,487
lending activities (note 5)	166,090,889	1,017,060	182,234	40,210,988	529,021
Total liabilities	187,856,840	1,150,348	206,108	45,480,574	598,355
Fiduciary net position – held in trust	\$ <u>11,632,192,771</u>	\$ <u>71,233,840</u>	\$ <u>12,755,821</u> \$	<u>2,816,179,855</u> \$	37,056,061

The accompanying notes are an integral part of these financial statements.

# STATEMENT OF FIDUCIARY NET POSITION June 30, 2018

### With Summarized Information as of June 30, 2017

Group Life Insurance Plan Active	Group Life Insurance Plar <u>Retired SET</u>	Group Life Insurance Plar Retired PLD	Defined Contribution Plans	MainePERS OPEB Trust	Retiree Health Insurance <u>Trust Fund</u>	2018 <u>Total</u>	2017 <u>Summarized</u>
\$ 338,959 \$	676,152	\$ 125,155	\$ 5,141 \$	- :	\$ - \$	32,417,604 \$	25,064,677
9,708,287 - - - 9,708,287	94,807,348 - - - 94,807,348	15,909,308 - - - 15,909,308	37,962,561 - - 37,962,561	13,624,292 - - 13,624,292	254,884,977 - - 254,884,977	2,256,043,596 6,964,047,804 - 5,732,356,082 14,952,447,482	2,803,727,386 6,802,126,877 289,082,747 4,055,848,239 13,950,785,249
394,689 –	- -	13,809 -	1,293 -	- -	2,000,000	31,317,459 2,423,168	48,388,544 2,790,982
						2,533,863	351,245
394,689	-	13,809	1,293	_	2,000,000	36,274,490	51,530,771
_	_	_	-	_	_	208,030,192	19,543,906
						5,992,776	7,472,527
10,441,935	95,483,500	16,048,272	37,968,995	13,624,292	256,884,977	15,235,162,544	14,054,397,130
434	4,238	711	_	-	_	6,820,468	7,660,527
705.000	- 4 405 755	-	-	-	-	- 7 470 070	23,030
785,832 704	1,185,755 6,878	224,479 1,154	8,054 —	833,950 1,020	6,480 18,179	7,179,970 16,339,463	7,070,455 15,207,564
					<del>_</del>	208,030,192	19,543,906
786,970	1,196,871	226,344	8,054	834,970	24,659	238,370,093	49,505,482
\$ <u>9,654,965</u> \$	<u>94,286,629</u> \$	\$ <u>15,821,928</u>	\$ <u>37,960,941</u> \$	\$ <u>12,789,322</u>	\$ <u>256,860,318</u> \$	<u> 14,996,792,451</u> \$	14,004,891,648

### STATEMENT OF CHANGES IN FIDUCIARY NET POSITION Year Ended June 30, 2018 With Summarized Information for the Year Ended June 30, 2017

Additions:	State Employee and <u>Teacher Plan</u>	Judicial Plan	Legislative Plan	PLD Consolidated <u>Plan</u>	PLD Agent <u>Plan</u>
Investment income:					
From investing activities:					
Net appreciation in the fair					
value of plan investments	\$ 1,098,029,726 \$				\$ 3,545,442
Interest	2,216,563	13,577	2,430	535,884	7,087
Dividends	57,446,461	351,774	63,030	13,907,921	182,974
Less: investment expenses	(80,941,472)	<u>(496,159</u> )	(88,453)	(19,492,131)	<u>(261,466)</u>
Net income from investing activities	1 076 751 270	6,600,314	1,175,282	250 429 050	2 474 027
From securities lending activities:	1,076,751,278	0,000,314	1,175,202	259,438,950	3,474,037
Securities lending income	744,631	4,560	817	180,277	2,372
Borrower rebates refunded	443,306	2,715	486	107,325	1,412
Management fees	(111,661)	(684)	(123)	(27,033)	(356)
Net income from securities			/		
lending activities	1,076,276	6,591	1,180	260,569	3,428
Total investment income	1,077,827,554	6,606,905	1,176,462	259,699,519	3,477,465
Contributions and premiums					
(notes 6 and 7):					
Members	140,844,880	603,875	153,881	48,050,202	68,609
Employers	211,251,144	1,179,328	_	56,092,662	594,730
Non-employer contributing entities	129,421,735	_,,	_	-	_
Transfers from other plans		<u> </u>			
·					
Total contributions and premiums	481,517,759	1,783,203	<u>153,881</u>	104,142,864	663,339
Total additions	1,559,345,313	8,390,108	1,330,343	363,842,383	4,140,804
Deductions:					
Benefits paid	792,397,468	3,804,709	427,063	147,516,358	2,788,425
Refunds and withdrawals	17,984,302	· · · -	32,682	4,571,527	–
Transfers to other plans	_	_	_	386,621	_
Claims processing expenses (note 7)	_	_	_	_	_
Administrative expenses	10,076,242	61,708	<u>11,002</u>	2,411,666	<u>33,056</u>
Total deductions	820,458,012	3,866,417	470,747	<u>154,886,172</u>	<u>2,821,481</u>
Not increase in fiduciany					
Net increase in fiduciary net position	738,887,301	4,523,691	859,596	208,956,211	1,319,323
net position	730,007,301	4,020,001	000,000	200,330,211	1,010,020
Fiduciary net position – held in trust, beginning of year	10,893,305,470	66,710,149	11,896,225	2,607,223,644	35,736,738
Fiduciary net position – held in trust, end of year	\$ <u>11,632,192,771</u> \$	<u>71,233,840</u> \$	<u>12,755,821</u> \$	<u>2,816,179,855</u>	\$ <u>37,056,061</u>

The accompanying notes are an integral part of these financial statements.

### STATEMENT OF CHANGES IN FIDUCIARY NET POSITION Year Ended June 30, 2018

### With Summarized Information for the Year Ended June 30, 2017

	Group Life surance Plan <u>Active</u>	Group Life Insurance Pla <u>Retired SE</u>	Group Life an Insurance Plan <u>Retired PLD</u>	Defined Contribution <u>Plans</u>	MainePERS OPEB Trust		n 2018 <u>Total</u>	2017 Summarized
\$	759,906 \$ 595 —	7,861,158 6,129	\$ 1,342,884 \$ 1,039	2,848,810 \$ 14 -	1,088,571 \$	21,343,495 \$	1,409,236,665 \$ 2,783,318 71,952,160	1,631,012,685 663,044 74,276,865
_	(6,042)	(62,449)	(10,599)	(47,189)	(8,869)	(72,259)	(101,487,088)	(93,795,000)
	754,459	7,804,838	1,333,324	2,801,635	1,079,702	21,271,236	1,382,485,055	1,612,157,594
	- -		_ _	_ _	_ _	_ _	932,657 555,244	568,031 743,944
_							(139,857)	(196,728)
							1,348,044	1,115,247
	754,459	7,804,838	1,333,324	2,801,635	1,079,702	21,271,236	1,383,833,099	1,613,272,841
_	3,865,718 1,041,734 – –	4,179,453 3,459,000	1,069,640 _ 	3,256,015 587,906 - 386,621	_ 5,943 _ 	2,000,000 - -	196,843,180 278,002,540 132,880,735 386,621	194,091,727 274,185,370 119,685,496 330,304
	4,907,452	7,638,453	1,069,640	4,230,542	5,943	2,000,000	608,113,076	588,292,897
	5,661,911	15,443,291	2,402,964	7,032,177	1,085,645	23,271,236	1,991,946,175	2,201,565,738
_	4,162,727 - - 66,641 73,496 4,302,864	6,579,719 - - 690,089 <u>769,718</u> <u>8,039,526</u>	1,410,216 - - 120,130 133,624 1,663,970	2,774,078 - 109,420 386,621 3,270,119	259,584 - - - - - - 259,584	- - - - 6,480 - 6,480	959,346,269 25,362,589 386,621 986,280 13,963,613 1,000,045,372	921,512,854 25,768,417 330,304 1,060,341 12,429,091 961,101,007
	1,359,047	7,403,765	738,994	3,762,058	826,061	23,264,756	991,900,803	1,240,464,731
_	8,295,918	86,882,864	15,082,934	34,198,883	11,963,261	233,595,562	14,004,891,648	12,764,426,917
\$_	<u>9,654,965</u> \$	<u>94,286,629</u>	\$ <u>15,821,928</u> \$	<u>37,960,941</u> \$		<u>256,860,318</u> \$_	<u>14,996,792,451</u> \$_	14,004,891,648

### NOTES TO FINANCIAL STATEMENTS June 30, 2018 and 2017

### 1. Overview of the Maine Public Employees Retirement System Benefit Plans

### **Background**

The Maine Public Employees Retirement System (the System or MainePERS), which is a component unit of the State of Maine, is the administrator of a public employee retirement system established and administered under the Laws of the State of Maine. The System was formerly named the Maine State Retirement System. The System provides pension, disability, and death benefits to its members, which include employees of the State, public school teachers (as defined by Maine law) and employees of 317 local municipalities and other public entities (participating local districts, or PLDs) in Maine, each of which contracts for participation in the System under provisions of the relevant statutes.

Individual PLDs are permitted by law to withdraw from participation in the System. Withdrawal precludes the PLD's nonmember employees, if any, and its employees hired subsequent to withdrawal from membership in the System. Depending on the circumstances and requirements of the PLD's participation under the System, a withdrawn PLD may have continuing funding obligations after withdrawal with respect to its employees who are active members at the time of withdrawal and who continue to be members thereafter, to its terminated vested employee members, and to its former employee members who are retired at the time of withdrawal.

### **Board of Trustees**

The System's Board of Trustees is comprised of eight members. State law specifies the composition of the Board, whose members are confirmed by the Legislature. Three trustees are System members, one of whom is proposed and elected by the Maine Education Association, one of whom is proposed and elected by the Maine State Employees Association, and one of whom is an active or retired PLD member appointed by the governing body of the Maine Municipal Association. Four other trustees are appointed by the Governor. Of these, one must be selected by the Governor from a list of nominees submitted by the Maine Retired Teachers Association and one must be a MainePERS retiree selected from a list of nominees submitted by State and/ or PLD retirees. The remaining two appointees are direct gubernatorial appointments, both of whom must be qualified through training or experience in investments, accounting, banking or insurance or as actuaries. All appointed trustees are required to have "a working knowledge of retirement policy and legal issues and a general knowledge and understanding of banking, finance, and investment practices." The eighth trustee is the State Treasurer, who serves ex-officio. All trustee terms are three years, except for the two-year term of the State Treasurer. The Board annually elects its chair and vice chair from among its members.

### **Defined Benefit Plans**

Pension funds managed by the System are constitutionally restricted and held in trust for the payment of pension and related benefits. The System's Board of Trustees (the Board), in its fiduciary capacity, establishes the System's investment policies and oversees their overall implementation. The System administers five defined benefit pension plans including the State Employee and Teacher Plan which includes the Governors' Plan, the Judicial Plan, the Legislative Plan, the PLD Consolidated Plan, and the PLD Agent Plan. The System maintains separate reserves and accounts and performs separate annual actuarial valuations for each pension plan. Additional information regarding each plan can be found in Note 6 of this report.

### Group Life Insurance Plans

The Group Life Insurance Plans (the Plans) were established by the State Legislature to provide group life insurance benefits, during active service as well as in retirement, to State employees, Teachers, members of the Judiciary and the Legislature, as well as Elected and Appointed Officers of the State, that are eligible for membership in the System. Group Life Insurance benefits are also provided to the employees of PLDs that elect to participate in the Plans. Generally, benefit plan provisions can only be amended through statutory change. Employees are eligible for coverage under the Plans, subject to their membership in one or more of the aforementioned eligible employment classes and any other conditions of eligibility that the Board may prescribe by rule or decision.

Group Life Insurance funds managed by the System are held in trust for the payment of benefits to participants and/or their beneficiaries. The System's Board of Trustees, in its fiduciary capacity, establishes the System's investment policies and oversees their overall implementation. The System maintains separate reserves and accounts for both active and retiree coverage and biennial actuarial valuations are performed for each plan within the program. In those years where a full actuarial valuation is not completed, a roll-forward of plan liabilities from the previous valuation to the current fiscal year end with expected benefit payments and accruals is conducted. The liabilities for fiscal year ended June 30, 2018 were calculated as part of a full actuarial valuation.

June 30, 2018 and 2017 continued

### **Defined Contribution Plans**

The Section 401(a), Section 457 and Section 403(b) Plans, administered by the System's Board of Trustees with funds held in trust, are defined contribution plans. These plans are available as supplemental plans to the basic retirement benefits of employees of PLDs that elect to participate in the Defined Contribution Plans. Contributions may be made to the Plans by plan participants subject to plan and Internal Revenue Code limitations. At June 30, 2018, participation in the defined contribution plans was as follows:

	<u>401(a) Plan</u>	457 Plan	403(b) Plan
Employers	9	70	1
Participants	77	633	374

Investments in the Defined Contribution Plans are individually directed and controlled by plan participants. Benefits for deferred compensation, employer contributions, and earnings on the accounts are not recognized by Plan participants for income tax purposes until actually paid to the participant or beneficiary.

### MainePERS OPEB Trust

The MainePERS OPEB Trust is an irrevocable trust established for the purpose of accumulating assets to provide funding for retiree health benefits and life insurance in retirement for qualified individuals who retire from MainePERS. The Trustees of the System were named Trustees of the MainePERS OPEB Trust. Contributions are made to the Trust on an annual basis in the amount equal to the actuarially determined contribution amount.

### Retiree Health Insurance Trust Fund

The Maine State Legislature established the Retiree Health Insurance Post Employment Investment Trust (Investment Trust Fund) as an irrevocable trust formed solely to hold and invest funds appropriated or otherwise provided to the Investment Trust Fund for the purpose of accumulating assets to provide funding to the State's unfunded liability obligations for retiree health benefits. The Trustees of the System were named Trustees of the Investment Trust Fund.

### 2. Summary of Significant Accounting Policies

### **Basis of Accounting**

The System's financial statements are prepared using the accrual basis of accounting.

### Comparative Summarized Information

The financial statements include certain prior-year summarized comparative information in total but not by fund. Such information does not include sufficient detail to constitute a presentation in conformity with generally accepted accounting principles. Accordingly, such information should be read in conjunction with the System's financial statements for the year ended June 30, 2017, from which the summarized information was derived.

### Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (US GAAP) requires management to make significant estimates and assumptions. These estimates affect the reported amounts of fiduciary net position at the date of the financial statements, the actuarial information included in the required supplementary information as of the actuarial information date, the changes in fiduciary net position during the reporting period and, when applicable, the disclosure of contingent assets and liabilities at the date of the financial statements, as reported in the notes to the financial statements. Actual results could differ from those estimates.

#### Revenue Recognition

Pension contributions and group life insurance premiums, as well as contributions to the Retiree Health Insurance Trust, are recognized as additions in the period when they become due pursuant to formal commitments or statutory or contractual requirements. Contributions to Defined Contribution Plans are recognized in the period they are contributed.

### June 30, 2018 and 2017 continued

Investment income includes net appreciation or depreciation in the fair value of investments, interest and dividend income, foreign currency transaction gains and losses, and securities lending income, less investment expenses, which include investment management and custodial fees and all other significant investment related costs. Dividends include income returns from partnerships. Investment income is recognized when earned and investment expenses are recorded when incurred.

### Benefits Paid and Refunds and Withdrawals

Pension and group life insurance benefits and contributions and premium refunds and withdrawals to the System's members and beneficiaries are recognized as deductions when due and payable in accordance with the terms of the statutes. In addition, an estimate is made for group life insurance death benefits incurred before year end but not reported to the System until after year end. These are reflected as other liabilities. Distributions from Defined Contribution Plans and the Retiree Health Insurance Trust are recognized in the period the disbursement is made.

### **Investments**

Investments are reported at fair value. Debt and equity securities that are traded on recognized exchanges are valued at the last sales price and the current exchange rates on the reporting date. Other regularly traded securities, including derivatives, are valued by the System's custodians through a variety of external sources. Investments that do not have an established market are reported at estimated fair value. The fair value of shares in common/collective trusts is based on unit values reported by the funds. The fair value of other investments, including private market partnerships, is based on third-party appraisals and valuations provided by the sponsor of the partnerships. Management reviews and approves all such appraisals and valuations prepared by other parties. Investment purchases and sales are recorded as of their trade date. Proceeds related to securities sold not yet purchased are carried as a liability and are adjusted to the fair value of the securities.

Assets of the defined benefit pension plans are pooled for investment purposes and are allocated to each plan based on each plan's fiduciary net position, as are investment expenses and administrative expenses. Assets of the Group Life Insurance Plans are pooled for investment purposes and are allocated to each plan based on each plan's fiduciary net position, as are investment expenses and administrative expenses. Other assets managed by the System are invested separately from the assets of the defined benefit pension plans and the Group Life Insurance Plans.

### Due to/from Brokers

Amounts due to/from brokers for securities purchased or sold consist of trades not yet settled.

### Cash and Cash Equivalents

The System considers all highly liquid debt instruments that have a maturity of 90 days or less when purchased to be cash equivalents.

### Capital Assets

All capital assets with a unit cost of \$5,000 or greater are capitalized and reported in the accompanying financial statements. Purchased capital assets are valued at cost where historical records exist. Where necessary, for real estate, estimates of original cost are derived from historical real estate appraisals, historical real estate tax valuation records, and relevant accounting information derived from the records.

Capital asset costs include the purchase price or construction cost, plus those costs necessary to place the asset in its intended location and condition for use.

Depreciation is calculated using the straight-line method with estimated useful lives of 3 to 40 years.

#### Administrative Expenses

The cost of administering each of the plans managed by the System is financed primarily by investment income.

June 30, 2018 and 2017 continued

### Risks and Uncertainties

The System makes investments in accordance with the Board of Trustees' investment policy in a combination of equities, fixed income securities, infrastructure, private equity, real estate, derivative financial instruments, other investment securities and mutual funds and common/collective trusts holding such investments. The investment policy specifically prohibits investment managers from using derivative financial instruments to introduce leverage without specific prior approval by the Board. Investment securities and securities underlying certain investments are exposed to various risks, such as interest rate risk, market risk, custodial credit risk and credit risk. Investments in the Defined Contribution Plans are individually directed and controlled by plan participants. Due to the level of risk associated with certain investment securities and the level of uncertainty related to changes in the value of investment securities, changes in the values of investment securities are likely to occur in the near term and it is at least possible that such changes could materially affect the amounts reported in the statement of fiduciary net position and the statement of changes in fiduciary net position.

### **Defined Benefit Contributions**

Contributions to the Defined Benefit Plans from employers and non-employer contributing entities are established by an actuarial valuation on the basis of actuarial assumptions related to economic indicators (e.g., interest rates, inflation rates), and member and retiree compensation and demographics. By law, the assumptions are adopted by the Board of Trustees based on recommendation of the System's actuary. The System is also required by Maine law to perform an actuarial experience study whenever the Board of Trustees, on recommendation of its actuary, determines such a study to be necessary for actuarial soundness or prudent administration.

### New Accounting Pronouncements

The System adopted Governmental Accounting Standards Board (GASB) Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* for the year ended June 30, 2018. This statement establishes requirements for governments providing postemployment benefits other than pensions to recognize their long-term obligation for those benefits. Adopting this statement had no material impact on the System's financial reporting.

The System adopted GASB Statement No. 85, *Omnibus 2017* for the year ended June 30, 2018. This statement establishes accounting and financial reporting requirements for blending component units, goodwill, fair value measurement, and postemployment benefits. Adopting this statement had no material impact on the System's financial reporting.

The System adopted GASB Statement No. 87, *Leases* for the year ended June 30, 2018. This statement establishes a single model for lease accounting for governments based on the principal that a lease is a financing of the right to use an underlying asset. Adopting this statement had no material impact on the System's financial reporting.

### 3. Cash and Cash Equivalents and Investments

The Board of Trustees is responsible for identifying the System's investment objective and establishing an investment policy to meet that objective. The Board relies on staff and consultants with appropriate expertise to establish investment policy, monitor compliance with that policy, and determine whether the investment objective has been met. The Board established the strategic asset allocation as part of its overall investment policy. The policy identifies the following investment classes and targets for all defined benefit pension plan assets: public equities (30%), private equities (15%), traditional credit (7.5%), alternative credit (5%), real estate (10%), infrastructure (10%), natural resources (5%), US Government (7.5%), and risk diversifiers (10%). For the group life insurance plan assets, the policy identifies four investment classes and targets: public equities (70%), real estate (5%), traditional credit (15%), and US Government (10%).

Custodial credit risk is the risk that in the event of a financial institution failure, the System's deposits may not be returned to it. The System has no formal policy for custodial credit risk. Cash and cash-like securities are held at two institutions: Bangor Savings Bank and JP Morgan. Cash balances at Bangor Savings Bank are insured by the Federal Deposit Insurance Corporation (FDIC) up to \$250,000. Bangor Savings Bank mitigates custodial credit risk through use of securities repurchase arrangements.

Cash equivalents at JP Morgan are invested in the JP Morgan Prime Money Market Fund. The JP Morgan Prime Money Market fund is composed of short term debt securities held in a collective fund for the benefit of the System and other investors. All securities purchased in the JP Morgan Prime Money Market must either be payable on demand or have a maturity not exceeding eighteen months from the time of purchase.

June 30, 2018 and 2017 continued

The System's cash and investments are not exposed to custodial credit risk (a) because the underlying investments are registered in the name of the System and held by the System's custodian or (b) because their existence is not evidenced by securities that exist in physical or book entry form.

These amounts are disclosed in the financial statements at June 30 as follows:

	<u>2018</u>	2017	
Cash and Cash Equivalents Investments	\$ 32,417,604 	\$ 25,064,677 13,950,785,249	
Total Fair Value	\$ <u>14,984,865,086</u>	\$ <u>13,975,849,926</u>	

Credit risk is the risk an issuer or other counterparty to an investment will not fulfill its obligations to the System. The System has no formal policy on credit risk. The following table summarizes the System's aggregate fixed income portfolio credit ratings at June 30:

Moody's Quality Rating	<u>2018</u>	<u>2017</u>
Aaa	\$ 2,035,877,181	\$ 2,215,353,977
Aa1	-	289,083
Aa2	116,319,937	133,831,771
A	310,557,536	330,747,375
Baa1	-	373,495,374
Baa2	 320,018,966	 27,376,136
Total Credit Risk Debt	\$ 2,782,773,620 (1)	\$ 3,081,093,716 (2)

<sup>(1)</sup> Includes direct investments in debt securities held by the System as well as debt securities underlying investments in common/collective trusts. In 2018, all amounts are from common/collective trusts.

Concentration of credit risk is the risk of loss that may be attributed to the magnitude of investment in a single issue. The System's investment policy places no limit on the amount the System may invest in any one issuer.

There were no individual investments that constitute 5% or more of fiduciary net position for the defined benefit pension plans administered by the System as of June 30, 2018. At June 30, 2017 individual investments that constitute 5% or more of fiduciary net position were as follows:

Pooled fixed income funds:
BlackRock 0-5 Year TIPS

\$ 1,020,258,202

There were no individual investments that constitute 5% or more of fiduciary net positon for the other post-employment benefit plans administered by the System as of June 30, 2018.

<sup>(2)</sup> Includes direct investments in debt securities held by the System as well as debt securities underlying investments in common/collective trusts and mutual funds. In 2017, the amount included from common/collective trusts is \$3,053,428,497; the amount included from mutual funds is \$27,665,219.

June 30, 2018 and 2017 continued

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The System has no formal investment policy related to managing interest rate risk. All of the System's fixed income portfolios are managed in accordance with contractual guidelines. Contractual guidelines generally specify a range of effective duration for the portfolio. Duration is widely used in the management of fixed income portfolios as a measure of a debt investment's exposure to fair value changes arising from changing interest rates. The System's interest rate risk is closely aligned with the Barclays Capital Aggregate Index. The following table details the System's interest rate risk for its debt investments at June 30, 2018, using the segmented time distribution method. Maturities are based on the weighted average maturities of underlying investments in the common/collective trusts.

		Mati	urities as of June 30, 20	18	
Investment Type	Fair <u>Value</u>	Less than <u>1 Year</u>	1 to 6 <u>Years</u>	6 to 10 <u>Years</u>	10+ <u>Years</u>
Common/ Collective Trusts	\$2,782,773,620	) \$ <u>202,057,193</u>	\$ <u>1,762,427,930</u>	\$590,852,409	\$ 227,436,088
Total	\$ 2,782,773,620	\$ 202,057,193	\$ 1,762,427,930	\$ 590,852,409	\$ 227,436,088

Foreign currency risk is the risk that changes in exchange rates will adversely impact the recorded fair value of an investment. The System does not have a formal investment policy limiting the amount of foreign currency exposure of its investments. The System's currency exposures reside primarily in the System's international equity investments. The System may hedge a portfolio's foreign currency exposure with currency forward contracts depending on their views of the currency relative to the dollar. All of the System's portfolios are managed in accordance with contractual guidelines. The System has nearly eliminated all direct exposure to foreign currency by using index funds which means the System owns units of U.S. dollar denominated commingled funds rather than conducting transactions directly in foreign currency. The System is still indirectly exposed to all the foreign currencies within the index.

June 30, 2018 and 2017 continued

The System's direct and indirect exposure to foreign currency risk in U.S. dollars as of June 30, 2018 is highlighted in the following table:

Currency	<u>Total</u>	
Australian Dollar	\$ 110,385,042	
Brazilian Real	33,859,363	
British Pound Sterling	351,093,951	
Canadian Dollar	153,898,031	
Chilean Peso	6,421,888	
Chinese Yuan	2,075,357	
Chinese Yuan Renminbi	8,893	
Colombian Peso	2,786,652	
Czech Koruna	1,101,755	
Danish Krone	27,206,606	
Egyptian Pound	978,913	
Euro	918,505,903	
Hong Kong Dollar	192,695,866	
Hungarian Forint	1,693,074	
India Rupee	50,278,374	
Indonesian Rupiah	11,048,686	
Israel Shekels	4,421,549	
Japanese Yen	380,730,025	
Malaysian Ringgit	13,566,035	
Mexican Peso	16,983,309	
New Zealand Dollar	3,326,675	
Norwegian Krone	11,764,722	
Pakistani Rupee	410,298	
Peruvian Sol	18	
Phillippine Peso	5,497,941	
Polish Zloty	6,391,121	
Qatar Riyal	4,454,023	
Russian Ruble	17,455,159	
Singapore Dollar	20,145,294	
South African Rand	37,442,539	
South Korean Won	85,038,389	
Swedish Krona	41,764,603	
Swiss Franc	125,417,474	
Thaiwan Dollar	68,168,697	
Thai Baht	12,518,218	
Turkish Lira	4,382,491	
United Arab Emirates Dirham	3,178,423	
Total	\$ 2,727,095,357	

The System has entered into contracts to invest in partnerships with a focus on private equity, infrastructure, and real estate investment strategies. As of June 30, 2018, the value of these investments is approximately \$5.7 billion and the remaining funding commitment is approximately \$3.0 billion.

June 30, 2018 and 2017 continued

For the year ended June 30, 2018, the annual money-weighted rate of return on all defined benefit plan investments, net of investment expenses, was 10.3%. For the year ended June 30, 2018, the annual money-weighted rate of return on all other post-employment benefit (OPEB) plan investments, net of investment expense, was 9.0%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested, based on monthly calculations.

The System categorizes its fair value measurements within the fair value hierarchy established by US GAAP. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets. Level 2 inputs are other significant observable inputs. Level 3 inputs are unobservable inputs. The System has the following recurring fair value measurements at June 30:

	Fair Value Measurements Using								
	<u>J</u>	une 30, 2018		Level 1		Level 2	<u>I</u>	_evel 3	
Investments by fair value level Common Equity Securities	\$	2,256,043,596	\$	2,256,043,596	\$	-	\$	-	
Common/Collective Trusts		6,964,047,804		-		6,964,047,804		-	
Collateral from loaned securities		208,030,192				208,030,192	_		
Total investments by fair value level		9,428,121,592	\$	2,256,043,596	\$	7,172,077,996	\$ =		
Investments measured at net asset value (Na	AV)								
Alternative Credit		278,210,721							
Infrastructure		1,564,947,292							
Natural Resources		607,863,422							
Private Equity		1,978,985,874							
Real Estate (1)		1,302,348,773							
Total investments measured at NAV		5,732,356,082							
Total investments measured at fair value	\$	15,160,477,674							
(1) Includes common/collective trust funds cor	ntainir	ng real estate.							

			Fair Va	alue I	Measurements Usin	g	
		June 30, 2017	Level 1		Level 2		Level 3
Investments by fair value level Common Equity Securities	\$	2,803,727,386	\$ 2,803,727,386	\$	-	\$	-
Common/Collective Trusts		6,802,126,877	-		6,802,126,877		-
Mutual Funds		289,082,747	289,082,747		-		-
Collateral from loaned securities		19,543,906			19,543,906		
Total investments by fair value level		9,914,480,916	\$ 3,092,810,133	\$	6,821,670,783	\$	<u> </u>
Investments measured at NAV							
Alternative Credit		132,641,219					
Infrastructure		1,112,730,413					
Natural Resources		477,507,847					
Private Equity		1,079,017,398					
Real Estate (1)		1,253,951,362					
Total investments measured at NAV		4,055,848,239					
Total investments measured at fair value	\$	13,970,329,155					
(1) Includes common/collective trust funds of	onta	ining real estate.					

June 30, 2018 and 2017 continued

## Equity and Fixed Income Securities

Equity and fixed income securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. The mutual funds classified in Level 1 of the fair value hierarchy are valued based on their holdings of equity and fixed income securities which are valued using prices quoted in active markets for those securities.

## Common Collective Trusts

Units of collective investment funds, including short-term investment funds, are valued based on the unit value determined for each fund on the valuation date. Valuation of each fund is determined each day the Fund is open for contributions and redemptions and, for financial reporting purposes, on the report date should the reporting period end on a date the Fund is not open. Unit values are determined by dividing each Fund's investments at fair value by the number of units outstanding on the valuation date.

## Investments Measured at NAV

Alternative investments are generally reported at the NAV obtained from statements provided by the investment managers and assessed by the System as reasonable.

NAVs determined by investment managers generally consider variables including operating results, projected cash flows, recent sales prices and other pertinent information, and may reflect discounts for the illiquid nature of certain investments held. Due to the inherent uncertainties in valuation, the estimated fair values in NAV calculations may differ significantly from values that would have been used had a ready market existed.

The fair value method for investments measured at NAV per share (or its equivalent) is presented in the following tables:

	June 30, 2018					
Investments Measured at NAV		<u>Fair Value</u>		Unfunded Commitments		
Alternative Credit (1)	\$	278,210,721	\$	252,161,727		
Infrastructure funds (2)		1,564,947,292		946,994,873		
Natural Resources (3)		607,863,422		239,087,927		
Private Equity (4)		1,978,985,874		1,268,429,828		
Real estate funds (5)		1,302,348,773		324,025,018		
Total investments measured at NAV	\$	5,732,356,082	\$	3,030,699,373		

	June 30, 2017					
Investments Measured at NAV		<u>Fair Value</u>		Unfunded <u>ommitments</u>		
Alternative Credit (1)	\$	132,641,219	\$	46,519,372		
Infrastructure funds (2)		1,112,730,413		366,746,623		
Natural Resources (3)		477,507,847		294,627,100		
Private Equity (4)		1,079,017,398		2,096,240,305		
Real estate funds (5)		1,253,951,362		343,425,348		
Total investments measured at NAV	\$	4,055,848,239	\$	3,147,558,748		

June 30, 2018 and 2017 continued

- (1) Alternative Credit funds are funds that invest primarily in debt instruments issued by non-investment grade and unrated entities. Alternative credit investments are expected to pay or accrue periodic interest and to return principal at maturity. The fair values in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. Alternative Credit funds are typically structured as partnerships with fixed lifetimes. A typical structure is a 7-year fund life, where the fund can call capital for investments for 3 years, and then will return capital as loans mature throughout the life of the fund. These funds typically have no provisions for redemptions, though the System's interests could be sold on a secondary market.
- (2) Infrastructure funds are funds that invest primarily in infrastructure assets such as roads, ports, pipelines, and airports, primarily in the US and Europe. The fair values in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These funds are generally not available for redemption, and distributions are received as underlying investments within the funds are liquidated, which on average can occur over a span of 10 or more years.
- (3) Natural Resource funds are funds that invest primarily in assets and businesses related to natural resources such as farming, timber, and mining. The fair values in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These funds are generally not available for redemption, and distributions are received as underlying investments within the funds are liquidated, which on average can occur over a span of 10 or more years.
- (4) Private Equity funds are funds that invest primarily in debt and equity securities of private businesses. The fair values in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These funds are generally not available for redemption, and distributions are received as underlying investments within the funds are liquidated, which on average can occur over a span of 10 or more years.
- (5) Real Estate funds are funds that invest primarily in commercial real estate and real estate debt. The fair values in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. The majority of these investments (85% of dollar value) are available for redemption, subject to the timing of asset disposition. The remaining funds are generally not available for redemption, and distributions are received as underlying investments within the funds are liquidated, which on average can occur over a span of 10 or more years.

## 4. Derivative Securities

Derivative financial instruments are financial contracts whose value depends on the value of one or more underlying assets, reference rates or financial indices. They include futures, forwards, options, and swap contracts. In addition, some traditional securities can have derivative-like characteristics, e.g., asset-backed securities, including collateralized mortgage obligations, which are sensitive to changes in interest rates and to prepayments.

The System may be a party, both directly and indirectly, to various derivative financial investments that are used in the normal course of investing to enhance expected returns on investments, to manage the risk of exposure to changes in value of investments due to fluctuations in market conditions, and to gain passive exposure to markets. In addition to normal market risks these investments may involve, to varying degrees, elements of interest rate risk, credit risk, leverage risk, counterparty risk, and custodial credit risk.

Leverage risk may be created with derivatives. Financial leverage generally involves borrowing and then reinvesting the proceeds with the hope of earning a higher rate of return than the borrowing costs. With derivative instruments economic leverage may be effectively created without any explicit borrowing. Leveraged investments may be more volatile than if an investment had not been leveraged. Leveraging tends to exaggerate the effect of any increase or decrease in the value of an underlying investment. In a leveraged transaction an amount more than the initial investment may be lost. The System's investment policy requires specific Board approval of any investment strategy that involves the use of direct financial leverage.

Counterparty risk is the risk that the counterparty to a derivative transaction is unwilling or unable to deliver on their obligations to the System.

The System manages leverage risk and counterparty risk on a manager by manager basis by establishing guidelines with each manager. The manager is customarily allowed to invest within these predetermined guidelines.

The System's managers may also invest in swaps. Interest rate swaps are used to adjust interest rate and yield curve exposures and substitute for physical securities. Long swap positions increase exposure to long term rates; short positions decrease exposure. Credit default swaps are used to manage credit exposure. Purchased credit default swaps decrease credit exposure, while written credit default swaps increase exposure. Total return swaps are a means to gain exposure to an index.

June 30, 2018 and 2017 continued

The System may also hold investments in futures and options, which are used to manage various risks within the portfolio. A financial futures contract is an agreement between two parties to buy or sell units of a particular index or a certain amount of a security at a set price on a future date. The System may purchase and sell financial futures contracts to hedge against the effect of changes in the values of securities it owns or expects to purchase.

In addition to the derivative financial instruments directly held, the System may have indirect exposure to risk through its ownership interests in commingled investment funds, which use, hold or write derivative financial instruments. There also may be indirect exposure in the securities lending programs in which the System participates, in which some collateral pools may include derivatives (note 5). Where derivatives are held in those funds/pools, risks and risk management are as described above.

The System did not have any direct derivative investments as of June 30, 2018 or 2017 or during the years then ended.

## 5. Securities Lending

The System has entered into agreements with its master custodian to lend to broker-dealers and other entities any type of security held in the System's portfolio and held with the master custodian. Securities are loaned against collateral that may include cash, U.S. government securities and irrevocable letters of\_credit. U.S. securities are loaned against collateral generally valued at 102% of the market value of the securities plus any accrued interest. Non-U.S. securities are loaned against collateral valued at 105% of the market value of the securities plus any accrued interest.

Noncash collateral cannot be pledged or sold unless the borrower defaults. As a result, those securities are excluded from both assets and liabilities.

All securities loans can be terminated on demand by either the lender or the borrower. The average term of the System's loans was approximately 1 day and 6 days as of June 30, 2018 and 2017, respectively.

Cash collateral is invested in a short-term investment account which had an interest sensitivity of 22 and 11 days as of June 30, 2018 and 2017, respectively. Cash collateral may also be invested separately in "term loans," in which case the investments match the loan term. These loans can be terminated on demand by either lender or borrower.

During fiscal years 2018 and 2017, there were no violations of legal or contractual provisions, and no borrower or lending agent default losses identified to the System by the securities lending agent. Securities lending earnings are credited to the System on approximately the fifteenth day of the following month.

Custodial credit risk is the risk that in the event of the insolvency of a borrower, and the master custodian has failed to live up to its contractual responsibilities relating to the lending of those securities, the System's securities are not returned to it. The master custodian's responsibilities include performing appropriate borrower and collateral investment credit analyses, demanding adequate types and levels of collateral, and complying with applicable Department of Labor and Federal Financial Institutions Examination Council regulations concerning securities lending. At June 30, 2018 and 2017, all of the collateral for securities lending is subject to custodial credit risk.

Because of the program's collateralization of loans, generally at 102% (or more), plus accrued interest for fixed income securities, the System believes that there is no material credit risk.

Some of the System's assets are held in common/collective trusts and are subject to similar agreements arranged by those trusts. The income from those arrangements and the associated collateral are not included in the securities lending amounts reported.

## NOTES TO FINANCIAL STATEMENTS June 30, 2018 and 2017 continued

Aggregate securities on loan by asset class are as follows:

	2018	2017
Domestic equity securities on loan	\$ <u>271,974,045</u>	\$ <u>65,665,101</u>
Aggregate securities lending collateral: Short-term investment collateral pool Noncash collateral (debt and equity securities, at fair value)	\$ 208,030,192 	\$ 19,543,906 47,655,294
Total collateral	\$ <u>278,145,076</u>	\$ <u>67,199,200</u>
Collateral ratio	<u>102.3</u> %	<u>102.3</u> %

## 6. Defined Benefit Plans

## State Employee and Teacher Plan

The State Employee and Teacher Plan administered by MainePERS is a multiple-employer cost sharing plan with a special funding situation. As of June 30, 2018 there were 236 employers, including the State of Maine, participating in the plan. The State of Maine is also a non-employer contributing entity in that the State pays the unfunded actuarial liability on behalf of teachers, while school districts contribute the normal cost, calculated actuarially, for their teacher members.

Plan membership counts for the State Employee and Teacher Plan at June 30 are as follows:

	<u>2018</u>	2017
Current participants: Vested and non-vested Terminated participants:	39,843	39,836
Vested Inactive due refunds Retirees and beneficiaries receiving benefits	7,965 39,074 <u>35,601</u>	8,010 38,463 <u>34,870</u>
	122,483	121,179

## Judicial Plan

The Judicial Plan administered by MainePERS is a single-employer plan offered by the State of Maine.

Plan membership counts for the Judicial Plan at June 30 are as follows:

	2018	2017
Current participants: Vested and non-vested	62	63
Terminated participants: Vested Inactive due refunds Retirees and beneficiaries receiving benefits	3 1 <u>75</u>	2 1 <u>75</u>
	<u>141</u>	<u>141</u>

June 30, 2018 and 2017 continued

## Legislative Plan

The Legislative Plan administered by MainePERS is a single-employer plan offered by the State of Maine.

Plan membership counts for the Legislative Plan at June 30 are as follows:

	2018	2017
Current participants:		
Vested and non-vested	185	185
Terminated participants:		
Vested	113	120
Inactive due refunds	107	110
Retirees and beneficiaries receiving benefits	<u>185</u>	<u> 185</u>
	<u>590</u>	600

## PLD Consolidated Plan

The PLD Consolidated Plan administered by MainePERS is a multiple-employer cost sharing plan. Eligible employers (districts) are defined in Maine statute. As of June 30, 2018 there were 304 employers participating in the plan.

Plan membership counts for the PLD Consolidated Plan at June 30 are as follows:

	<u>2018</u>	<u>2017</u>	
Current participants:  Vested and non-vested	11,416	11,195	
Terminated participants: Vested Inactive due refunds Retirees and beneficiaries receiving benefits	2,319 7,779 9,256	2,234 7,274 9,006	
	_30,770	29,709	

## PLD Agent Plan

The PLD Agent Plan administered by MainePERS is an agent multiple-employer plan for financial reporting purposes. This plan is an aggregation of single employer plans that were open when the PLD Consolidated Plan began. Under the legislation that created the consolidated plan, single employers could either join the consolidated plan whereby the single employer plan would end, or they could opt to not join the plan and continue to maintain their single employer plan as a closed plan until there were no further liabilities for pension, at which time the single employer plan would be dissolved. As of June 30, 2018 there were 12 employers in the plan.

Plan membership counts for the PLD Agent Plan at June 30 are as follows:

	2018	2017	
Current participants:  Vested and non-vested	16	19	
Terminated participants: Vested	14	13	
Inactive due refunds Retirees and beneficiaries receiving benefits	2 170	2 <u>174</u>	
	202	208	

June 30, 2018 and 2017 continued

## **Benefits**

Benefit terms are established in Maine statute; in the case of the PLD Consolidated Plan, an advisory group, also established by Maine statute, reviews the terms of the plan and periodically makes recommendations to the Legislature to amend the terms. The System's retirement programs provide defined retirement benefits based on members' average final compensation and service credit earned as of retirement. Vesting (i.e., eligibility for benefits upon reaching qualification) occurs upon the earning of five years of service credit (effective October 1, 1999, the prior ten year requirement was reduced by legislative action to five years for State employees and teachers; separate legislation enacted the same reduced requirement for judges, legislators, and employees of PLDs). In some cases, vesting occurs on the earning of one year of service credit immediately preceding retirement at or after normal retirement age. Normal retirement age for State employees and teachers, judges and legislative members is age 60, 62 or 65. The normal retirement age is determined by whether a member had met certain creditable service requirements on specific dates, as established by statute. For PLD members, normal retirement age is 60 or 65. The monthly benefit of members who retire before normal retirement age by virtue of having at least 25 years of service credit is reduced by a statutorily prescribed factor for each year of age that a member is below her/his normal retirement age at retirement. The System also provides disability and death benefits which are established by statute for State employee and teacher members and by contract with other participating employers under applicable statutory provisions.

Upon termination of membership, members' accumulated employee contributions are refundable with interest, credited in accordance with statute. Withdrawal of accumulated contributions results in forfeiture of all benefits and membership rights. The annual rate of interest credited to members' accounts is set by the System's Board of Trustees and is currently 2.4%.

## **Funding Policy**

The Maine Constitution, Maine statutes and the System's funding policy provide for periodic employer contributions in addition to the normal cost contributions for the State Employee and Teacher Plan. These are actuarially determined amounts that, based on certain actuarial assumptions, are sufficient to fully fund, on an actuarial basis, the State Employee and Teacher Retirement Plan by the year 2028 (Unfunded Actuarial Accrued Liability (UAAL) payments). Level percentage of payroll employer contribution rates are determined using the entry age normal actuarial funding method. The System also uses the level percentage of payroll method to amortize the unfunded liability of the State Employee and Teacher Retirement Plan. For participating employers in the PLD Agent Plan, the level percentage of payroll method is also used.

## Net Pension Liability – State Employee and Teacher Plan

The components of the net pension liability of the State of Maine and participating teacher employers, stated in millions of dollars as of June 30, 2018, were as follows:

Total pension liability Plan fiduciary net position	\$ 14,031.2 
Net pension liability	\$ <u>2,399.0</u>
Plan fiduciary net position as a percentage of the total pension liability	82.9%

## Net Pension Liability - Judicial Plan

The components of the net pension asset of the State of Maine for the Judicial Plan, stated in millions of dollars as of June 30, 2018, were as follows:

Total pension liability Plan fiduciary net position	\$ 68.3 
Net pension (asset)	\$ <u>(2.9)</u>
Plan fiduciary net position as a percentage of the total pension liability	104.3%

June 30, 2018 and 2017 continued

## Net Pension Liability - Legislative Plan

The components of the net pension asset of the State of Maine for the Legislative Plan, stated in millions of dollars as of June 30, 2018, were as follows:

Total pension liability Plan fiduciary net position	\$ 8.6 <u>12.8</u>	
Net pension (asset)	\$ <u>(4.2</u> )	
Plan fiduciary net position as a percentage of the total pension liability	149.0%	6

## Net Pension Liability - PLD Consolidated Plan

The components of the net pension liability of the PLD Consolidated Plan participating employers, stated in millions of dollars as of June 30, 2018, were as follows:

Total pension liability Plan fiduciary net position	\$ 3,089.9 
Net pension liability	\$ <u>273.7</u>
Plan fiduciary net position as a percentage of the total pension liability	91.1%

## **Actuarial Methods and Assumptions**

Actuarial valuations of ongoing plans involve estimates of the values of reported amounts and assumptions about the probability of occurrence of events far into the future. Assumptions in an actuarial valuation typically include projections concerning future employment, mortality, and inflation. Actuarially determined contributions are subject to continual periodic revision as actual results are compared to past expectations and new estimates are made concerning the future. The Schedules of Changes in Net Pension Liabilities and Related Ratios, presented as Required Supplementary Information immediately following the Notes to Financial Statements, present multi-year trend information about whether the fiduciary net position of the plan is increasing or decreasing over time relative to the total pension liability of the plan.

Projections of benefits for financial reporting purposes are based on the provisions of the plans in effect at the time of each valuation and the historical pattern of sharing of costs between the employer and plan members. Actuarial methods and assumptions include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the funding methodologies.

The expected value of assets takes the prior year's actuarial value of assets and adjusts it for contributions, benefit payments, and expected interest earnings at the assumed rate for each plan. One-

third of the difference between this expected value of assets and the actual market value of assets is added to or subtracted from the expected value to provide the actuarial value of assets.

Costs are developed using the entry age normal cost method (based on a level percentage of covered payroll).

The initial unfunded actuarial pension liability of the State Employee and Teacher Program is amortized on a level percentage of payroll on a closed basis. The remaining amortization period as of June 30, 2018 was 10 years. All other gains, losses, and changes are amortized over twenty-year periods beginning on the date as of which they occur. The net pension liability of the Judicial and Legislative Plans is amortized on an open basis over a period of ten years. The net pension liability of the PLD Consolidated Plan is amortized on a level percentage of payroll using a method where a separate twenty-year closed period is established annually for the gain or loss for that year. The amortization period can have a significant impact on contribution rates developed through the annual valuation process.

The total pension liability was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement period. These same assumptions were used in the actuarial valuation as of June 30, 2017, unless otherwise noted.

June 30, 2018 and 2017 continued

	State Employee and Teacher Plan	Judicial Plan	Legislative Plan	PLD Consolidated Plan	
Investment Rate of Return	Per annum, compounded annually: 6.75% for June 30, 2018 and 6.875% for June 30, 2017				
Inflation Rate	Inflation Rate 2.75%				
Annual Salary Increases, including Inflation	State employees, 2.75% - 8.75%; Teachers, 2.75% - 14.50%	2.75%	2.75%	2.75% - 9.00%	
Cost of Living Benefit Increases	2.20%			1.91% for June 30, 2018 and 2.20% for June 30, 2017	
Mortality Rates	For active members and non-disabled retirees of the State employees and teachers, legisl judicial, and PLD plans, the RP2014 Total Dataset Healthy Annuitant Mortality Table, for mal females, is used. For all recipients of disability benefits, the RP2014 Total Dataset Disabled A Mortality Table, for males and females, is used.			ortality Table, for males and all Dataset Disabled Annuitant	

The actuarial assumptions used in the June 30, 2018 and June 30, 2017 actuarial valuations were based on the results of an actuarial experience study for the period of June 30, 2012 to June 30, 2015.

The long-term expected rate of return on Defined Benefit Plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation) are developed for each major class of assets. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of June 30, 2018 are summarized in the following table:

	Asset Class	Long-Term Expected Real Rate of Return
	Public equities	6.0%
	US Government	2.3
	Private equity	7.6
	Real assets	
	Real estate	5.2
	Infrastructure	5.3
	Natural resources	5.0
	Traditional Credit	3.0
	Alternative Credit	4.2
	Diversifiers	5.9
<b>\</b>		

## Discount Rate

The discount rate used to measure the total pension liability for each of the Defined Benefit Plans was 6.75%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer and non-employer entity contributions will be made at contractually required rates, actuarially determined. Based on these assumptions, the fiduciary net position for each of the Defined Benefit Plans was projected to be available to make all projected future benefit payments to current plan members. Therefore, the long-term expected rate of return on investments was applied to all periods of projected benefit payments to determine the total pension liability.

## Sensitivity of the net pension liability to changes in the discount rate

The following table presents the net pension liability for the State Employee and Teacher Plan, Judicial Plan, Legislative Plan, and PLD Consolidated Plan calculated using the discount rate of 6.75%, as well as what the net pension liability would be if it were calculated using a discount rate of one percentage point lower (5.75%) or one percentage point higher (7.75%) than the current rate:

June 30, 2018 and 2017 continued

	1%	Current	1%
	Decrease	Rate	Increase
	<u>(5.75%</u> )	<u>(6.75%</u> )	(7.75%)
Net Pension Liability/(Asset): State Employee and Teacher Plan Judicial Plan Legislative Plan PLD Consolidated Plan	\$ 4,118,391,649	\$ 2,399,008,162	\$ 963,017,602
	3,241,765	(2,941,916)	(8,316,508)
	(3,338,833)	(4,195,871)	(4,939,812)
	645,021,221	273,677,365	(73,427,244)

Sensitivity of the net pension liability to changes in the discount rate for individual single employer plans making up the PLD Agent Plan can be found in each Plan's annual actuarial report, available by contacting the System.

## **Contributions**

Retirement benefits are funded by contributions from members and employers and by earnings from investments. Disability and death benefits are funded by employer normal cost contributions and by investment earnings. Member and employer normal cost contributions are each a percentage of applicable member compensation. Member contribution rates are defined by law or MainePERS' Board rule and depend on the terms of the plan under which a member is covered. Employers' contributions are determined by actuarial valuations.

Included in the Employer and Non-employer Contributing Entities Contributions reported in the statement of changes in fiduciary net position are contributions received from the State of Maine on behalf of state employees and teachers in the total amount of \$287.1 million and \$279.4 million, and for judges in the total amount of \$1.2 million and \$1.1 million, for the years ended June 30, 2018 and 2017, respectively. There were no contributions due from the State of Maine on behalf of legislators in 2018 or 2017.

Retirement contribution rates for all employee members are set by law. Employer normal cost retirement contribution rates as applied to State employee members' and teacher members' compensation are the actuarially determined rates. The UAAL rate as applied to State employee members' compensation is first established through the annual valuation process as an amount that will meet the required UAAL payment amount; it is then adjusted in the State's budget process to take into account differences in salary growth projections of the State Budget Office. This adjusted rate, expressed as a percentage of payroll, is the actual rate paid by the State as payment of the required UAAL payment amount for State employees. For teachers, the actuarially determined UAAL amount is paid in twelve equal monthly installments. PLD employer contribution rates are the actuarially determined rates. The rates in effect in 2018 and 2017 are as follows:

Contribution Rates <sup>(1)</sup> (effective July 1 through June 30 of each fiscal year)				
0.1	<u>2018</u>	2017		
State: Employees <sup>(2)</sup> Employer <sup>(2)</sup>	7.65 – 8.65% 23.48 – 47.73%	7.65 – 8.65% 21.99 – 42.18%		
Teachers: Employees Employer Non-employer entity	7.65% 3.97% 11.08%	7.65% 3.36% 10.02%		
Judges: Employees Employer	7.65% 14.94%	7.65% 14.98%		
Legislative: Employees Employer	7.65% 0.00%	7.65% 0.00%		
Participating local districts: Employees <sup>(2)</sup> Employers <sup>(2)</sup>	4.0 – 9.0% 3.9 – 15.7%	4.0 – 9.0% 4.6 – 14.2%		

<sup>(1)</sup> Employer Contribution Rates include normal cost and UAAL required payment, expressed as a percentage of payroll.

Employer and Employee retirement contribution rates vary depending on specific terms of plan benefits for certain classes of employees or, in the case of PLDs, on benefit plan options selected by a particular PLD. The contributions of withdrawn entities that do not have active employees but continue to have other liabilities are set in dollar amounts, not as rates.

June 30, 2018 and 2017 continued

## 7. Group Life Insurance Program

## Plan Description

The Group Life Insurance Program administered by MainePERS is comprised of two multiple-employer cost-sharing defined benefit OPEB plans in addition to a multiple-employer cost-sharing plan providing life insurance benefits to active employees. Group Life Insurance Program coverage for active employees is available to eligible participants and includes basic insurance consisting of life insurance and accidental death and dismemberment insurance in the amount equal to the participant's annual base compensation rounded up to the next \$1,000. Additional supplemental insurance coverage is available to those participants who elect basic coverage. Participants may also elect to insure the life of a dependent not otherwise insured under the basic and supplemental insurance provisions of the program.

## Group Life Insurance Plan for Retired State Employees and Teachers

The Group Life Insurance Plan for Retired State Employees and Teachers is a multiple-employer cost sharing plan with a special funding situation. As of June 30, 2018 there were 220 employers, including the State of Maine, participating in the plan. The State of Maine is also a non-employer contributing entity in that the State pays contributions for retired public school teachers in the plan.

Plan membership counts for the Group Life Insurance Plan for Retired State Employees and Teachers as of the valuation date are as follows:

	<u>2018</u>	2017
Retired State Employees Retired Teachers Active State Employees Active Teachers	8,768 7,437 11,362 <u>14,592</u>	8,538 7,003 11,763 <u>14,045</u>
	<u>42,159</u>	<u>41,349</u>

## Group Life Insurance Plan for Retired PLD Employees

The Group Life Insurance Plan for Retired PLD employees is a multiple-employer cost sharing plan. As of June 30, 2018 there were 138 employers participating in the plan.

Plan membership counts for the Group Life Insurance Plan for Retired PLD Employees as of the valuation date are as follows:

	2018	2017	
Retired PLD Employees Active PLD Employees	2,850 <u>5,495</u>	2,671 <u>5,416</u>	
	8,345	<u>8,087</u>	

## **Benefits**

The Group Life Insurance Plans provide basic group life insurance benefits, during retirement, to retirees who participated in the group life insurance plan prior to retirement for a minimum of 10 years (the 10-year participation requirement does not apply to recipients of disability retirement benefits).

The level of coverage in retirement is initially set to an amount equal to the retiree's average final compensation. The initial amount of basic life is then subsequently reduced at the rate of 15% per year to the greater of 40% of the initial amount or \$2,500.

## **Funding Policy**

Premium rates are those determined by the System's Board of Trustees to be actuarially sufficient to pay anticipated claims. For state employee, judicial and legislative employment classes, the premiums for retiree life insurance coverage are factored

## June 30, 2018 and 2017 continued

into the premiums paid for basic coverage while participants are active members. Premiums for basic life insurance coverage for retired teachers are paid by the State of Maine as the total dollar amount of each year's annual required contribution. PLD employers with retired PLD employees are required to remit a premium of \$0.46 per \$1,000 of coverage per month during the post-employment retired period.

## Net OPEB Liability – State Employee and Teacher Plan

The components of the net OPEB liability of the State of Maine and participating teacher employers, stated in millions of dollars as of June 30, 2018, were as follows:

Total OPEB liability Plan fiduciary net position	\$	196.3 94.3
Net OPEB liability	\$_	102.0
Plan fiduciary net position as a percentage of the total OPEB liability		48.0%

## Net OPEB Liability - PLD Plan

The components of the net OPEB liability of the PLD Plan participating employers, stated in millions of dollars as of June 30, 2018, were as follows:

Total OPEB liability Plan fiduciary net position	\$	36.0 15.8
Net OPEB liability	\$_	20.2
Plan fiduciary net position as a percentage of the total OPEB liability		43.9%

Actuarial valuations of ongoing plans involve estimates of the values of reported amounts and assumptions about the probability of occurrence of events far into the future. Assumptions in an actuarial valuation typically include projections concerning future employment, mortality, and inflation. Actuarially determined contribution requirements are subject to continual periodic revision as actual results are compared to past expectations and new estimates are made concerning the future. The Schedule of Historical OPEB Information, presented as Required Supplementary Information immediately following the Notes to Financial Statements, will present multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

## <u>Actuarial Methods and Assumptions</u>

Projections of benefits for financial reporting purposes are based on the provisions of the plan in effect at the time of each valuation and the historical pattern of sharing of premium costs between the employer and plan members. Actuarial methods and assumptions include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the funding methodologies.

Costs are developed using the individual entry age normal cost method based on a level percentage of payroll.

**June 30, 2018 and 2017** *continued* 

Significant actuarial assumptions employed by the actuary for funding purposes as of June 30, 2018 and are displayed in the table below. The valuation date is June 30, 2018. These same assumptions were used as of June 30, 2017 unless otherwise noted.

	State employees, including judges and legislators	Teachers	PLD employees
Investment Rate of Return	Per annum, compounded	annually: 6.75% for June 30, 201	8; 6.875% for June 30, 2017
Inflation Rate		2.75%	
Annual Salary Increases, including Inflation	2.75% - 8.75%	2.75% - 14.50%	2.75% - 9.00%
Mortality Rates	judicial, and PLD plans, the I and females, is used. For all	disabled retirees of the State emp RP2014 Total Dataset Healthy Anr recipients of disability benefits, the Mortality Table, for males and fem	uitant Mortality Table, for males RP2014 Total Dataset Disabled
Participation Rate for Future Retirees		100% of those currently enrolled	t
Conversion Charges	Apply to the cost of a	active group life insurance, not reti	ree group life insurance
Form of Benefit Payment		Lump sum	

The unfunded actuarial accrued liability is being amortized as a level percentage of payroll over a 30-year period on a closed basis. As of June 30, 2018, there were 19 years remaining in the amortization schedule for state employees and teachers, and 12 years remaining for PLD employees.

The actuarial assumptions used in the June 30, 2018 and June 30, 2017 actuarial valuations were based on the results of an actuarial experience study conducted for the period of June 30, 2012 to June 30, 2015.

The long-term expected rate of return on OPEB Plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation) are developed for each major class of assets. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of long-term real rates of return for each major asset class included in the target asset allocation as of June 30, 2018 are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return
Public equity Real estate	6.0% 5.2
Traditional credit	3.0
US Government securities	2.3

## Discount Rate

The discount rate used to measure the total OPEB liability for the State Employee and Teacher Plan was 6.75%. The projection of cash flows used to determine the discount rate assumed that employer and non-employer entity contributions will be made at contractually required rates, actuarially determined. Based on these assumptions, the Plan's fiduciary net position was projected to be available to make all projected future benefit payments to current plan members. Therefore, the long-term expected rate of return on investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

The discount rate used to measure the total OPEB liability for the PLD Plan was 5.13% which is a blend of the assumed long-term expected rate of return of 6.75% and a municipal bond index rate of 3.87%, based on the Bond Buyer GO 20-Year Municipal Bond Index as of June 30, 2018. Projections of the Plan's fiduciary net position indicate that it is not expected to be

June 30, 2018 and 2017 continued

sufficient to make projected benefit payments for current members beyond 2047. Therefore, the portion of future projected benefit payments after 2047 are discounted at the municipal bond index rate. The projection of cash flows used to determine the discount rate assumed that employer and non-employer entity contributions will be made at contractually required rates, actuarially determined.

## Sensitivity of the net OPEB liability to changes in the discount rate

The following table presents the net OPEB liability for the State Employee and Teacher Plan calculated using the discount rate of 6.75%, as well as what the net OPEB liability would be if it were calculated using a discount rate of one percentage point lower (5.75%) or one percentage point higher (7.75%) than the current rate:

	1%	Current	1%
	Decrease	Rate	Increase
	<u>(5.75%)</u>	<u>(6.75%)</u>	<u>(7.75%)</u>
Net OPEB Liability	\$ 130,842,952	\$ 101,976,274	\$ 78,522,347

The following table presents the net OPEB liability for the PLD Plan calculated using the discount rate of 5.13%, as well as what the net OPEB liability would be if it were calculated using a discount rate of one percentage point lower (4.13%) or one percentage point higher (6.13%) than the current rate:

	1%	Current	1%
	Decrease	Rate	Increase
	(4.13%)	<u>(5.13%</u> )	<u>(6.13%</u> )
Net OPEB Liability	\$ 26,688,521	\$ 20,200,977	\$ 15,085,995

## **Premiums**

The basic life benefits for participants are funded by the State, school districts, PLDs and individuals. Participants pay additional premiums for supplemental and dependent insurance based upon the coverage selected.

Maine statute requires the System's Board of Trustees to establish on a regular basis the premium rates for participants in the Group Life Insurance Plan. The premium rates are determined to be actuarially sufficient to pay anticipated claims and cover administrative costs. The State of Maine remits premiums at a single rate that supports basic coverage for active and retired state employees (including Legislative and Judicial employees). This rate is \$.76 per month for every \$1,000 of coverage. The State remits premiums for retired teachers at a rate of \$.33 per month for every \$1,000 of coverage. As per individual collective bargaining agreements between employers and employees, individual school districts or teachers themselves pay premiums at the rate of \$.11 per month for every \$1,000 of coverage while active, and employees of participating local districts or the district itself pay premiums of \$.46 per month for every \$1,000 in coverage for employees while active and retired. Employees' premiums are usually deducted from employees' compensation and remitted to the System.

Included in the Employer and Non-employer Contributions and Premiums in the statement of changes in fiduciary net position are group life insurance premiums received from the State of Maine on behalf of active and retired state employees, retired teachers, legislators, and judges in the total amount of \$8.7 and \$8.0 million, respectively, for the years ended June 30, 2018 and 2017.

## **Benefits**

Upon service retirement, only basic life insurance in an amount equal to the retiree's average final compensation will continue at no cost to the participant as long as the retiree participated in the group life insurance plan prior to retirement for a minimum of 10 years.

If a participant becomes eligible for disability retirement, the amount of basic insurance in force at the time of such retirement will be continued until normal retirement age, after which the amount will be reduced at the same rate as for a service retiree. The 10-year participation requirement does not apply to recipients of disability retirement benefits.

Under the Accidental Death and Dismemberment provisions of the plan, no legal action can be brought to recover under any benefit after 3 years from the deadline for filing claims. The deadline for filing claims under the Accidental Death and Dismemberment provisions of the plan is 90 days after the date of the loss giving rise to the claim.

June 30, 2018 and 2017 concluded

## Claims Processing Expenses

All benefits are processed and paid by a third-party administrator (TPA). The fees incurred for services performed by the TPA totaled \$876,860 and \$962,517 for the years ended June 30, 2018 and 2017, respectively, and are listed as claims processing expenses in the basic financial statements.

## 8. Statutory and Constitutional Requirements

An amendment to the Maine constitution approved in November 1995 requires the State of Maine to fund the unfunded actuarial liability of the State Employee and Teacher Retirement Plan existing on June 30, 1996, over a period not to exceed 31 years beginning July 1, 1997, and not later than June 30, 2028. The amendment prohibits the creation of new unfunded liabilities in that Plan except those arising from experience losses, which under the 1995 amendment must be funded over a period of not more than ten years. An amendment approved in November 2017 extends the period from ten years to twenty years.

## 9. The System's Employee Benefits

## **Defined Benefit Plan**

The System, as the employer of its staff, is a PLD in the PLD Consolidated Plan. As such, the System's employees are required by statute to contribute 8.0% of their annual covered salaries. The System is required to contribute at the contribution rate established by the Board of Trustees under the actuarial valuation of the PLD Consolidated Plan. The contribution rate was 9.6% of annual covered payroll for 2018 and 9.5% of annual covered payroll for 2017.

The employer contributions on behalf of its employees, equal to the required contribution, were \$642,178 and \$617,448 for 2018 and 2017, respectively. The actuarial assumptions used in the PLD Consolidated Plan valuation are described in the actuarial assumptions and methods footnote to the required supplementary information.

The System's contributions to the PLD Consolidated Plan are treated as administrative costs of the Plan and are funded as a component of normal cost and included in the contribution rates paid by all employers in each of the plans administered by the System. Accordingly, the System does not reflect a portion of the collective net pension liability or related deferred inflows and outflows of resources related to pension obligations in the System's basic financial statements.

## Group Life Insurance Plan

The System, as the employer of its staff, is a PLD in the Group Life Insurance Plan. The System pays the premiums for Basic only coverage for all active employees. Employees who elect additional coverage under the Supplemental and/or Dependent provisions have the additional required premiums withheld from their pay in order to fund such coverage.

The System was required to pay premiums for Basic coverage at the rate of \$0.46 per \$1,000 of coverage for the 2018 and 2017 fiscal years. The total premiums the System paid on behalf of its active employees, equal to the required contributions, were \$27,604 and \$33,609 for 2018 and 2017, respectively.

## Other Post-Employment Benefits

The System provides OPEB to its retirees in the form of health insurance coverage and group life insurance coverage. The System's annual OPEB costs are actuarially determined based on the parameters of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*.

The total contributions for retiree health insurance coverage, equal to the actuarially determined contributions, were \$0 for 2018 and 2017. The OPEB liability for this plan is immaterial and the Plan's assets exceed its actuarial liability at June 30, 2018 and 2017. The actuarial liability is calculated using assumptions similar to those used for the System's defined benefit plan.

The total contributions for retiree group life insurance coverage, equal to the actuarially determined contributions, were \$5,943 and \$6,768 for 2018 and 2017. The OPEB liability for this plan is immaterial.

## 10. Risk Management

The System carries insurance to cover its exposure to various risks of loss. There were no uninsured losses during the last three years.

## SCHEDULE OF HISTORICAL PENSION INFORMATION STATE EMPLOYEE AND TEACHER PLAN

June 30, 2018 (UNAUDITED)

# SCHEDULE OF CHANGES IN THE PLAN'S NET PENSION LIABILITY AND RELATED RATIOS LAST TEN FISCAL YEARS \*

		2018	707		ZOID	2015	2014
Total pension liability							
Service cost	ဖာ	215,826,380 \$	213,047,075	75 89	203,297,063 \$	191,528,649 \$	186,376,754
Interest		914,535,911	886,834,221	뒪	882,785,134	861,682,508	842,229,062
Changes of benefit terms			•			9,778,106	
Differences between expected and actual experience		34,151,279	95,207,531	31	81,506,700	(44,287,643)	(17,694,276)
Changes of assumptions		191,998,939	•		30,436,605		167,650,573
Benefit payments, including refunds of member contributions	اي	(810,211,176)	(780,157,263)	<u>(S</u>	(744,357,598)	(722,573,349)	(689,053,212)
Net change in total pension liability		546,301,333	414,931,564	23	453,667,894	296,128,271	489,508,901
Total pension liability, beginning		13,484,886,512	13,069,954,948	8	12,616,287,054	12,320,158,783	11,830,649,882
Total pension liability, ending (a)	ဖာ	14,031,187,845 \$	13,484,886,512	12 8	13,069,954,948 \$	12,616,287,054 \$	12,320,158,783
Disn fiduriary not modified							
Contributions - member	Ø	140.844.880 \$	139,464,284	8	125,523,986 \$	123.528.807 \$	121.033.152
Contributions - employer	,		211,037,365				
Contributions - non-employer		129,421,735	116,080,164	2	112,477,836	147,283,716	142,303,104
Net investment income		1,077,827,554	1,256,043,735	SS.	40,540,758	191,829,057	1,517,432,345
Benefit payments, including refunds of member contributions		(810,381,770)	(780,325,980)	8	(744,523,743)	(722,724,258)	(689,191,030)
Administrative expenses		(10,076,242)	(9,216,027)	27)	(8,649,030)	(9,386,695)	(8,246,740)
Other			(124,178)	78)	(6,342,010)		
Net change in fiduciary net position		738,887,301	932,959,363	83	(281,759,484)	(95,533,881)	1,246,250,978
Plan fiduciary net position, beginning		10,893,305,470	9,960,345,107	20	10,242,105,591	10,337,639,472	9,091,388,494
Plan fiduciary net position, ending (b)	မှာ	11,632,192,771 \$	10,893,305,470	s 0/	9,960,345,107 \$	10,242,105,591 \$	10,337,639,472
Plan's net pension liability, ending (a)-(b)	Ø	2,398,995,074 \$	2,591,581,042	55 59	3,109,608,841 \$	2,374,181,463 \$	1,982,519,311
Plan fiduciary net position as a percentage		60	8	700	2000 25	7000	8
of the total pension listority		86.90%	90.79	8	0.77%	07. T070	02.9170
Covered payroll	Ø	1,808,274,919 \$	1,860,294,435	SS O	1,816,435,084 \$	1,699,160,889 \$	1,676,857,294
Plan net pension liability as a percentage of covered payroll		132.67%	139.31%	1%	171.19%	139.73%	118.23%

See notes to historical pension and OPEB information.

<sup>\*</sup>This information will be presented each year until 10 years of such information is available.

## SCHEDULE OF HISTORICAL PENSION INFORMATION JUDICIAL PLAN

June 30, 2018 (UNAUDITED)

# SCHEDULE OF CHANGES IN THE PLAN'S NET PENSION LIABILITY AND RELATED RATIOS LAST TEN FISCAL YEARS \*

	2010		2017	2015	2015	2014
	0702		1707	OTOZ	CTOZ	#102
Total pension liability						
Service cost	\$ 1,487,383	69 E9	1,465,977 \$	1,396,704 \$	1,605,751 \$	1,530,119
Interest	4,442,404	4	4,358,175	4,154,433	3,863,455	3,773,959
Changes of benefit terms	•			2,016,584	27,931	
Differences between expected and actual experience	468,895	ις.	(893,352)	(1,745,956)	2,237,833	(324,891)
Changes of assumptions	697,807	7	•	2,489,800		426,150
Benefit payments, including refunds of member contributions	(3,804,709)	9)	(3,651,927)	(3,501,911)	(3,383,995)	(3,219,480)
Net change in total pension liability	3,291,780	0	1,278,873	4,809,654	4,350,975	2,185,857
Total pension liability, beginning	65,000,144	4	63,721,271	58,911,617	54,560,642	52,374,785
Total pension liability, ending (a)	\$ 68,291,924	8	65,000,144 \$	63,721,271 \$	58,911,617 \$	54,560,642
:						
Plan fiduciary net position						
Contributions - member	\$ 603,875	ക	584,451 \$	549,845 \$	549,691 \$	528,192
Contributions - employer	1,179,328	00	1,144,445	1,077,545	979,281	932,223
Contributions - non-employer	•					
Net investment income	6,606,904	4	7,799,507	129,372	1,055,346	8,416,042
Benefit payments, including refunds of member contributions	(3,804,709)	6	(3,651,927)	(3,501,911)	(3,383,995)	(3,219,480)
Administrative expenses	(61,708)	6	(56,436)	(47,577)	(49,399)	(41,681)
Other	•			6,342,010		
Net change in fiduciary net position	4,523,691	1	5,820,040	4,549,284	(849,076)	6,615,296
Plan fiduciary net position, beginning	66,710,149	o	60,890,109	56,340,825	57,189,901	50,574,605
Plan fiduciary net position, ending (b)	\$ 71,233,840	s	66,710,149 \$	\$ 60,090,109	56,340,825 \$	57,189,901
Plan's net pension liability, ending (a)-(b)	\$ (2,941,916)	s (9	(1,710,005) \$	2,831,162 \$	2,570,792 \$	(2,629,259)
Plan fiduciary net position as a percentage	0	à	1000 000	0	000	1000
of the total pension liability	104.31%	ę	102.63%	80006	90.0496	104.82%
Covered payroll	\$ 7,893,792	8	7,639,818 \$	7,188,426 \$	7,185,501 \$	6,742,444
Plan net pension liability as a percentage of covered payroll	-37.27%	%	-22.38%	39.39%	35.78%	-39.00%

See notes to historical pension and OPEB information.

<sup>\*</sup>This information will be presented each year until 10 years of such information is available.

## SCHEDULE OF HISTORICAL PENSION INFORMATION LEGISLATIVE PLAN

June 30, 2018 (UNAUDITED)

# SCHEDULE OF CHANGES IN THE PLAN'S NET PENSION LIABILITY AND RELATED RATIOS LAST TEN FISCAL YEARS \*

		2018	2017	2016	2015	2014
Total pension liability						
Service cost	(J)	282,199 \$	264,807 \$	411,624 \$	451,393 \$	400,072
Interest		565,088	530,313	547,268	544,526	510,813
Changes of benefit terms					4,418	
Differences between expected and actual experience		(90,816)	157,775	(245,867)	(508,125)	(46,483)
Changes of assumptions		99,915		(146,529)		85,783
Benefit payments, including refunds of member contribution.		(459,746)	(469,043)	(445,331)	(439,112)	(317,606)
Net change in total pension liability		396,640	483,852	121,165	53,100	632,579
Total pension liability, beginning		8,163,310	7,679,458	7,558,293	7,505,193	6,872,614
Total pension liability, ending (a)	ဖ	8,559,950 \$	8,163,310 \$	7,679,458 \$	7,558,293 \$	7,505,193
Plan fiduciary net position						
Contributions - member	Ø	153.881 \$	202.388 \$	137.893 \$	193,356 \$	139,501
Contributions - employer		•	•		4,418	3,857
Contributions - non-employer		•				
Net investment income		1,176,463	1,366,222	47,890	206,454	1,622,296
Benefit payments, including refunds of member contribution:		(459,746)	(469,043)	(445,331)	(439,112)	(317,606)
Administrative expenses		(11,002)	(10,003)	(8,353)	(9,584)	(7.975)
Other		•				
Net change in fiduciary net position		859,596	1,089,564	(268,901)	(44,468)	1,440,073
Plan fiduciary net position, beginning		11,896,225	10,806,661	11,075,562	11,120,030	9,679,957
Plan fiduciary net position, ending (b)	ဖာ	12,755,821 \$	11,896,225 \$	10,805,651 \$	11,075,562 \$	11,120,030
Plan's net pension liability, ending (a)-(b)	ဟ	(4,195,871) \$	(3,732,915) \$	(3,127,203) \$	(3,517,269) \$	(3,614,837)
Plan fiduciary net position as a percentage of the total page on Exhibit.		140 02%	1.05.7204	140.7.284	145 54%	1.48 1.684
		243004	200	140.1279	of the cott	201.01
Covered payroll	ທ	2,710,694 \$	2,651,195 \$	2,590,011 \$	2,527,525 \$	2,534,740
Plan net pension liability as a percentage of covered payroll		-154.79%	-140.80%	-120.74%	-139.16%	-142.61%

See notes to historical pension and OPEB information.

<sup>\*</sup> This information will be presented each year until 10 years of such information is available.

## SCHEDULE OF HISTORICAL PENSION INFORMATION PLD CONSOLIDATED PLAN

June 30, 2018 (UNAUDITED)

# SCHEDULE OF CHANGES IN THE PLAN'S NET PENSION LIABILITY AND RELATED RATIOS LAST TEN FISCAL YEARS \*

		2018	2017		2016	2015	2014
Total pension liability	,			,			
Service cost	Ø	76,190,510 \$	76,271,766	ம	74,208,414 \$	75,805,492 \$	72,651,025
Interest		207,492,397	198,972,490		192,774,429	187,928,506	178,293,576
Changes of benefit terms		(106,123,366)					
Differences between expected and actual experience		1,285,303	(2,160,603)		(9,142,757)	(54,634,906)	19,939,857
Changes of assumptions		46,439,540			50,884,219	37,593,598	
Benefit payments, including refunds of member contributions		(152,087,885)	(146,163,566)		(139,919,680)	(135,414,526)	(127,161,357)
Net change in total pension liability		73,196,499	126,920,087		168,804,625	111,278,164	143,723,101
Total pension liability, beginning		3,016,660,721	2,889,740,634		2,720,936,009	2,609,657,845	2,465,934,744
Total pension liability, ending (a)	w	3,089,857,220 \$	3,016,660,721	ဟ	2,889,740,634 \$	2,720,936,009 \$	2,609,657,845
Disn fiduriary not modified							
Contributions - member	Ø	48.050.202 \$	46,080,851	Ø	40,861,405 \$	37,202,921 \$	33,210,510
Contributions - employer			51.387.011				32,706,160
Refund of IUUAL account balances						(43,000,526)	
Net investment income		259,699,519	299,780,948		10,200,342	46,075,304	361,125,177
Benefit payments, including refunds of member contributions	00	(152,087,885)	(146,163,566)		(139,919,680)	(135,414,526)	(127,161,358)
Administrative expenses		(2,411,666)	(2,209,324)		(2,028,294)	(2,117,266)	(1,779,304)
Other		(386,621)	(62,201)		(217,338)		
Net change in fiduciary net position		208,956,211	248,813,719		(43,479,383)	(53,887,363)	298,101,185
Plan fiduciary net position, beginning		2,607,223,644	2,358,409,925		2,401,889,308	2,455,776,671	2,157,675,486
Plan fiduciary net position, ending (b)	Ø	2,816,179,855 \$	2,607,223,644	မာ	2,358,409,925 \$	2,401,889,308 \$	2,455,776,671
	6		250 500 500	6		6 100 0000	120 000 020
Plans het persion liability, ending (a)-(b)	9	2/3,0/1,300 \$	409,431,011	9	331,330,708 a	318,040,701 \$	103,861,174
Plan fiduciary net position as a percentage							
of the total pension liability		91.14%	86.43%		81.61%	88.27%	94.10%
Covered payroll	Ø	561,126,768 \$	542,572,528	Ø	521,870,235 \$	497,616,846 \$	460,029,637
Plan net pension liability as a percentage of covered payroll		48.77%	75.46%		101.81%	64.11%	33.45%

See notes to historical pension and OPEB information.

<sup>\*</sup>This information will be presented each year until 10 years of such information is available.

## SCHEDULE OF HISTORICAL PENSION INFORMATION STATE EMPLOYEE AND TEACHER PLAN

June 30, 2018 (UNAUDITED)

Last Ten Fiscal Years

SCHEDULE OF EMPLOYER CONTRIBUTIONS

		2018		2017	2	2016		2015	2014		2013	2012		2011	2010	0	2009
Actuarially determined contribution	Ø	326,386,148 \$ 312,751,835	s)	312,751,835 \$		1,891,511 \$	e e	02,028,725 \$	301.891.511 \$ 302,028.725 \$ 304,328.386 \$ 263,533,204 \$ 252,019,252 \$	Ø	263,533,204 \$	252,019	,252 \$	327,087,524 \$ 317,030,874 \$	317,0	30,874 \$	318,844,303
Contributions in relation to the actuarially determined contribution		326,386,148	.,	312,751,835	30	301,891,511	ĕ	302,028,725	304,328,386		263,533,204	252,019,252	,252	332,956,361	328,2	328,246,031	318,844,303
Contribution deficiency (excess)	w	,	ø							ဖ			<u>ა</u>	- \$ (5,868,837) \$ (11,215,157) \$	(11,2	215,157) \$	
Covered payroll	Ø	1,808,274,919	S 1,	360,294,435 \$	1,810	6,435,084 \$	1,6	99,160,889 \$	1,676,857,294	8	.672,857,294 \$	1,718,449	,172 \$	\$ 1,808,274,919 \$ 1,860,294,435 \$ 1,816,435,084 \$ 1,699,160,889 \$ 1,676,857,294 \$ 1,672,857,294 \$ 1,718,449,172 \$ 1,643,389,735 \$ 1,672,252,868 \$ 1,699,885,710	1,672,2	252,868 \$	1,699,885,710
Contributions as a percentage of covered payroll		18.05%		16.81%		16.62%		17.78%	18.15%		15.75%	1	14.67%	20.26%		19.63%	18.76%

See notes to historical pension and OPEB information.

## SCHEDULE OF HISTORICAL PENSION INFORMATION JUDICIAL PLAN

June 30, 2018 (UNAUDITED)

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

Last Ten Fiscal Years

		2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Actuarially determined contribution	Ø	1,179,328 \$	1,144,445 \$	1,077,545 \$	951,351 \$	932,223 \$	841,397 \$	810,721 \$	987,261 \$	961,083 \$	1,267,869
Contributions in relation to the actuarially determined contribution		1,179,328	1,144,445	1,077,545	951,351	932,223	841,397	810,721	987,261	961,083	1,267,869
Contribution deficiency (excess)	w			<i>s</i>	<b>ω</b>					· ·	
Covered payroll	Ø	7,893,762 \$	7,639,818 \$	7,188,426 \$	7,185,501 \$	6,742,444 \$	6,742,444 \$	6,790,274 \$	6,790,233 \$	6,956,364 \$	6,718,453
Contributions as a percentage of covered payroll		14.94%	14.98%	14.99%	13.24%	13.83%	12.48%	11.94%	14.54%	13.82%	18.87%

See notes to historical pension and OPEB information.

## SCHEDULE OF HISTORICAL PENSION INFORMATION LEGISLATIVE PLAN

June 30, 2018 (UNAUDITED)

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Last Ten Fiscal Years

		2018	2017		2016	2015		2014	2013		2012	2011	2010	20	2009
Actuarially determined contribution	w			<i>ب</i>	,		<i>υ</i>	,		<i>ω</i>			6	<i>и</i>	
Contributions in relation to the actuarially															
determined contribution		,						•							
Contribution deficiency (excess)	ம						<del>ဖ</del>		s	8			ဖ	<b>м</b>	
Covered-employee payroll	Ø	2,710,694 \$		2,651,195 \$	2,590,011 \$		2,527,525 \$	2,534,740 \$	\$ 2,534,7	2,534,740 \$	2,424,480 \$	2,395,694 \$		2,384,083 \$ 2	2,326,785
Contributions as a percentage of covered payroll		96000		96000	9600.0		0.00%	96000	0.0	9600.0	0.00%	0.00%	00	0.00%	9600:0
See notes to historical pension and OPEB information.															

## SCHEDULE OF HISTORICAL PENSION INFORMATION PLD CONSOLIDATED PLAN

June 30, 2018 (UNAUDITED)

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

Last Ten Fiscal Years

		2018		2017	2016		2015	2014	2013	2012	2011	2010	2009
Actuarially determined contribution	w	55,551,550 \$		51,387,011 \$	46,968,321	321 \$	40,302,580 \$	35,263,952 \$	29,704,314 \$	5 25,056,574 \$	19,995,608 \$	15,384,689 \$	14,701,513
Contributions in relation to the actuarially determined contribution		55,551,550		51,387,011	46,968,321	321	40,302,580	35,263,952	29,704,314	25,372,687	19,995,608	15,384,689	14,701,513
Contribution deficiency (excess)	ø		ø			σ.				\$ (316,113) \$			
Covered payroll	Ø	561,126,768 \$ 542,572,528	Ø	542,572,528 \$	521,870,	521,870,235 \$	497,616,846 \$	\$ 450,029,637 \$	458,424,764 \$	8 474,828,262 \$		435,012,940 \$ 395,747,663 \$	380,541,135
Contributions as a percentage of covered payroll		9.00%		9.47%	ő	9.00%	8.10%	7.67%	6.48%	5.34%	4.60%	3.89%	3.86%

See notes to historical pension and OPEB information.

## SCHEDULE OF HISTORICAL PENSION INFORMATION ALL DEFINED BENEFIT PLANS

June 30, 2018 (UNAUDITED)

	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Annual money-weighted rate of return, net of investment expenses	10.30%	12.49%	0.48%	1.98%	16.66%

See notes to historical pension information.

<sup>\*</sup> Retroactive information is not required to be presented. This information will be presented each year until 10 years of such information is available.

## SCHEDULE OF HISTORICAL OPEB INFORMATION STATE EMPLOYEE AND TEACHER PLAN

June 30, 2018 (UNAUDITED)

## SCHEDULE OF CHANGES IN THE PLAN'S NET OPEB LIABILITY AND RELATED RATIOS Last Ten Fiscal Years \*

		2018		2017
Total OPEB liability				
Service cost	\$	2,122,079	\$	2,065,283
Interest		12,531,082		12,014,739
Changes of benefit terms		1.057.220		-
Differences between expected and actual experience Changes of assumptions		1,957,220 3,199,639		-
Benefit payments, including refunds of member contributions		(7,269,810)		(6,003,967)
Net change in total OPEB liability		12,540,210		8,076,055
Total OPEB liability, beginning		183,722,693		175,646,638
Total OPEB liability, ending (a)	\$	196,262,903	\$	183,722,693
Plan fiduciary net position for retirees	_		_	
Contributions - member	\$	7 600 4E0	\$	6 021 220
Contributions - employer Net investment income		7,638,453 7,804,839		6,921,228 9,885,897
Benefit payments, including refunds of member contributions		(7,269,810)		(6.003.967)
Administrative expenses		(769,717)		(1,335,745)
Other				
Net change in fiduciary net position for retirees		7,403,765		9,467,413
Plan fiduciary net position for retirees, beginning		86,882,864		77,415,451
Plan fiduciary net position for retirees, ending (b)	\$	94, 286, 629	\$	86,882,864
Net OPEB liability, ending (a)-(b)	\$	101,976,274	\$	96,839,829
Plan fiduciary net position for retirees as a percentage of the total OPEB liability		48.04%		47.29%
Covered payroll	\$	1,343,668,500	\$	1,277,009,000
Net OPEB liability as a percentage of covered payroll		7.59%		7.58%

See notes to historical pension and OPEB information.

<sup>\*</sup> This information will be presented each year until 10 years of such information is available.

## SCHEDULE OF HISTORICAL OPEB INFORMATION PLD CONSOLIDATED PLAN

June 30, 2018 (UNAUDITED)

## SCHEDULE OF CHANGES IN THE PLAN'S NET OPEB LIABILITY AND RELATED RATIOS Last Ten Fiscal Years \*

	 2018	2017
Total OPEB liability Service cost Interest	\$ 442,863 1,706,200	\$ 619,735 1,616,253
Changes of benefit terms Differences between expected and actual experience Changes of assumptions Benefit payments, including refunds of member contributions	 2,045,678 1,554,074 (1,530,346)	(5,591,242) (1,394,586)
Net change in total OPEB liability	4,218,469	(4,749,840)
Total OPEB liability, beginning Total OPEB liability, ending (a)	\$ 31,804,436 36,022,905	\$ 36,554,276 31,804,436
Plan fiduciary net position for retirees  Contributions - member  Contributions - employer  Net investment income  Benefit payments, including refunds of member contributions  Administrative expenses	\$ 1,069,640 1,333,324 (1,530,346) (133,624)	\$ 1,037,124 1,738,914 (1,394,586) (238,856)
Other	 	
Net change in fiduciary net position for retirees	738,994	1,142,596
Plan fiduciary net position for retirees, beginning Plan fiduciary net position for retirees, ending (b)	\$ 15,082,934 15,821,928	\$ 13,940,338 15,082,934
Net OPEB liability, ending (a)-(b)	\$ 20,200,977	\$ 16,721,502
Plan fiduciary net position for retirees as a percentage of the total OPEB liability	43.92%	47.42%
Covered payroll	\$ 276,287,000	\$ 260,552,680
Net OPEB liability as a percentage of covered payroll	7.31%	6.42%

See notes to historical pension and OPEB information.

<sup>\*</sup> This information will be presented each year until 10 years of such information is available.

## SCHEDULE OF HISTORICAL OPEB INFORMATION STATE EMPLOYEE AND TEACHER PLAN

June 30, 2018 (UNAUDITED)

## SCHEDULE OF EMPLOYER CONTRIBUTIONS Last Ten Fiscal Years\*

2018 2017 Actuarially determined contribution \$ 8,805,704 \$ 8,239,903 Contributions in relation to the actuarially determined contribution 7,638,453 6,921,228 Contribution deficency (excess) \$ 1,167,251 \$ 1,318,675 Covered payroll 1,343,668,500 \$ \$ 1,277,009,000 Contributions as a percentage of covered payroll 0.57% 0.54%

See notes to historical pension and OPEB information.

<sup>\*</sup> This information will be presented each year until 10 years of such information is available.

## REQUIRED SUPPLEMENTARY INFORMATION

## SCHEDULE OF HISTORICAL OPEB INFORMATION PLD PLAN

June 30, 2018 (UNAUDITED)

## SCHEDULE OF EMPLOYER CONTRIBUTIONS Last Ten Fiscal Years

	2018	2017
Actuarially determined contribution	\$ 1,252,650	\$ 1,146,324
Contributions in relation to the actuarially determined contribution	1,069,640	1,037,124
Contribution deficency (excess)	\$ 183,010	\$ 109,200
Covered payroll	\$ 276,287,000	\$ 260,552,680
Contributions as a percentage of covered payroll	0.39%	0.40%

See notes to historical pension and OPEB information.

<sup>\*</sup> This information will be presented each year until 10 years of such information is available.

## REQUIRED SUPPLEMENTARY INFORMATION

## SCHEDULE OF HISTORICAL OPEB INFORMATION ALL OPEB PLANS

June 30, 2018 (UNAUDITED)

## SCHEDULE OF INVESTMENT RETURNS Last Ten Fiscal Years \*

<u>2018</u> <u>2017</u>

Annual money-weighted rate of return, net of investment expenses

9.00% 12.88%

See notes to historical OPEB information.

\* Retroactive information is not required to be presented. This information will be presented each year until 10 years of such information is available.

## NOTES TO HISTORICAL PENSION AND OPEB INFORMATION

June 30, 2018 (UNAUDITED)

## 1. Basis of Presentation

The schedule of investment returns for pension plans applies to the State Employee and Teacher Plan, the Judicial Plan, the Legislative Plan, the PLD Consolidated Plan, and the PLD Agent Plans, as investments of these plans are commingled. Assets in the Group Life Insurance Plans, including assets to provide life insurance benefits to active employees, are commingled for investment purposes but separately from the pension plan assets.

## 2. Actuarial Methods and Assumptions - Defined Benefit Plans

The information in the historical pension information was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation date, June 30, 2018, is as follows:

## Actuarial Cost 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 rate.

The individual entry age normal method is used to determine liabilities. Under the individual entry age normal method, a normal cost rate is calculated for each employee. This rate is determined by taking the value, as of age at entry into the plan, of the member's projected future benefits, and dividing it by the value, also as of the member's entry age, of his expected future salary. The normal cost for each employee is the product of his pay and his normal cost rate. The normal cost for the group is the sum of the normal costs for all members.

Experience gains and losses, i.e., decreases or increases in liabilities and/or in assets when actual experience differs from the actuarial assumptions, affect the unfunded actuarial accrued liability.

## Asset Valuation Method

An actuarial value of assets is used for determining employer contributions. The use of an actuarial value of assets for this purpose helps mitigate volatility in contribution rates that might otherwise occur due to fluctuations in market conditions. The specific technique adopted in this valuation recognizes in a given year one-third of the investment return that is different from the actuarial assumption for investment return.

## **Amortization**

The net pension liability of the State Employee and Teacher Retirement Program is amortized on a level percentage of payroll over the amortization period then in effect under statutory and constitutional requirements (Note 6 to the Financial Statements). The net pension liabilities of the Legislative Plan and the Judicial Plan are amortized on a level percentage of payroll over open ten year periods.

The net pension liability of the PLD Consolidated Plan is amortized on a level percentage of payroll using a method where a separate twenty-year closed period is established annually for the gain or loss for that year.

## NOTES TO HISTORICAL PENSION AND OPEB INFORMATION

June 30, 2018 (UNAUDITED)

Significant actuarial assumptions employed by the actuary for funding purposes as of June 30 for each year indicated are as follows:

	State Employee and Teacher Plan	Judicial Plan	Legislative Plan	PLD Consolidated Plan								
Investment Rate of Return	Per annum, compounded annually: 6.75% 2017 and June 30, 2016; 7.125% for			Per annum, compounded annually: 6.75% for June 30, 2018; 6.875% for June 30, 2017 and June 30, 2016; 7.125% for June 30, 2015; 7.25% for June 30, 2014								
Inflation Rate	2.75% for June 30, 2	018, June 30, 2017,	and June 30, 2016;	3.50% for June 30, 2015 and June 30, 2014								
	Forti	he periods ended Ju	ne 30, 2018; June 3	0, 2017; and June 30, 2016:								
Annual Salary Increases, including	State employees, 2.75% - 8.75%; Teachers, 2.75% - 14.50%	2.75%	2.75%	2.75% - 9.00%								
Inflation		For the periods e	nded June 30, 2015	and June 30, 2014:								
	State employees, 3.50% - 10.50%; Teachers, 3.50% - 13.50%	3.50%	3.50%	3.50% - 9.50%								
Cost of Living Benefit Increases	2.20% for June 30, 2018, June 30, 2017 and June 30, 2016; 2.55% for June 30, 2016; 2.55% for June 30, 2018; 2.20% for June 30, 2018 and 3.12% for June 30, 2014											
	Forti	he periods ended Ju	ne 30, 2018; June 3	0, 2017; and June 30, 2016:								
	For active members and non-disabled retirees of the State employees and teachers, legislative, judicial, and PLD plans, the RP2014 Total Dataset Healthy Annuitant Mortality Table, for males and females, is used. For all recipients of disability benefits, the RP2014 Total Dataset Disabled Annuitant Mortality Table, for males and females, is used.											
Mortality Rates		For the periods e	nded June 30, 2015	and June 30, 2014:								
	projected forward to 2015 using Scale AA also reviewed and updated in 2011 for the	are used; the ages a PLD Consolidated F	are set back two year Plan, and in 2012 for	chers, legislative, judicial, and PLD plans, the RP2000 Tables rs for employees of the teacher plan. Mortality assumptions were the other Plans, based on actual demographic data of the Plans. bled Mortality Table for Males and Females is used.								

## 3. Actuarial Methods and Assumptions - Group Life Insurance Plans

The actuarial assumptions used in the June 30, 2016, 2017 and 2018 valuations were based on the results of an actuarial experience study for the period of June 30, 2012 to June 30, 2015. The actuarial assumptions used in the June 30, 2014 and 2015 valuations were based on the results of an actuarial experience study for the period of July 1, 2005 to June 30, 2010.

The information in the historical Group Life Insurance Plan information was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation date, June 30, 2018, is as follows:

## Actuarial Cost Method

The individual entry age normal method is used to determine liabilities. Under the individual entry age normal method, a normal cost rate is calculated for each employee. This rate is determined by taking the value, as of age at entry into the plan, of the member's projected future benefits, and dividing it by the value, also as of the member's entry age, of his expected future salary. The normal cost for each employee is the product of his pay and his normal cost rate. The normal cost for the group is the sum of the normal costs for all members.

The actuarial accrued liability is defined as the present value of future benefits less the present value of future normal cost contributions. The unfunded actuarial accrued liability is the total of the actuarial liability for all members less the actuarial value of the System's assets.

Experience gains and losses, i.e., decreases or increases in liabilities and/or in assets when actual experience differs from the actuarial assumptions, affect the unfunded actuarial accrued liability.

## NOTES TO HISTORICAL PENSION AND OPEB INFORMATION

June 30, 2018 (UNAUDITED)

## Asset Valuation Method

Asset amounts are taken as reported to the actuaries by the System without audit or change, except that State of Maine assets are allocated to State, Legislators, and Judges based on total actuarial liability.

## **Amortization**

The unfunded actuarial accrued liability is being amortized as a level percentage of payroll over a 30-year period on a closed basis. As of June 30, 2018, there were 19 years remaining in the amortization schedule for state employees and teachers, and 12 years remaining for PLD employees.

Significant actuarial assumptions employed by the actuary for funding purposes as of June 30 for each year indicated are as follows:

	State employees, including judges and legislators	Teachers	PLD employees							
Investment Rate of Return	Per annum, compounded a	annually: 6.75% for June 30, 2018	; 6.875% for June 30, 2017							
Inflation Rate	2.75	% for June 30, 2018 and June 30,	2017							
	F	or June 30, 2018 and June 30, 20	17							
Annual Salary Increases, including Inflation	2.75% - 8.75%	2.75% - 14.50%	2.75% - 9.00%							
	For June 30, 2018 and June 30, 2017									
Mortality Rates	For active members and non-disabled retirees of the State employees, legislative, judicial, and PLD plans, the RP2014 Total Dataset Healthy Annuitant Mortality Table, for males and females, is used. For all recipients of disability benefits, the RP2014 Total Dataset Disabled Annuitant Mortality Table, for males and females, is used.									
Participation Rate for Future Retirees		100% of those currently enrolled								
Conversion Charges	Apply to the cost of ac	tive group life insurance, not retire	ee group life insurance							
Form of Benefit Payment		Lump sum								

## FINANCIAL SECTION

## ADDITIONAL SUPPLEMENTARY INFORMATION SCHEDULE OF INVESTMENT EXPENSES

For the Year Ended June 30, 2018

	State Employee and Teacher Plan	Judicial Plan	Legislative Plan	PLD Consolidated Plan	PLD Agent Plan	Group Life Insurance Plan - Actives	Group Life Insurance Plan - State/ Teacher Retirees	Group Life Insurance Plan - PLD Retirees	Defined Contribution Plans	MainePERS OPEB Trust	Retiree Health Insurance Trust	Total
Alternative Credit												
Audax Senior Debt	561,062	3,439	613	135,114	1,812						•	702,040
Mesa West Core	637,617	3,908	269	153,549	2,060					1	ı	797,831
Owl Rock	202,794	1,243	222	48,836	655					1		253,750
TCP Direct Lending VIII	304,396	1,866	333	73,304	983							380,882
Infrastructure												
Alinda Infrastructure	408,292	2,503	446	98,324	1,319							510,884
ArcLight V	564,685	3,461	617	135,986	1,824					1	1	706,573
ArcLight VI	1,929,596	11,828	2,109	464,681	6,233					1	1	2,414,447
Brookfield Infrastructure II	906,249	5,555	066	218,241	2,927					1	1	1,133,962
Brookfield Infrastructure III	1,006,976	6,173	1,100	242,498	3,253							1,260,000
Carlyle Infrastructure	35,296	216	39	8,500	114						ı	44,165
Carlyle Power Partners II	559,431	3,429	611	134,721	1,807					1	1	666'669
Cube Infrastructure	465,846	2,856	209	112,184	1,505					1		582,900
EQT Ⅲ	1,600,342	9,810	1,749	385,390	5,170							2,002,461
First Reserve Infrastructure I	335,917	2,059	367	80,895	1,085					1		420,323
First Reserve Infrastructure II	807,550	4,950	882	194,472	2,609					1		1,010,463
GIP Co-Invest	312,187	1,914	341	75,180	1,008					1		390,630
GIPI	215,576	1,321	236	51,915	969							269,744
GIPII	766,523	4,699	838	184,592	2,476					1	ı	959,128
GIP III	1,948,020	11,941	2,129	469,117	6,293					1	ı	2,437,500
IFM Global Infrastructure	1,053,526	6,458	1,151	253,708	3,403							1,318,246
KKR Infrastructure	480,071	2,943	525	115,610	1,551					1	ı	600,700
KKR Infrastructure II	1,556,275	9,540	1,701	374,779	5,027							1,947,322
Meridiam Europe I	85,519	524	93	20,594	276			,			1	107,006
Meridiam Europe II	157,182	964	172	37,852	208							196,678
Meridiam Europe III	954,701	5,852	1,043	229,909	3,084							1,194,589
Meridiam NA II	557,570	3,418	609	134,273	1,801							697,671

## ADDITIONAL SUPPLEMENTARY INFORMATION SCHEDULE OF INVESTMENT EXPENSES

For the Year Ended June 30, 2018

NANCIAL SE		IUI	N I																							
Total	583,150	1,766,6310	893,750		612,500	474,703	665,946	750,000	916,162	825,001	359,391	625,001	656,353		18,987	(82,578)		774,778		290,176	49,009		338,561	000'009	200,001	100,286
Retiree Health Insurance Trust															12,604			17,772			31,867					
MainePERS OPEB Trust															614			1,053			1,815					
Defined Contribution Plans			,																							
Group Life Insurance Plan - PLD Retirees			,												773			1,186			2,054					ı
Group Life Insurance Plan - State/ Teacher Retirees	ı														4,555	•		686'9			12,102					
Group Life Insurance Plan - Actives			ı										,		441			929			1,171					
PLD Agent Plan	1,505	4,561	2,307		1,581	1,226	1,719	1,936	2,365	2,130	928	1,614	1,694		•	(252)		1,929		749	•		874	1,549	516	259
PLD Consolidated Plan	112,232	340,003	172,010		117,881	91,360	128,167	144,344	176,323	158,778	69,168	120,287	126,321		1	(18,780)		143,786		55,847	•		65,159	115,475	38,492	19,301
Legislative Plan	509	1,543	781		535	415	582	655	800	721	314	546	573		•	(82)		652		253	•		296	524	175	88
Judicial Plan	2,857	8,655	4,378		3,001	2,326	3,262	3,674	4,488	4,042	1,761	3,062	3,215		•	(478)		3,660		1,422	•		1,659	2,939	086	491
State Employee and Teacher Plan	466,047	1,411,869	714,274		489,502	379,376	532,216	599,391	732,186	659,330	287,220	499,492	524,550		•	(77,983)		597,075		231,905	•		270,573	479,513	159,838	80,147
	Meridiam NA III	Stonepeak II	Stonepeak III	Natural Resources	ACM Fund II	ACM Permanent Crops	Amerra III	Homestead II	IFC US Farming	Orion II	Taurus Annex	Taurus Mining	Twin Creeks	Domestic Equity	Blackrock Extended Equity	Blackrock DJ Total Stock Market	International Equity	Blackrock ACWI EX_US	Fixed Income	Blackrock Custom Fixed Income	Blackrock US Debt Index Fund B	Private Equity	ABRY ASF II	ABRY ASF III	ABRY Heritage	ABRY SE IV

# ADDITIONAL SUPPLEMENTARY INFORMATION SCHEDULE OF INVESTMENT EXPENSES

For the Year Ended June 30, 2018

	. ~	_	10	_	_	~	_	_		_	10	_	_	10		0,	4/ 1	01							10	_	~	01
Total	45,828	400,000	309,475	750,017	400,000	1,038,158	1,000,000	247,680	158,404	809,999	36,785	900,000	450,000	30,045	1,137,090	803,162	345,847	190,452	409,730	450,000	300,000	151,249	405,001	525,001	580,705	110,839	674,998	377,402
<b>6</b>																												
ee th ince st																												
Retiree Health Insurance Trust	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	•	•	'	'	•
PERS																												
MainePERS OPEB Trust	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	'	
Defined Contribution Plans																												
Defined Contributi Plans		·	·	·	·	·											·							•	•			
Group Life Insurance Plan - PLD Retirees																												
Grou Insu Plan Ret																												
Group Life Insurance Plan - State/ Teacher Retirees																												
Grou Inst Plan Tea Rei																												
Group Life Insurance Plan - Actives																												
Gro Insu Ac	ω,	Ω	0	9	g	0	Ŋ	o o	9	1	92	g	2	78	9	က္	<u>ω</u>	2	<u></u>	2	4	0	9	ις	0	9	က္	4
PLD Agent Plan	118	1,033	799	1,936	1,033	2,680	2,582	629	409	2,091	O	2,323	1,162	7	2,936	2,073	893	492	1,058	1,162	774	390	1,046	1,355	1,499	286	1,743	974
p	8,820	76,983	59,561	347	76,983	802	458	47,668	30,486	891	7,080	213	909'98	5,782	843	575	66,561	36,654	78,856	909'98	57,738	29,109	77,946	041	762	21,332	606	72,634
PLD nsolidated Plan	æ	76,	59,	144,347	76,	199,802	192,458	47,	30,	155,891	7,	173,213	86,	2,	218,843	154,575	.99	36,	78,	86,	57,	29,	77,	101,041	111,762	21,	129,909	72,
O	40	6	0.	55	<u>ق</u>		က	9.	80		32	9	23	26	23	1	12	9	80	23	2	2	4	6		26	0	0
Legislative Plan	4	349	270	655	349	206	873	216	138	707	m	786	393	2	866	701	302	166	358	393	262	132	354	459	202	6	290	330
	225	1,960	1,516	3,674	1,960	5,086	4,899	1,213	922	3,968	180	4,409	2,205	147	5,570	3,935	1,694	933	2,007	2,205	1,470	741	1,984	2,572	2,845	543	3,307	1,849
Judicial Plan		Ť,	Ţ,	κ'n	ť.	2,	4	Τ,		κ'n		4,	2,		5	κ'n	1,		2,	2,	ť		Ĺ,	2,	2,		κή	1,
and	36,625	319,675	247,329	599,405	319,675	829,683	799,188	197,944	126,595	647,342	29,398	719,269	359,634	24,012	908,748	641,878	276,397	152,207	327,451	359,634	239,756	120,877	323,671	419,574	464,092	88,581	539,449	301,615
State Employee and Teacher Plan	36	319	247	299	319	829	799	197	126	647	29	719	329	24	806	641	276	152	327	329	239	120	323	419	464	88	539	301
Em									_	₹																		
						>			Partners ∖	Partners ∖	≡ s	<u>&gt;  s   </u>									stream III	stream IV				\	\	edc
			E VIII	E VIII	PEF VI	a Pacific I	×	=	Capital	Capital	ia Partner	ia Partner	ge III	XI asn	nse X	tal VI	ergy IX	ergy VIII	ergy X	ergy XI	trock Mids	trock Mid.				Friedmar	Friedmar	de III Eurc
	ABRY VII	ABRY VIII	Advent GPE VII	Advent GPE VIII	Advent LAPEF VI	Affinity Asia Pacific IV	Berkshire IX	Berkshire VIII	Blackstone Capital Partners VI	Blackstone Capital Partners VII	Carlyle Asia Partners III	Carlyle Asia Partners IV	Centerbridge III	Charterhouse IX	Charterhouse X	CVC Capital VI	Encap Energy IX	EnCap Energy VIII	EnCap Energy X	EnCap Energy XI	Encap Flatrock Midstream III	EnCap Flatrock Midstream IV	GTCR X	GTCR XI	GTCR XII	Hellman & Friedman VII	Hellman & Friedman VIII	HIG Bayside III Europe

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# ADDITIONAL SUPPLEMENTARY INFORMATION SCHEDULE OF INVESTMENT EXPENSES

Total	195,024	300,000	469,444	800,000	528,721	348,255	130,986	729,203	11,417	750,000	369,410	802,668	458,868	108,059	300,002	43,093	1,022,536	1,200,000	1,189,192	1,200,000	890,586	1,200,000	479,999	1,214,111	714,584	1,006,856	387,556	249,342
Retiree Health Insurance Trust																									,	•	,	
MainePERS OPEB Trust	ı																								•		•	ı
Defined Contribution Plans	1																								,		,	
Group Life Insurance Plan - PLD Retirees	ı																											
Group Life Insurance Plan - State/ Teacher Retirees	,																											ı
Group Life Insurance Plan - Actives	1																									,		
PLD Agent Plan	503	774	1,212	2,065	1,365	899	338	1,883	29	1,936	954	2,085	1,185	279	774	111	2,640	3,098	3,070	3,098	2,299	3,098	1,239	3,134	1,845	2,599	1,001	644
PLD Consolidated Plan	37,534	57,738	90,348	153,967	101,757	67,025	25,209	140,341	2,197	144,344	71,096	155,443	88,313	20,797	57,738	8,294	196,796	230,950	228,870	230,950	171,401	230,950	92,380	233,666	137,528	193,778	74,588	47,988
Legislative Plan	170	262	410	669	462	304	114	637	10	655	323	202	401	94	262	38	893	1,048	1,039	1,048	778	1,048	419	1,060	624	879	338	218
Judicial Plan	955	1,470	2,300	3,919	2,590	1,706	642	3,572	26	3,674	1,810	3,957	2,248	529	1,470	211	5,009	5,879	5,826	5,879	4,363	5,879	2,351	5,948	3,501	4,932	1,899	1,221
State Employee and Teacher Plan	155,862	239,756	375,174	639,350	422,547	278,321	104,683	582,770	9,125	599,391	295,227	645,478	366,721	86,360	239,758	34,439	817,198	959,025	950,387	959,025	711,745	959,025	383,610	970,303	571,086	804,668	309,730	199,271
	HIG Buyouts II	HIG Capital V	HIG Europe II	HIG Middle Market LBO II	Inflexion Buyout IV	Inflexion Capital I	Inflexion Supplemental IV	Kelso IX	Kelso VIII	KKR Americas XII	KKR North America XI	KKR Special Situations I	KKR Special Situations II	Oaktree PE	Onex ONCAP IV	Onex Partners III	Onex Partners IV	Paine & Partners IV	Rhone V	Riverside Capital Appreciation VI	Riverside Micro-Cap III	Riverside Micro-Cap IV	Shoreview Capital III	Sovereign Capital	Summit Credit II	Summit GE IX	Summit GE VIII	Summit VC III

# ADDITIONAL SUPPLEMENTARY INFORMATION SCHEDULE OF INVESTMENT EXPENSES

Total		1,202,276	518,334	144,498	929,847	000'006	875,001	500,000	220,000	91,931	800,000		15,528	800,404	646,406	750,000	700,513	831,189	(42,088)	447,842	1,432,814	842,213	738,247	394,256	574,170	196,380	L .
Retiree Health Insurance Trust						1	1	1	1	1			10,016	1	1	1	1	1	1	1	1			1	1		
MainePERS II	1					1	1	1	1	1			629	1	1	1	1	1	1	1	1			1	1		
Defined Contribution Plans																											
Group Life Insurance Plan - PLD Retirees													653														
Group Life Insurance Plan - State/ Teacher Retirees													3,848														
Group Life Insurance Plan - Actives											,		372														
PLD Agent Plan	1,714	3,104	1,338	373	2,401	2,323	2,259	1,291	268	237	2,065		•	2,066	1,669	1,936	1,808	2,146	(109)	1,156	3,699	2,174	1,906	1,018	1,482	202	
PLD Consolidated Plan	127,809	231,388	99,758	27,810	178,957	173,213	168,401	96,229	42,341	17,693	153,967		•	154,045	124,406	144,344	134,820	159,969	(8,100)	86,191	275,757	162,091	142,082	75,878	110,504	37,795	
Legislative Plan	280	1,050	453	126	812	786	764	437	192	80	669			669	292	655	612	726	(37)	391	1,251	736	645	344	501	172	
Judicial Plan	3,253	5,890	2,539	208	4,555	4,409	4,287	2,449	1,078	450	3,919			3,921	3,167	3,674	3,432	4,072	(206)	2,194	7,019	4,126	3,617	1,931	2,813	962	
State Employee and Teacher Plan	530,728	960,844	414,246	115,481	743,122	719,269	699,290	399,594	175,821	73,471	639,350		es Fund B -	639,673	516,599	599,391	559,841	664,276	(33,636)	357,910	1,145,088	673,086	589,997	315,085	458,870	156,944	
	TCV IX	TCV VIII	Technology Impact Fund I	Thoma Bravo Special Opports II	Thoma Bravo XI	Thoma Bravo XII	Tillridge II	Water Street Healthcare III	Water Street Healthcare IV	Wayzata Opp III	Wynnchurch IV	Real Estate	Blackrock US Real Estate Securities Fund B	Blackstone Property Partners	Blackstone Real Estate partners (BREP VII)	DIACKSIONE REAL ESTATE PAULIERS (BREP VIII)	H/2 Credit Partners	Harrison Street Real Estate	High Street IV	High Street V	Invesco US Income	IronPoint Data Centers	JP Morgan Real Estate	KKR REPA I	KKR REPE	PMIT	Fillicipal Global Hivestors/Real

# ADDITIONAL SUPPLEMENTARY INFORMATION SCHEDULE OF INVESTMENT EXPENSES

Total	627,250	450,423	1,130,625	46,201	581,241	338,018	114,310	938,089	649,831	672,071	678,054	2,920,557	2,319,437	451,132	47,188	5,328,738	\$ 101,487,086	
Retiree Health Insurance Trust	ı							,								,	\$ 72,259	
MainePERS OPEB Trust	ı							,								4,747	\$ 8,868	
Defined Contribution Plans	ı							,		ı					47,188	,	\$ 47,188	
Group Life Insurance Plan - PLD Retirees																5,933	\$ 10,599	
Group Life Insurance Plan - State/ Teacher Retirees						,		•		,						34,955	\$ 62,449	
Group Life Insurance Plan - Actives	,															3,382	\$ 6,042	
PLD Agent Plan	1,619	1,163	2,919	119	1,501	873	295	2,422	1,678	1,735	1,750	7,540	5,988	1,165		13,636	\$ 261,466	
PLD Consolidated Plan	120,720	86,688	217,598	8,892	111,865	65,054	22,000	180,543	125,065	129,346	130,497	562,086	446,395	86,824		1,016,124	\$ 19,492,131	
Legislative Plan	548	393	286	40	208	295	100	819	568	287	592	2,551	2,026	394		4,611	\$ 88,453	
Judicial Plan	3,073	2,207	5,539	226	2,847	1,656	260	4,596	3,183	3,292	3,322	14,308	11,363	2,210		25,862	\$ 496,159	
State Employee and Teacher Plan	501,290	359,972	903,582	36,924	464,520	270,140	91,355	749,709	519,337	537,111	541,893	2,334,072	1,853,665	360,539		4,219,488	80,941,472	
<u>й</u> Е	Prudential Senior Housing V	Rubenstein III	Smart Markets	Walton Street Co-Invest	Walton Street RE VII	Walton Street RE VIII	Westbrook IX	Westbrook X	Risk Diversifier AQR Liquid Enhanced Alternative Premia	Bridgewater Pure Alpha	Bridgewater Pure Alpha Major Markets	GMO	Windham Capital	Windham Risk Premia	Other investment expenses	In-house investment management	Total Investment Expenses \$	

# ADDITIONAL SUPPLEMENTARY INFORMATION SCHEDULE OF ADMINISTRATIVE EXPENSES

	State Employee and Teacher Plan	Judicial Plan		Legislative Plan	PLD Consolidated Plan	PLD Agent Plan	Group Life Insurance Plan	Group Life Insurance Retired SETP	Group Life Insurance Retired PLD	Defined Contribution Plans	Retiree Health Insurance Trust	Total
Personnel services	\$ 5,688,580	\$ 34,	34,838	\$ 6,211	\$ 1,361,515	\$ 18,661	\$ 41,494	\$ 434,547	\$ 75,439	\$ 218,268	\$ 6,480	\$ 7,886,033
Professional services	1,470,813	6	200'6	1,606	352,027	4,826	10,728	112,355	19,505	56,434	1	2,037,301
Talanham data and internations	686,507	4,	4,204	750	164,310	2,252	5,007	52,442	9,104	26,341	٠	950,917
Telephone, data, and internet SVS	126,184		773	138	30,201	414	920	629'6	1,673	4,842		174,784
Office real and building operations	268,453	Ĺ,	1,644	293	64,252	881	1,958	20,507	3,560	10,300		371,848
Once tent and building operations	198,198	T,	1,214	216	47,437	650	1,446	15,140	2,628	7,605	ı	274,534
Other against expenses	1,118,385	9	6,849	1,221	267,676	3,669	8,157	85,433	14,831	42,912		1,549,133
Ourer operating experises	519,122	κ'n	3,179	267	124,248	1,703	3,786	39,655	6,884	19,919		719,063
Total administrative expenses	\$ 10,076,242	\$ 61,708		\$ 11,002	\$ 2,411,666	\$ 33,056	\$ 73,496	\$ 769,718	\$ 133,624	\$ 386,621	\$ 6,480	\$ 13,963,613

# ADDITIONAL SUPPLEMENTARY INFORMATION SCHEDULE OF PROFESSIONAL FEES

	Total
Professional services:	
Audit	\$ 71,820
Actuarial services	343,639
IT Services	946,688
Legal services	177,369
Medical consulting	377,458
Other services	 120,328
Total professional services	\$ 2,037,301

# INVESTMENT SECTION



Maine State Gemstone: Tourmaline



December 10, 2018

Board of Trustees (the "Board") Maine Public Employees Retirement System 46 State House Station Augusta, ME 04333-0046

RE: Maine Public Employees Retirement System ("MainePERS" or the "System")

To the Board:

Cambridge Associates, LLC has been retained by the Board of Trustees to advise on MainePERS' investment policy, perform quarterly reviews of performance and provide other general investment advice.

It is our opinion that MainePERS' assets are managed under detailed and well-articulated policies, appropriate to the circumstances of the System. Per the MainePERS' Investment Policy Statement, the portfolio's investment objectives attempt to balance the System's twin goals of generating investment returns (to ensure growth of the trust funds) and minimizing investment risks (loss of capital and cash flow shortfalls). It is our understanding that all performance measurements and comparisons have been made using standard performance evaluation methods consistent with industry standards. It is also our opinion that the Board, Executive Director, and staff have taken appropriate measures for overseeing the management of the System's assets and ensuring that investments have conformed with the Systems' investment policy statement. Furthermore, based upon our interactions with the Board, we believe the Board is providing prudent oversight of MainePERS' investments.

ARLINGTON

BEIJING

Boston

DALLAS

LONDON

MENLO PARK

SINGAPORE

SYDNEY

Sincerely,

Brian McDonnell

Global Head of the Pension Practice

125 High Street | Boston, Massachusetts 02110-2112 | tel 617.457.7500 | fax 617.457.7501 | www.cambridgeassociates.com

### **INVESTMENT ACTIVITY**

The table and graph below summarize the defined benefit portfolio activity for the ten years ended June 30, 2018. During this period, assets grew by \$3.8 billion from \$10.5 billion to \$14.3 billion. Substantially all of this increase is attributable to net investment gains. In the year ended June 30, 2018, benefit payments exceeded contributions, and this is expected to continue in the future.

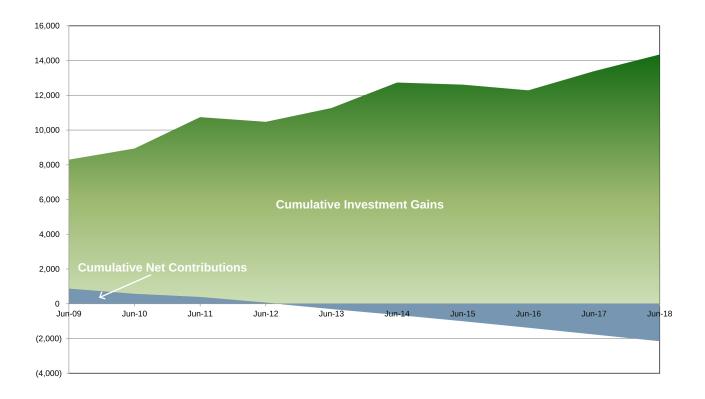
The rates of return displayed in the table are time weighted rates of return. The table displays the net invested assets of the investment portfolio. Securities lending liabilities are netted against securities lending collateral. Certain assets, such as cash in the System's operating bank accounts are not considered part of the investment portfolio, and are therefore not included in the table or graph.

### SUMMARY OF INVESTMENT ACTIVITY

FY Ended June 30	Opening Market Value (\$ millions)	Closing Market Value (\$ millions)	Rate of Return
2018	\$ 13,385	\$ 14,344	10.3%
2017	\$ 12,283	\$ 13,385	12.5%
2016	\$ 12,610	\$ 12,283	0.6%
2015	\$ 12,732	\$ 12,610	2.0%
2014	\$ 11,264	\$ 12,732	16.7%
2013	\$ 10,470	\$ 11,264	11.1%
2012	\$ 10,739	\$ 10,470	0.6%
2011	\$ 8,934	\$ 10,739	22.4%
2010	\$ 8,291	\$ 8,934	11.1%
2009	\$ 10,538	\$ 8,291	-18.8%
		Annualized 10-year period	6.3%
		Cumulative 10-year period	83.5%

### **SUMMARY OF INVESTMENT ACTIVITY**

(continued)



### INVESTMENT PORTFOLIO

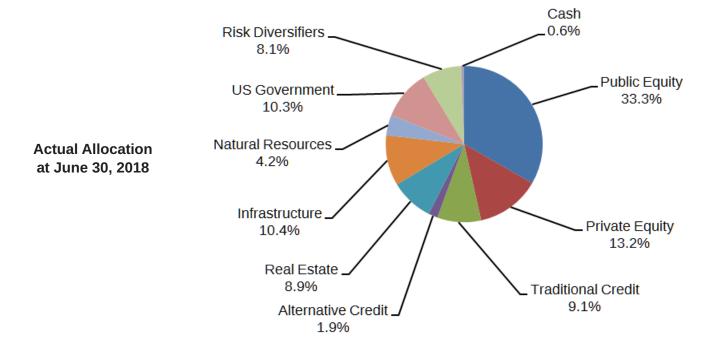
The graph above illustrates the importance of investment returns to the financing of the System's benefit plans. In this section, the investment strategy MainePERS has adopted to optimize the financial health of the plans is reviewed.

The System invests plan assets in a number of major asset classes. The table and pie charts on the following page display the actual and strategic target allocations at June 30, 2018.

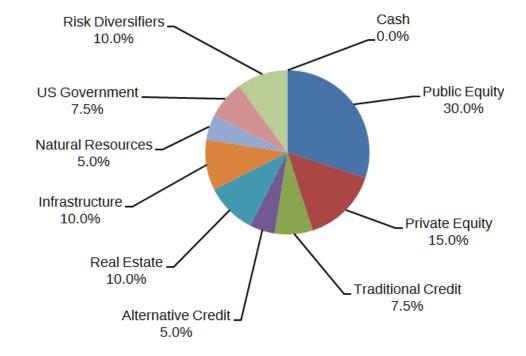
The Board of Trustees is of the view that a prudent investment strategy for these plan assets involves accepting some level of investment risk. Because most of its benefit payments are not due for several decades into the future, the System has concluded it is prudent to invest a substantial portion of its assets in equities and other return-seeking investments. The Board allocates 60% to 80% of assets to equities and equity like securities and is of the view that this provides a prudent compromise between low risk and high return for the plans.

### STRATEGIC ASSET ALLOCATION

	<u>Public</u> Equity	<u>Private</u> <u>Equity</u>	Traditional L	Alternative Credit	<u>Real</u> Estate	<u>Infrastructure</u>	<u>Natural</u> <u>Resources</u>	<u>US</u> Government	<u>Risk</u> Diversifiers	<u>Cash</u>	Total	
Actual Allocation	33.3%	13.2%	9.1%	1.9%	8.9%	10.4%	4.2%	10.3%	8.1%	0.6%	100.0%	
Target Allocation	30.0%	15.0%	7.5%	5.0%	10.0%	10.0%	5.0%	7.5%	10.0%	0.0%	100.0%	







The System's Investment Policy has long-term, strategic asset class targets and requires the investment team to rebalance the portfolio to these targets as needed. In 2017, the System changed its target allocation to 30% Public Equity, 15% Private Equity, 10% Risk Diversifiers, 10% Real Estate, 10% Infrastructure, 5% Natural Resources, 7.5% Traditional Credit, 5% Alternative Credit, and 7.5% US Government Securities. While the Board has approved the new Asset Allocation targets, it will take several years to implement and fully fund the new allocation.

Because most of its benefit payments are not due for several decades into the future, the System has concluded it is prudent to invest a substantial portion of its assets in equities and other return-seeking investments. For the past ten years, the System has invested between 60% and 80% of its assets in equities. Over sufficiently long periods, equities have generally outperformed bonds. The System expects this relationship to hold in the future.

Essentially all of the assets of the System's plans are in portfolios managed by professional investment management firms. These managers act as fiduciaries and invest the assets assigned to them in accordance with the System's investment policies and the individual agreements between MainePERS and the investment managers.

Approximately 53% of assets were invested in passively managed index funds at June 30, 2018. The Board of Trustees views index funds as a cost-effective way of investing in most of the world's capital markets. However, the System does make use of actively managed portfolios where it has identified managers who are thought to be able to add value over an index fund, net of all costs.

The System uses a single firm to manage all of its passive investments. This enables the System to obtain attractive fees and also provides other cost savings on certain kinds of transactions. Since passively managed portfolios have a low risk of significantly underperforming their benchmarks, the Board, the investment staff, and the System's investment consultant find this concentration of assets to be appropriate.

In fiscal year 2017, the System conducted a thorough review of its strategic asset allocation. This type of review is typically conducted every three years with the assistance of the System's actuary and the general investment consultant.

### BENEFIT PLANS - INVESTMENT PORTFOLIO

		at 06/30	/2018		at 06/30/201	7
	<u>0</u>	millions of dollars	% of <u>assets</u>		millions <u>f dollars</u>	% of assets
Public Equity	\$	4.778	33.3%	\$	5.350	40.0%
BlackRock Total Public Equity	<u> </u>	4,778 4,778	33.3% 33.3%	\$	5,350 5,350	40.0% 40.0%
Total Public Equity	Ψ	4,770	33.370	Φ	5,350	40.070
Traditional Credit						
BlackRock	\$	1,308	9.1%	\$	1,012	7.6%
Total Traditional Credit	\$	1,308	9.1%	\$	1,012	7.6%
US Government						
BlackRock	\$	1,475	10.3%	\$	2,042	15.3%
Total US Government	\$	1,475	10.3%	\$	2,042	15.3%
Private Equity						
ABRY Advanced Securities Fund II	\$	3	0.0%	\$	8	0.1%
ABRY Advanced Securities Fund III		19	0.1%		15	0.1%
ABRY Senior Equity IV		8	0.1%		9	0.1%
ABRY Senior Equity V		3	0.0%		1	0.0%
ABRY Heritage		2	0.0%		2	0.0%
ABRY VII		4	0.0%		6	0.0%
ABRY VIII		16	0.1%		16	0.1%
Advent International GPE VII		32	0.2%		28	0.2%
Advent International GPE VIII		26	0.2%		12	0.1%
Advent LAPEF VI		11	0.1%		6	0.0%
Affinity Asia Pacific IV		54	0.4%		34	0.3%
Berkshire VIII		8	0.1%		14	0.1%
Berkshire IX		17	0.1%		5	0.0%
Blackstone Cap VI		30	0.2%		27	0.2%
Blackstone Cap VII		15	0.1%		7	0.1%
Carlyle Asia Partners Fund III		4	0.0%		7	0.1%
Carlyle Asia Partners Fund IV		77	0.5%		43	0.3%
Centerbridge Capital		16	0.1%		10	0.1%
Charterhouse VIII		0	0.0%		-	0.0%
Charterhouse IX		1	0.0%		1	0.0%
Charterhouse X		25	0.2%		17	0.1%
CVC Capital Partner VI		59	0.4%		42	0.3%
EnCap Energy Capital Fund VIII		at 06/30	<b>/2018</b> 0.1%		<sup>13</sup> at 06/30/201	7 0.1%

# BENEFIT PLANS - INVESTMENT PORTFOLIO (continued)

	(50				
	ı	nillions	% of	millions	% of
	<u>of</u>	dollars	<u>assets</u>	<u>of dollars</u>	<u>assets</u>
EnCap Energy Capital Fund XI		3	0.0%	_	0.0%
EnCap Flatrock Midstream III		8	0.1%	8	0.1%
EnCap Flatrock Midstream IV		1	0.0%	-	0.0%
GTCR X		9	0.1%	20	0.2%
GTCR XI GTCR XII		27 1	0.2% 0.0%	21	0.2% 0.0%
Hellman & Friedman VII		39	0.3%	35	0.3%
Hellman & Friedman VIII		32	0.2%	3	0.0%
HIG Bayside Loan Opportunity II		10	0.1%	14	0.1%
HIG Bayside Loan Opportunity II (Europe)		14	0.1%	2	0.0%
HIG Bayside Loan Opportunity III (Europe) HIG Bayside Brazil & Latin America		22 21	0.2% 0.1%	20 1	0.2% 0.0%
HIG Buyouts II		23	0.2%	12	0.1%
HIG Capital Partners V		10	0.1%	3	0.0%
HIG Middle Market LBO Fund II		29	0.2%	10	0.1%
Inflexion Buyout Fund IV		24	0.2%	13	0.1%
Inflexion Supplemental Fund IV Inflexion Partnership Capital Fund I		8 14	0.1% 0.1%	3 7	0.0% 0.1%
Kelso VIII		1	0.0%	2	0.0%
Kelso IX		55	0.4%	32	0.2%
KKR Americas XII		9	0.1%	-	0.0%
KKR North America XI		68	0.5%	67	0.5%
KKR Special Situations KKR Special Situations II		51 33	0.4% 0.2%	65 18	0.5% 0.1%
Oaktree Opportunity Fund VIII		3	0.0%	7	0.1%
ONCAP IV		4	0.0%	1	0.0%
Onex Partners III		6	0.0%	6	0.0%
Onex Partners IV		44	0.3%	40	0.3%
Paine & Partner Rhone V		43 31	0.3% 0.2%	27 11	0.2% 0.1%
Riverside Capital Appreciation VI		51	0.4%	52	0.4%
Riverside Micro Cap Fund III		51	0.4%	42	0.3%
Riverside Micro Cap Fund IV		44	0.3%	18	0.1%
Shoreview Capital III		17	0.1%	12	0.1%
Sovereign Capital IV Summit GE VIII		14 18	0.1% 0.1%	12 26	0.1% 0.2%
Summit GE IX		21	0.1%	3	0.0%
Summit VC III		13	0.1%	17	0.1%
Summit Credit Partners II		36	0.3%	31	0.2%
Summit VC IV		18	0.1%	11	0.1%
Technology Impact Fund TCV VIII		10 70	0.1% 0.5%	- 54	0.0% 0.4%
TCV IX		20	0.1%	5	0.0%
Thoma Bravo XI		62	0.4%	59	0.4%
Thoma Bravo XII		40	0.3%	23	0.2%
Thoma Bravo Spec Opp Fund Tillridge Global Agribusiness II		18 5	0.1% 0.0%	17	0.1% 0.0%
Water Street Healthcare III		24	0.2%	18	0.0%
Water Street Healthcare IV		3	0.0%	0	0.0%
Wayzata Opportunities III		7	0.1%	9	0.1%
Wynnchurch Capital		20	0.1%	8	0.1%
Co-Investments Total Private Equity	\$	193 1,887	1.3% 13.2%	240 <b>\$ 1,464</b>	1.8% <b>10.9%</b>
Total Frivate Equity	Ψ	1,007	13.270	Ψ 1,404	10.570
Real Estate					
Blackstone Property Partners	\$	176	1.2%	\$ -	0.0%
Blackstone RE Partners VII Blackstone RE Partners VIII		60 30	0.4% 0.2%	65 23	0.5% 0.2%
H/2 Credit Partners		66	0.5%	88	0.2%
Harrison Street		112	0.8%	107	0.8%
High Street IV		0	0.0%	2	0.0%
High Street V		17	0.1%	10	0.1%
Invesco US Income IPI Data Center Partners I		180 9	1.3% 0.1%	172	1.3% 0.0%
JP Morgan Strategic Property Fund		0	0.0%	162	1.2%
KKR REPA I		21	0.1%	25	0.2%
KKR REPA II		4	0.0%	<del>-</del>	0.0%
KKR REPE		18	0.1%	10	0.1%
Prima Advisors Mortgage Fund Principal US Property Fund		91 96	0.6% 0.7%	91 89	0.7% 0.7%
Principal OS Property Fund  Prudential PRISA Fund		86	0.6%	112	0.7%
Prudential Senior Housing V		29	0.2%	24	0.2%
Rubenstein Partners III		13	0.1%	5	0.0%
Smart Markets Walton Street VII		187	1.3% 0.2%	181 37	1.3% 0.3%
vvaliuli Sueel vii		<sup>29</sup> at 06/30	0.290	at 06/30	/2017

# BENEFIT PLANS - INVESTMENT PORTFOLIO (continued)

	<u> </u>	millions of dollars	% of <u>assets</u>	<u>(</u>	millions of dollars	% of <u>assets</u>
Walton Street VIII		22	0.2%		13	0.1%
Westbrook IX		8	0.1%		10	0.1%
Westbrook X		18	0.1%		8	0.1%
Co-Investments		8	0.1%		0	0.0%
Total Real Estate	\$	1,281	8.9%	\$	1,231	9.2%
Infrastructure						
Alinda Infrastructure Fund II	\$	26	0.2%	\$	40	0.3%
ArcLight Energy Partners V		51	0.4%		43	0.3%
ArcLight Energy Partners VI Brookfield II		119 107	0.8% 0.7%		86 99	0.6% 0.7%
Brookfield III		39	0.3%		25	0.2%
Carlyle Infrastructure Fund		3	0.0%		14	0.1%
Carlyle Power Partners II		20	0.1%		14	0.1%
Cube Infrastructure Fund		51	0.4%		52	0.4%
EQT III First Reserve Energy		33 24	0.2% 0.2%		28	0.0% 0.2%
First Reserve Energy II		54	0.4%		23	0.2%
Global Infrastructure Partners Fund		40	0.3%		30	0.2%
Global Infrastructure Partners Fund II		81	0.6%		71	0.5%
Global Infrastructure Partners Fund III IFM Global Infrastructure		77 145	0.5%		25 118	0.2% 0.9%
KKR Infrastructure		61	1.0% 0.4%		54	0.4%
KKR Infrastructure II		135	0.9%		58	0.4%
Meridiam Infrastructure Europe I (Secondary)		21	0.1%		22	0.2%
Meridiam Infrastructure Europe I Class B (Secondary)		17	0.1%		0	0.0%
Meridiam Infrastructure Europe II (Secondary)		24	0.2%		20	0.2%
Meridiam Infrastructure Europe II Class B (Secondary) Meridiam Infrastructure Europe III		3 20	0.0% 0.1%		0 1	0.0% 0.0%
Meridiam Infrastructure North America II		53	0.4%		40	0.3%
Meridiam Infrastructure North America II (CIP)		0	0.0%		0	0.0%
Meridiam Infrastructure North America II (Secondary)		14	0.1%		10	0.1%
Meridiam Infrastructure North America III		0	0.0%		-	0.0%
Stonepeak Infrastructure II Stonepeak Infrastructure III		106 12	0.7% 0.1%		87	0.7% 0.0%
Co-Investments		151	1.1%		_	0.0%
Total Infrastructure	\$	1,485	10.4%	\$	963	7.2%
Alternative Credit						
Mesa West Core	\$	100	0.7%	\$	100	0.7%
Audax	Ψ	98	0.7%	Ψ	-	0.0%
TCP Direct Lending III		36	0.2%		-	0.0%
Owl Rock		37	0.3%		32	0.2%
Co-Investments Total Alternative Credit	\$	<u>5</u> <b>276</b>	0.0% <b>1.9%</b>	\$	132	0.0% <b>1.0%</b>
Total Alternative Credit	φ	270	1.370	φ	132	1.070
Risk Diversifiers						
AQR Liquid Enhanced Alternative Premia	\$	284	2.0%		-	0.0%
Bridgewater Pure Alpha Bridgewater Pure Alpha Major Markets		200 202	1.4% 1.4%		-	0.0% 0.0%
Grantham, Mayo, Van Oterloo		202	0.0%		356	2.7%
Windham Capital		331	2.3%		303	2.3%
Windham Risk Premia		144	1.0%		-	0.0%
Total Risk Diversifiers	\$	1,161	8.1%	\$	660	4.9%
Natural Resources						
ACM Fund II	\$	18	0.1%	\$	6	0.0%
ACM Permanent Crops		37	0.3%		35	0.3%
AMERRA Agri Fund II Homestead Farmland II		33 20	0.2% 0.1%		30 9	0.2%
Orion Mine Finance II		25	0.1%		29	0.1% 0.2%
Taurus Mining Finance		20	0.1%		13	0.1%
Taurus Mining Finance Annex		5	0.0%		1	0.0%
Teays River		279	1.9%		224	1.7%
Twin Creeks Timber US Farming Realty III		113 59	0.8% 0.4%		92 40	0.7% 0.3%
Total Natural Resources	\$	607	4.2%	\$	478	3.6%
	•					
Cash Liquidity Aggregat		85	0.6%		54	0.4%
Liquidity Account Total Cash	\$	85 85	0.6%	\$	54 <b>54</b>	0.4%
Total Assets	\$	14,344	100%	\$	13,385	100%

## LARGEST HOLDINGS at June 30, 2018

<b>Top 10 Direct Common Stock Holdings</b>	М	arket Value	% of Assets
Apple	\$	79,558,242	0.55%
Microsoft		65,288,498	0.46%
Amazon		60,378,596	0.42%
Alphabet		59,123,645	0.41%
Facebook		40,370,952	0.28%
Berkshire Hathaway		31,579,127	0.22%
JP Morgan Chase		30,871,959	0.22%
Exxon Mobil		30,626,729	0.21%
Johnson & Johnson		28,438,456	0.20%
Bank of America		23,307,689	0.16%

Some of the System's index fund investments are made through commingled funds, with MainePERS owning units in the funds, and having beneficial, rather than direct ownership of the securities. The largest holdings list reports direct holdings held outside of the commingled funds. For a complete list of the System's holdings, please contact MainePERS.

### **SECURITIES LENDING**

MainePERS earns additional income on its investment portfolio by lending its securities. The System pays its custodian for managing the securities lending program. Information regarding the results of the securities lending program for the current and prior fiscal years may be found in the Financial Section starting on page 18.

Several of the collective trusts through which the System holds interests in commingled funds also lend securities. Because these trusts are legal entities separate from MainePERS, their lending activities are not reflected in the securities lending results reported in the financial statements. The System shares in the income and the risks of the securities lending activity in the commingled funds, and the income is included in the total income and return figures in this Investment Section and the Financial Statements.

### **INVESTMENT PERFORMANCE**

The table on the following pages displays the rates of return on the System's investment portfolio over the last ten fiscal years, and for the three, five, and ten-year periods ended June 30, 2018. Because the System's investment strategy has changed very little from year to year, and because the majority of the System's assets are indexed, these results are determined almost entirely by the behavior of the capital markets. Negative returns for the fiscal year ended June 30, 2009 were the result of declines in domestic and foreign stock markets, partially offset by gains in the domestic bond market.

Over the ten-year period, the annualized rate of return on the System's assets was 6.3%. MainePERS experienced nine years of positive returns and one year of negative returns. These results are consistent with the long-term risk/return strategy that forms the basis of the System's policies. At 6.3%, the ten-year return has underperformed relative to the 6.75% investment return assumption utilized in the actuarial process.

The total return figures in the table on pages 86 and 87 are net of all expenses that can be directly attributed to the investment program (see Expenses, page 88). The table reports time weighted rates of return and all figures for periods greater than one year are annualized.

### PERFORMANCE: ACTUAL RETURNS VS. BENCHMARK RETURNS

(All returns are time weighted)

	Ι.	TOTAL FUN	ID	DOI	MESTIC EQ	UITY	FO	REIGN EQI	YTIL	FD	KED INCOM	E (2,3)	F	REAL ESTAT	ΓE
Fiscal Year Ended June 30	Actual <u>Return</u>	Benchmark <u>Return<sup>(4)</sup></u>	Excess Return <sup>(1)</sup>	Actual <u>Return</u>	Benchmark <u>Return<sup>(5)</sup></u>	Excess Return <sup>(1)</sup>	Actual <u>Return</u>	Benchmark <u>Return<sup>(6)</sup></u>		Actual <u>Return</u>	Benchmark <u>Return<sup>(7)</sup></u>	Excess Return <sup>(1)</sup>	Actual <u>Return</u>	Benchmark <u>Return</u> 8)	Excess Return <sup>(1)</sup>
2018	10.3%	8.5%	1.8%	14.8%	14.8%	0.1%	7.7%	7.3%	0.4%	1.0%	-0.4%	1.4%	8.6%	7.1%	1.4%
2017	12.5%	11.4%	1.1%	18.5%	18.5%	0.0%	20.8%	20.5%	0.4%	0.6%	-0.3%	0.9%	9.8%	5.6%	4.1%
2016	0.6%	1.0%	-0.4%	1.8%	2.0%	-0.3%	-10.1%	-9.8%	-0.3%	3.6%	6.0%	-2.4%	10.2%	9.4%	0.8%
2015	2.0%	1.8%	0.3%	7.2%	7.2%	0.0%	-5.1%	-4.9%	-0.2%	-0.4%	1.9%	-2.3%	11.4%	8.8%	2.6%
2014	16.7%	15.6%	1.1%	24.8%	25.0%	-0.2%	22.0%	22.3%	-0.3%	3.8%	4.4%	-0.6%	10.7%	5.5%	5.1%
2013	11.1%	10.4%	0.8%	21.5%	21.5%	0.1%	13.9%	14.1%	-0.2%	-1.9%	-0.7%	-1.3%	10.2%	7.8%	2.4%
2012	0.6%	1.4%	-0.7%	3.8%	4.0%	-0.2%	-14.3%	-14.2%	-0.2%	8.8%	9.0%	-0.1%	11.1%	13.4%	-2.3%
2011	22.4%	21.5%	0.8%	32.6%	32.4%	0.2%	30.0%	30.3%	-0.3%	6.2%	3.9%	2.3%	22.5%	16.0%	6.5%
2010	11.1%	11.9%	-0.8%	18.3%	16.1%	2.2%	9.7%	10.9%	-1.2%	10.8%	9.5%	1.3%	-4.1%	-1.5%	-2.6%
2009	-18.8%	-19.4%	0.6%	-29.3%	-26.4%	-2.9%	-32.1%	-30.5%	-1.6%	-0.8%	6.1%	-6.9%	-35.0%	-19.6%	-15.4%
3 years ending 2018	7.7%	6.9%	0.8%	11.5%	11.5%	-0.1%	5.4%	5.2%	0.1%	1.7%	1.7%	0.0%	9.5%	7.4%	2.1%
5 years ending 2018	8.2%	7.5%	0.7%	13.1%	13.2%	-0.1%	6.3%	6.3%	0.0%	1.7%	2.3%	-0.6%	10.1%	7.3%	2.8%
10 years ending 2018	6.3%	5.8%	0.4%	10.0%	10.3%	-0.3%	2.5%	2.9%	-0.4%	3.1%	3.9%	-0.8%	4.2%	4.8%	-0.6%

### Notes:

- 1. Excess Return is Actual Return minus Benchmark Return.
- 2. The asset class of General Fixed Income was re-opened in the 4th quarter of 2008.
- 3. Fixed Income includes TIPS as of 7/31/04.
- 4. Total Fund Benchmark: A combination of the the benchmarks for the five major asset classes using the target asset class weights.
- 5. Domestic Equity Benchmark: Russell 3000 Index.
- 6. Foreign Equity Benchmark: Morgan Stanley Capital International All Country World Ex-U.S. Free, since Jan. 1, 1998.
- 7. General Fixed Income Benchmark: Barclays Capital Aggregate Bond Index less Governments plus TIPS, since Oct 2008.

TABLE CONTINUED ON NEXT PAGE

### PERFORMANCE: ACTUAL RETURNS VS. BENCHMARK RETURNS

(All returns are time weighted)

ı	INF	RASTRUCT	TURE	Р	RIVATE EQU	ITY	NATU	RAL RESO	URCES	ALT	ERNATIVE (	CREDIT	RISK	DIVERSI	FIERS	ı
	Actual I <u>Return</u>	Benchmark <u>Return<sup>(9)</sup></u>		Actual <u>Return</u>	Benchmark <u>Return</u> <sup>(10)</sup>	Excess Return <sup>(1)</sup>		Benchmark <u>Return<sup>(11)</sup></u>		Actual <u>Return</u>	Benchmark <u>Return</u> <sup>(13)</sup>	Excess Return <sup>(1)</sup>		Benchmark <u>Return<sup>(14)</sup></u>	Excess Return <sup>(1)</sup>	
	16.6% 14.7% 6.8% 5.4% 15.5%	12.6% 12.4% 11.8% 3.6% 14.7%	4.0% 2.2% -5.0% 1.8% 0.8%	22.7% 19.8% 6.6% 8.9% 9.8%	17.8% 21.5% 5.1% 10.3% 7.9%	4.9% -1.8% 1.5% -1.4% 2.0%	Data	Not Meanir	ngful <sup>(12)</sup>	Dat	a Not Meani	ngful <sup>(12)</sup>	Data	Not Meani	ngful <sup>(12)</sup>	
	12.6%	12.3%	0.3%	16.1%	14.6%	1.5%										
	11.7%	11.0%	0.7%	13.4%	12.4%	1.0%										

### Notes (continued):

- 8. Real Estate Benchmark: A combination of DJ Wilshire Real Estate Securities Index and National Council of Real Estate Investment Fiduciaries Property Index since July 1, 2005.
- 9. Infrastructure Benchmark: CA Infrastructure Median.
- 10. Private Equity Benchmark: Russell 3000 Index + 3%.
- 11. Natural Resources Benchmark: CA Natural Resources Median.
- 12. Natural Resources, Alternative Credit and Risk Diversifiers returns are not meaningful at this stage of the program.
- $13. \, Alternative \, Credit \, Benchmark: \, 50\% \, Bank \, of \, America \, US \, High \, Yield \, II + 50\% \, S\&P/Loan \, Syndications \, \& \, Trading \, Association \, US \, Leverage \, Loan \, Index.$
- 14. Risk Diversifiers Benchmark: 0.3 Beta Morgan Stanley Capital International All Country World Index.

TABLE CONTINUED FROM PREVIOUS PAGE

### **INVESTMENT EXPENSES**

The adjacent table displays investment management expenses directly attributable to the investment program and paid directly by the System. Examples of directly attributable expenses include fees paid to investment managers and compensation and expenses of the System's own investment professionals, including time spent on investment matters by staff other than full-time investment professionals to the extent it can be separately identified. Other expenses not paid directly by the System include the expenses of securities lending programs conducted by managers of the commingled funds.

The increase of expenses in 2018 can be attributed to continued funding of the Alternatives Programs.

r			1
Detail for year ended 6/30/2018	Do	ollar Expense	
Domestic Equity	\$	(97,578)	
Passive Fixed Income		290,176	
Risk Diversifiers		9,825,585	
Real Estate		14,366,304	
Infrastructure		24,334,968	
International Equity		747,102	
Private Equity		40,648,348	
Natural Resources		5,885,057	
Consultants Other Investment Expenses In House Expenses DC Investment Expenses Retiree Health Insurance Trust Expenses Group Life Insurance Expenses MainePERS OPEB		1,118,750 578,886 3,582,085 47,188 72,259 79,090 8,868	
Total Investment Expenses - All Plans	\$	101,487,088	

Total for FY ended June 30		% of Total	1
<u>Defined Benefit Plans</u>	\$ Millions	<u>Assets</u>	
2018	101.5	0.71%	
2017	93.8	0.70%	
2016	76.0	0.62%	
2015	54.7	0.44%	
2014	41.1	0.32%	
2013	31.4	0.28%	
2012	24.3	0.23%	
2011	19.7	0.18%	
2010	22.0	0.25%	
2009	23.1	0.28%	J

### BROKERAGE COMMISSIONS Year Ended June 30, 2018

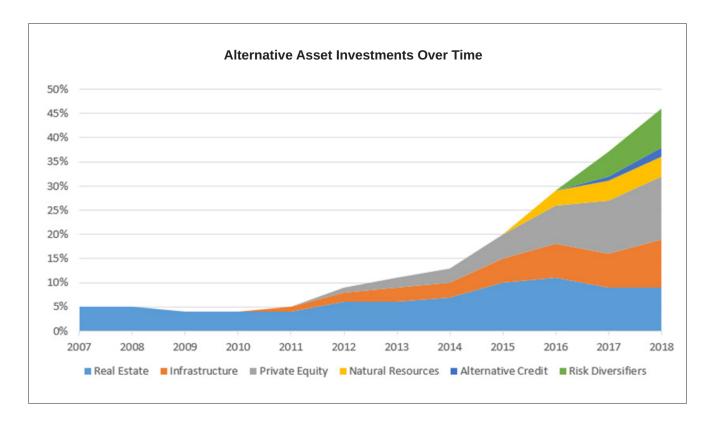
Broker	Con	nmissions	 nt Traded lions)	Cost of Trade (%)	Total Shares (Millions)	Commissions (Cents per Share)
UBS	\$	10,688	\$ 227	0.005%	3.1	0.340
JP Morgan Chase		6,821	224	0.003%	1.7	0.409
Societe Generale		4,625	125	0.004%	0.0	244.839
Industrial & Commercial Bank		3,520	82	0.004%	1.2	0.300
Wells Fargo		2,635	62	0.004%	0.9	0.300
Credit Suisse		2,448	105	0.002%	1.9	0.130
Stone & Youngberg		2,277	72	0.003%	0.0	215.181
Deutsche Bank		1,814	50	0.004%	0.7	0.255
Citigroup		1,386	33	0.004%	0.5	0.273
Merrill Lynch		1,004	71	0.001%	1.6	0.061
Other		950	92	0.001%	1.9	0.051
Total	\$	38,168	\$ 1,144	0.003%	13.5	0.284

Commissions reported above are those paid directly by MainePERS. The table does not include other transaction costs the System may incur, nor does it include brokerage commissions incurred indirectly through investments in commingled funds. Brokerage commissions and other transaction costs are excluded from the expense table on page 88. Those commissions and expenses are accounted for in the net income and total return figures reported elsewhere in this report.

Selection of brokers is at the discretion of the System's investment managers, subject to their fiduciary obligations. MainePERS does not have any directed brokerage programs, commission recapture programs, or similar arrangements. Some of the System's managers have soft dollar arrangements with brokers, in which the broker agrees to provide additional services to the manager beyond trade execution. In addition some of the System's managers employ placement agents to market their funds. MainePERS does not pay placement agent fees and requires managers that do use placement agents to disclose the identity of said parties and the method and amount of payment.

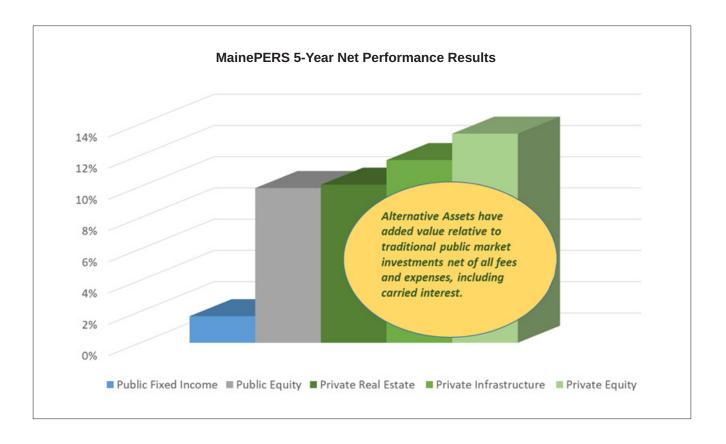
### A NOTE ON ALTERNATIVE ASSETS

The MainePERS Investment Team in 2008 recommended that the System increase its portfolio diversification by adding a number of alternative asset classes to its strategic asset allocation. Prior to this, essentially all of the volatility risk contained in the System's portfolio was due to its holdings of public equities. The expansion into alternative assets began with a strategic target allocation of 20% across Real Estate, Infrastructure, and Private Equity. In subsequent years the target overall allocation to alternative assets was increased to 55%, and Natural Resources, Alternative Credit, and Risk Diversifiers were added to the System's alternatives portfolio. The below chart shows the evolution of the System's Alternative Asset portfolio:



Each of these alternative asset classes plays a unique role in the overall portfolio. Private equity seeks to grow capital at a rate in excess of public equities by taking control positions in individual companies. Real Estate and Infrastructure provide the portfolio with stability, by generally investing in long-lived assets with predictable cash flows. Risk Diversifiers are investments specifically chosen for their ability to earn returns unrelated to public market returns. More in-depth descriptions of alternative asset classes can be found in the System's Investment Policy Statement available on the System's website. The decision to reduce portfolio risk by allocating capital across these asset classes was the result of a deliberative process involving the Trustees, Investment Team and consultants. This process weighed the risks of each asset class (return volatility, illiquidity, potential for extreme downside, adverse selection, etc.) against potential benefits (diversification, stability, higher returns, cash yields, etc.), and took into account interactions between asset classes. The goal of the process was to construct a portfolio that would best enable the System to make future benefit payments while keeping required contributions stable at a reasonable level.

The System's allocation to alternative assets is implemented largely via investments in private funds managed by specialized asset managers. Over the last decade the Investment Team has implemented the System's alternative asset allocation by carefully selecting investment managers in each asset class. This part of the process is crucial – academic research demonstrates the importance of manager selection, as the dispersion between good and poor managers is far wider in alternative assets than in traditional asset classes. The Investment Team has proceeded with the implementation of the System's target allocations in deliberate fashion, and has invested in over 150 individual funds managed by 70 managers. While it is likely that some of these investments may perform below expectations, we believe that the alternative asset portfolio is well-constructed and composed of top performers. While evaluating investment performance requires taking a long-term view, and this is especially true with alternative assets, we are pleased with the performance of the alternative asset portfolio to-date.



Finally, it is important to note that while in many cases expenses associated with alternative assets are higher than for traditional asset classes, all returns and asset values reported in this document are net of all fees and expenses. Many of the System's alternative investment partnership agreements provide for the manager to receive a share of profits, known as carried interest. Carried interest is generally only paid once the System has earned a sufficient return, generally in excess of the System's discount rate. Reported returns and asset values are net of carried interest.

### **GROUP LIFE INSURANCE PROGRAM**

The Group Life Insurance program is supported by premiums paid by its participants and by reserves. Substantially all the reserves are maintained in an investment portfolio, for which the summary results are displayed below. (Certain assets, such as the cash in the operating bank account, are not considered part of the investment portfolio.) Over this period, the increase in portfolio value is attributable to positive investment return and positive cash flow.

### **SUMMARY OF INVESTMENT ACTIVITY**

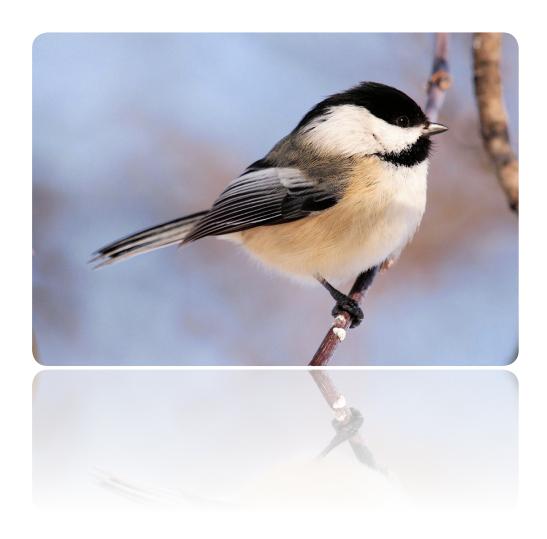
FY Ended June 30		ing Fair et Value		ing Fair et Value	<u>Actual</u> <u>Return</u>	<u>Benchmark</u> <u>Return</u>	<u>Performance</u>
2018	\$ 1	10.5	\$	120.4	8.9%	8.6%	0.3%
2017	\$	97.9	\$	110.5	12.8%	13.0%	-0.2%
2016	\$	95.2	\$	97.9	0.9%	1.0%	-0.1%
2015	\$	92.2	\$	95.2	2.6%	2.7%	-0.1%
2014	\$	78.3	\$	92.2	18.6%	18.3%	0.3%
2013	\$	68.1	\$	78.3	13.4%	13.1%	0.3%
2012	\$	66.4	\$	68.1	0.6%	0.5%	0.1%
2011	\$	58.0	\$	66.4	24.5%	24.4%	0.1%
2010	\$	50.2	\$	58.0	15.1%	15.1%	0.1%
2009	\$	53.0	\$	50.2	-18.8%	-19.0%	0.2%
			3 yrs e	nded 2018	7.4%	7.4%	0.0%
			5 yrs e	nded 2018	8.6%	8.5%	0.0%
			10 yrs e	ended 2018	7.2%	7.1%	0.1%

In fiscal year 2009, the Group Life Insurance assets were separated from the defined benefit plan assets while maintaining the same type of investment strategy. Up until this change, beginning in November 2005, the assets had been combined with those of the other plans in the general investment portfolio. Prior to November 2005, the assets had been invested in either a medium term, investment grade fixed income portfolio or similar commingled funds. While the assets were invested in a mutual fund, they were not available for the System's own securities lending program. Any securities lending undertaken by the mutual fund is not covered in this report, although any results are reflected in the total return or gain/loss figures.

Over the ten-year period ended June 30, 2018, the actual return on the portfolio was essentially equivalent to the return of the performance benchmark.

The fees paid by the portfolio are consistent with those detailed in the fees and expenses tables of the previous section. For the period of time the portfolio was invested in a mutual fund, fees were consistent with other holders of the institutional class of shares, as detailed in the fund's prospectus.

# ACTUARIAL SECTION



Maine State Bird: Chickadee



Classic Values, Innovative Advice

October 29, 2018

Board of Trustees Maine Public Employees Retirement System P.O. Box 349 Augusta, Maine 04332-0349

Dear Members of the Board:

At your request, we have conducted our annual actuarial valuation for each of the funded pension programs administered by the Maine Public Employees Retirement System (MainePERS) as of June 30, 2018. The purpose of this report is to present the annual actuarial valuation results for the various Programs. This report is for the use of the MainePERS Board of Trustees and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of this report is not an intended user and is considered a third party. This valuation report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

### **Funding Objective**

The funding objective for the Programs administered by MainePERS is to establish contribution rates that, over time, will remain level as a percentage of payroll while fully funding the Programs. In order to achieve this, we develop contribution rates that will provide for the current costs (i.e., normal cost expressed as a level percentage of payroll) plus a level percentage of payroll amortization of the unfunded liability over a specified period.

To our knowledge, the plan sponsors have consistently funded the full amounts required based on the actuarial valuations and specific statutory provisions.

### **Assumptions and Methods**

The actuarial assumptions and methods used in these valuations have been recommended by the actuary and adopted by the Board of Trustees based on the actuary's most recent review of each Program's experience.

We believe that all the costs, liabilities, rates of interest, and other factors for MainePERS have been determined on the basis of actuarial assumptions and methods that are individually reasonable (taking into account the experience of the Programs administered by MainePERS and reasonable expectations) and that, in the aggregate, offer our best estimate of anticipated experience affecting the Programs. Nevertheless, the emerging costs rely on future plan experience conforming to the underlying assumptions and methods as outlined in this report. To the extent that the actual experience of the Programs deviates from the underlying assumptions and methods, or there are any changes in plan provisions or applicable law, the results will vary accordingly.

The calculations in the following exhibits have been made on a basis consistent with our understanding of MainePERS's funding requirements and goals. The Group Life Insurance Program (GLI) numbers disclosed in the Financial Section were produced in accordance with our understanding of the requirements of Governmental Accounting Standards Board (GASB) Statement No. 74. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

### **Reliance on Others**

In preparing our report, we relied on information, some oral and some written, supplied by MainePERS. This information includes, but is not limited to, the plan provisions, membership data, and financial information. We performed a limited review of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23 and have found no material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable. Such a review was beyond the scope of our assignment.

www.cheiron.us 1.877.CHEIRON (243.4766)

### **Determination of Discount Rate**

We have not performed formal cash flow projections as described under Paragraph 41 of GASB Statement No. 67. However, Paragraph 43 allows for alternative methods to confirm the sufficiency of the fiduciary net position if the evaluations "can be made with sufficient reliability without a separate projection of cash flows into and out of the pension plan..." In our professional judgment, adherence to the actuarial funding policy described above and detailed further in the individual valuation reports will result in the pension programs having projected fiduciary net positions being greater than or equal to the benefit payments projected for each future period for each program within the System.

### **Supporting Schedules**

Cheiron is responsible for the following schedules included within the Financial and Actuarial Sections of the MainePERS Comprehensive Annual Financial Report:

- Schedule of Active Member Valuation Data
- Schedule of Benefit Recipients Valuation Data
- Schedule of Retirees and Beneficiaries Added to and Removed from the Rolls
- Schedule of Change in Net Pension Liability
- Sensitivity of Net Pension Liability to Changes in Discount Rate
- Analysis of Financial Experience
- Solvency Test
- Schedule of Changes in Net OPEB Liability

### **Certification**

We believe that the pension Programs administered by MainePERS are adequately and appropriately financed including contributions that are determined and funded on a level cost as a percentage of payroll basis using reasonable actuarial methods and assumptions.

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, including the use of assumptions and methods for funding purposes that comply with the Actuarial Standards of Practice. 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.

Sincerely,

Cheiron

Gene Kalwarski, FSA, EA Principal Consulting Actuary

cc: Elizabeth Wiley, FSA

Fiona E. Liston, FSA, EA Principal Consulting Actuary

Kina Ehista



### SECTION I DEMOGRAPHIC INFORMATION

	Sche	dule of Active Member	Valuation Data	
Valuation Date June 30,	Number of Active Members	Annual Payroll of Active Membe		Percentage Increase in Average Pay
	State Em	ployee and Teacher Re	etirement Program	
2018 2017 2016 2015 2014 2013 2012 2011 2010	39,843 39,836 39,942 40,016 39,669 41,809 39,360 38,759 39,884	\$ 1,891,366,3 1,837,608,8 1,792,004,4 1,745,075,0 1,702,310,3 1,662,390,5 1,718,449,1 1,643,389,7	466     46,129       47     44,865       43,609     42,913       457     39,762       472     43,660       435     42,400	2.91% 2.82% 2.88% 1.62% 7.92% (8.93)% 2.97% 1.13% 1.65%
2009	40,486	1,672,252,8 1,669,885,7		5.83%
	Consolid	ated Plan for Participat	ing Local Districts	
2018 2017 2016 2015 2014 2013 2012 2011 2010 2009	11,416 11,195 11,019 10,870 10,848 11,112 10,772 10,614 10,331 9,719	\$ 562,952,6 531,168,5 505,798,1 490,974,0 460,029,6 458,424,7 474,828,2 435,012,9 395,747,6 380,541,1	94 47,447 33 45,902 92 45,168 337 42,407 64 41,255 662 44,080 40 40,985 63 38,307	3.93% 3.37% 1.63% 6.51% 2.79% (6.41)% 7.55% 6.99% (2.16)% 3.80%
	Non-Co	nsolidated Participatin	g Local Districts	
2018 2017 2016 2015 2014 2013 2012 2011 2010 2009	16 19 21 23 24 28 28 31 43	\$ 922,0 1,072,5 1,123,2 1,207,7 1,213,5 1,428,5 1,415,3 1,561,0 1,758,9 1,974,1	661     56,451       118     53,487       196     52,513       114     50,563       184     51,035       105     50,547       153     50,357       109     40,905	2.09% 5.54% 1.85% 3.86% (0.92)% 0.97% 0.38% 23.11% (10.90)% 9.86%
		Judicial Retirement F	Program	
2018 2017 2016 2015 2014 2013 2012 2011 2010 2009	62 63 62 56 60 60 59 59 59 59	\$ 8,119,3 7,770,5 7,184,4 6,851,6 6,688,1 6,742,4 6,790,2 6,790,2 6,956,3 6,718,4	123 123,342 100 115,877 112 122,350 159 111,469 144 112,374 174 115,089 133 115,089 164 117,904	6.17% 6.44% (5.29)% 9.76% (0.81)% (2.36)% 0.00% (2.39)% 0.03% 7.63%
		_egislative Retirement	Program*	
2018 2017 2016 2015 2014 2013 2012 2011 2010 2009	185 185 177 180 181 182 175 173 170	\$ 2,710,6 2,651,1 2,590,0 2,534,5 2,517,4 2,534,7 2,424,4 2,395,6 2,384,0 2,326,7	.95     14,331       .011     14,633       .48     14,081       .31     13,908       .40     13,927       .80     13,854       .94     13,848       .83     14,024	2.24% (2.06)% 3.92% 1.24% (0.14)% 0.53% 0.04% (1.25)% 3.67% 2.02%

<sup>\*</sup>Legislative salaries in even-numbered valuation years have been increased to approximate a full session amount.

### SECTION I DEMOGRAPHIC INFORMATION

(continued)

	Schedul	e of Benefit Recipients Valua	ation Data	
Valuation Date June 30,	Total Number of Benefit Recipients at Year End	Annual Payments to Benefit Recipients	Average Annual Benefit	Percentage Increase in Average Benefit
	State Emp	oloyee and Teacher Retireme	nt Program	
2018 2017 2016 2015 2014 2013	35,601 34,870 34,181 33,260 32,391 31,624	\$ 792,094,655 761,472,435 728,131,830 691,848,265 658,595,271 637,482,081	\$ 22,249 21,837 21,302 20,801 20,333 20,158	1.89% 2.51% 2.41% 2.30% 0.87% 0.03%
2012 2011 2010 2009	30,485 28,900 28,248 27,544	614,303,923 569,141,838 547,042,219 525,718,969 ted Plan for Participating Loc	20,151 19,693 19,366 19,087	2.33% 1.69% 1.46% 5.44%
2018 2017 2016 2015 2014 2013 2012 2011 2010 2009	9,256 9,006 8,847 8,581 8,333 8,122 7,520 7,409 7,172 7,021	\$ 149,732,113 141,460,984 135,629,476 130,647,324 123,149,154 116,539,396 110,230,682 102,681,024 96,787,246 93,249,060	\$ 16,177 15,707 15,331 15,225 14,778 14,349 14,658 13,859 13,495 13,281	2.99% 2.45% 0.70% 3.02% 2.99% (2.11)% 5.77% 2.70% 1.61% 5.86%
	Non-Cor	solidated Participating Loca	l Districts	
2018 2017 2016 2015 2014 2013 2012 2011 2010 2009	170 174 172 176 191 196 199 201 198 214	\$ 2,698,875 2,694,654 2,667,586 2,666,644 2,712,331 2,605,703 2,631,584 2,485,447 2,445,239 2,355,639	\$ 15,876 15,487 15,509 15,151 14,201 13,294 13,224 12,365 12,350 11,008	2.51% (0.14)% 2.36% 6.69% 6.82% 0.53% 6.95% 0.01% 12.19% 5.24%
		Judicial Retirement Progran	n	
2018 2017 2016 2015 2014 2013 2012 2011 2010 2009	75 75 74 71 67 65 63 62 56	\$ 3,915,645 3,684,373 3,597,415 3,401,651 3,250,749 3,258,916 3,129,136 3,099,334 2,794,145 2,603,792	\$ 52,209 49,125 48,614 47,911 48,519 50,137 49,669 49,989 49,895 49,128	6.28% 1.05% 1.47% (1.25)% (3.23)% 0.94% (0.64)% 0.19% 1.56% (1.13)%
	L	egislative Retirement Progra	ım	
2018 2017 2016 2015 2014 2013 2012 2011 2010 2009	185 185 174 170 153 155 141 145 131	\$ 391,070 374,529 348,592 327,469 284,588 281,433 264,716 268,980 239,823 229,960	\$ 2,114 2,024 2,003 1,926 1,860 1,816 1,877 1,855 1,831 1,769	4.45% 1.05% 4.00% 3.55% 2.42% (3.25)% 1.19% 1.31% 3.50% 3.33%

### SECTION I DEMOGRAPHIC INFORMATION

(concluded)

	Sc	hedule of Retirees and	Beneficiar	ies Added to and Ren	noved from the Rolls		
Voor Ended	A	dded to Rolls	Remo	oved from Rolls	On Rolls at Year End		
Year Ended June 30,	No.	Annual Allowance	No.	Annual Allowance	No.	Annual Allow	ance
		State Empl	oyee and To	eacher Retirement Pr	ogram		
2018	1,781	\$ 49,254,819	1,050	\$ 18,632,598	35,601	\$ 792,094	655
2017	1,641	49,809,275	952	16,468,670	34,870	761,472	
2016	1,840	52,295,379	919	16,011,814	34,181	728,131	
2015	1,834	49,547,474	965	16,294,480	33,260	691,848	
2014	1,668	36,572,188	901	15,458,998	32,391	658,595	
2013	1,995	37,073,840	856	13,895,682	31,624	637,482	,081
2012	2,402	58,170,235	817	13,008,150	30,485	614,303	,923
2011	1,515	35,608,087	863	13,508,468	28,900	569,141	
2010	1,659	36,147,606	955	14,824,356	28,248	547,042	
2009	1,645	53,170,359	912	12,981,213	27,544	525,718	,969
		Consolidate	d Plan for I	Participating Local Di	stricts*		
2018	602	\$ 12,950,872	352	\$ 4,679,743	9,256	\$ 149,732	
2017	521	10,098,997	362	4,267,489	9,006	141,460	
2016	543	8,643,493	277	3,661,341	8,847	135,629	
2015	620	11,937,098	372	4,438,928	8,581	130,647	
2014	516	9,816,061	305	3,206,304	8,333	123,149	,154
		Non-Cons	olidated Pa	rticipating Local Dist	ricts*		
2018	4	\$ 72,079	8	\$ 67,858	170	\$ 2,698,8	75
2017	6	106,640	4	79,572	174	2,694,6	54
2016	2	64,941	6	63,999	172	2,667,5	86
2015	3	92,920	18	138,607	176	2,666,6	44
2014	6	162,335	11	55,706	191	2,712,3	31
		PLDs (Cons	olidated an	d Non-Consolidated	Plans)*		
2013	881	\$ 9,563,286	300	\$ 3,280,453	8,318	\$ 119,145	,099
2012	425	10,710,058	316	3,014,263	7,719	112,862	
2011	516	8,796,407	276	2,862,417	7,610	105,166	
2010	422	6,462,161	287	2,834,379	7,370	99,232	
2009	326	8,821,806	287	2,912,694	7,235	95,604	,699
		j	Judicial Ret	irement Program			
2018	5	\$ 460,761	5	\$ 229,489	75	\$ 3,915	,645
2017	1	86,958	0	0	75	3,684	,
2016	7	426,643	4	230,879	74	3,597	•
2015	6	312,332	2	161,430	71	3,401	
2014	6	254,034	4	262,201	67	3,250	
2013	3	148,384	1	18,604	65	3,258	
2012	3	142,235	2	112,433	63	3,129	
2011 2010	6 3	305,189 190,353	0	0	62 56	3,099	
2010	5	266,650	2	147,444	53	2,794 2,603	
2000		<u> </u>		· · · · · · · · · · · · · · · · · · ·	1 33	2,300	,,,,,,
	ı	1		etirement Program	T		
2018	8	\$ 30,692	8	\$ 14,151	185	1	,070
2017	20	48,314	9	22,377	185		,529
2016	12	38,391	8	17,268	174		,592
2015	25	53,264	8 7	10,383	170		,469
2014 2013	5 18	10,934 24,752	4	7,779 8,035	153 155		,588 ,433
2013	2	9,025	6	13,289	141		,716
2012	18	36,695	4	7,538	145		,980
2010	5	15,259	4	5,396	131		,823
2009	18	34,185	8	9,642	130		,960
					1		

<sup>\*</sup>This schedule was developed in aggregate for the Participating Local Districts prior to 2014. Beginning with 2014, it was developed split between the Consolidated Plan and the Non-Consolidated PLDs.

# SECTION II ACCOUNTING INFORMATION

(continued)

		Schedule of	Schedule of Change in Net Pension Liability as of June 30, 2018	sion Liabili	ity				
Total Pension Liability	Sı Reti	State Employee & Teacher Retirement Program	Consolidated Plan for PLDs		Non- Consolidated PLDs	Œ	Judicial Retirement Program	Re P	Legislative Retirement Program
Service Cost Interest	↔	215,826,380	\$ 76,190,510 207,492,396	,510 \$	134,755 2,529,450	₩	1,487,383	↔	282,199
Change in benefit terms		0	(106,123,366)	(396)	0		0		0
Difference between expected and actual experience		34,151,279	1,285,304	,304	(572,913)		468,895		(90,816)
Change in assumptions		191,998,939	46,439,540	,540	660,646		208'269		99,915
Benefit payments, including refunds		(810,211,176)	(152,087,885)	(588)	(2,788,424)		(3,804,709)		(459,746)
Net change in Total Pension Liability	₩	546,301,333	\$ 73,196,499	3,499 \$	(36,486)	₩	3,291,780	↔	396,640
Total Pension Liability – beginning of year	↔	13,484,886,512	\$ 3,016,660,721	,721 \$	38,028,287		\$ 65,000,144	₩	8,163,310
Total Pension Liability – end of year	↔	14,031,187,845	\$ 3,089,857,220	,220 \$	37,991,801		\$68,291,924	↔	8,559,950
Plan Fiduciary Net Position									
Contributions – Employer	↔	340,508,159	\$ 56,092,662	3,662 \$	594,730	↔	1,179,328	↔	0
Contributions – Member		140,844,880	48,050,203	,203	68,609		603,875		153,881
Transfers		(5,355)	(386)	(386,621)	0		0		0
Net Investment Income		1,077,827,553	259,699,518	,518	3,477,464		6,606,904		1,176,463
Benefit payments, including refunds		(810,211,176)	(152,087,885)	(882)	(2,788,424)		(3,804,709)		(459,746)
Administrative Expenses		(10,076,242)	(2,411,666)	(999)	(33,056)		(61,708)		(11,002)
Net Change in Plan Fiduciary Net Position	↔	738,887,819	\$ 208,956,211	5,211 \$	1,319,323	↔	4,523,690	↔	859,596
Plan Fiduciary Net Position – beginning of year	€	10,893,291,864	\$ 2,607,223,644	3,644 \$	35,735,739	₩	66,710,150	↔	11,896,225
Plan Fiduciary Net Position – end of year	↔	11,632,179,683	\$ 2,816,179,855	\$ 258'6	37,056,061	↔	71,233,840	↔	12,755,821
Net Pension Liability/(Asset) – end of year	↔	2,399,008,162	\$ 273,677,365	365 \$	935,740	↔	(2,941,916)	↔	(4,195,871)

### **SECTION II ACCOUNTING INFORMATION**

	Sensitiv	Sensitivity of Net Pension Liability to Changes in Discount Rate as of June 30, 2018	Liabil of June	sion Liability to Changes as of June 30, 2018	in Discou	unt Rate				
	State & Retiren	State Employee & Teacher Retirement Program	Cons	Consolidated Plan for PLDs	Non- Co P	Non- Consolidated PLDs	Jud Retir Pro	Judicial Retirement Program	Leg Ret Pr	Legislative Retirement Program
Discount Rate										
1% Decrease		5.75%		5.75%		2.75%		5.75%		5.75%
Current Discount Rate		6.75%		6.75%		6.75%		6.75%		6.75%
1% Increase		7.75%		7.75%		7.75%		7.75%		7.75%
Net Pension Liability										
1% Decrease	↔	4,118,391,649	↔	645,021,221	↔	4,734,920	↔	3,241,765	₩	(3,338,833)
Current Discount Rate		2,399,008,162		273,677,365		935,740	Ü	(2,941,916)		(4,195,871)
1% Increase		963,017,602		(73,427,244)		(2,518,060)	Ŭ	(8,316,508)		(4,939,812)

### SECTION II ACCOUNTING INFORMATION

(continued)

The table below is a gain/loss analysis of the changes in the actuarial liability, reflecting variances between actual experience and assumed experience for different kinds of risk as specified in the GFOA GAAFR.

Resulting fro	Gair m Differ	Analysis of Financial Experience Gain and Loss in Accrued Liability During Year Resulting from Differences Between Assumed Experience and Actual Experience For Year Ended June 30, 2018	inancia crued L Assume ded Ju	Il Experience Liability During ed Experience en 30, 2018	Year and Actua	l Experience					·
Type of Activity	Stat & Retire	State Employee & Teacher Retirement Program	Cor	Consolidated Plan for PLDs	Non- Cor PL	Non- Consolidated PLDs	R P	Judicial Retirement Program		Legislative Retirement Program	
Investment Income	↔	94,329,730	₩	25,142,719	₩	382,430	<del>6)</del>	657,144	↔	112,650	
Combined Liability Experience		(34,151,279)		(1,285,304)		242,589		(468,895)		90,816	
Gain (or Loss) During Year from Financial Experience	↔	60,178,451	↔	23,857,415	₩	625,019	↔	188,249	€	203,466	
Non-Recurring Items		(191,998,939)		59,683,826		(330,323)		(208'269)		(99,915)	
Composite Gain (or Loss) During Year	49	(131,820,488)	<del>6</del>	83,541,241	÷	294,696	s	(209,558)	s	103,551	

### **SECTION II** ACCOUNTING INFORMATION

(continued)

			(continueu)					
			Solvency Tes Aggregate Actuarial Lia					
Valuation Date June 30,	(1) Active Member Contributions	(2) Retirees, Vested Terms, Beneficiaries	(3) Active Members (Employer Financed Portion)	Reported Assets*		Actuarial Liabilition oy Reported Asset (1) (2) (3)		
State Employee and Teacher Retirement Program								
2018	\$ 2,453,797,249	\$ 9,030,789,541	\$ 2,546,601,055	\$ 11.419.986.651	100%	99%	0%	
2017	2,402,112,525	8,727,549,999	2,355,223,988	10,904,082,221	100%	97%	0%	
2016	2,359,818,665	8,399,121,582	2,311,014,701	10,512,524,178	100%	97%	0%	
2015	2,339,138,044	7,831,348,903	2,445,800,107	10,375,552,498	100%	100%	8%	
2014	2,315,075,905	7,572,038,284	2,433,044,594	10,017,512,006	100%	100%	5%	
2013	2,290,505,939	7,181,259,077	2,358,884,866	9,177,749,627	100%	96%	0%	
2012	2,271,164,594	6,656,860,191	2,625,281,496	8,880,730,120	100%	99%	0%	
2011	2,229,984,967	6,453,384,730	2,598,295,489	8,736,885,121	100%	100%	2%	
2010	2,117,903,830	6,856,828,427	3,642,411,748	8,313,459,810	100%	90%	0%	
2009	2,002,784,767	6,622,143,609	3,696,290,956	8,325,951,236	100%	95%	0%	
Consolidated Plan for Participating Local Districts								
2018	\$ 494,411,535	\$ 1,818,566,082	\$ 776,879,603	\$ 2,764,807,391	100%	100%	58%	
2018	\$ 494,411,535 472,362,260	\$ 1,818,566,082 1,721,058,286	\$ 776,879,603 823,240,175	2,764,807,391	100%	100%	58% 51%	
2017	472,362,260 452,446,198	1,721,058,286	823,240,175 782,312,774	2,609,806,231	100%	100%	51% 49%	
2015	438,925,747	1,543,532,803	738,477,459		100%	100%	61%	
2015				2,433,186,149	100%		68%	
	423,097,001	1,462,031,828	724,529,016	2,379,733,634		100%		
2013	412,347,408	1,378,065,748	675,521,588	2,179,961,872	100%	100%	58%	
2012	398,895,449	1,262,186,227	707,745,483	2,103,481,277	100%	100%	63%	
2011	379,478,840	1,175,482,545	676,024,931	2,084,982,632	100%	100%	78%	
2010 2009	347,801,024	1,083,097,662	654,598,374 641,162,528	2,011,019,138	100% 100%	100% 100%	89% 107%	
2009	319,531,110	1,039,566,071	041,102,526	2,046,361,132	100%	100%	10790	
Non-Consolidated Participating Local Districts								
2018	\$ 4,461,906	\$ 30,747,638	\$ 2,782,257	\$ 36,380,088	100%	100%	42%	
2017	4,468,152	30,140,204	3,419,931	35,772,138	100%	100%	34%	
2016	4,494,490	30,215,191	3,337,304	35,516,058	100%	100%	24%	
2015	4,640,093	29,733,833	4,144,814	35,942,796	100%	100%	38%	
2014	4,667,251	31,696,569	3,382,954	35,485,488	100%	97%	0%	
2013	4,764,800	29,539,283	4,180,808	33,454,845	100%	97%	0%	
2012	4,757,033	27,810,149	4,313,899	33,172,070	100%	100%	14%	
2011	4,815,718	26,832,938	4,939,550	34,483,299	100%	100%	57%	
2010	4,695,405	27,353,693	5,287,301	34,317,862	100%	100%	43%	
2009	5,096,286	25,975,475	1,405,938	37,349,924	100%	100%	447%	
Judicial Bot	irement Program							
		ф 26.0E4.246	ф 20.2E7.61E	Ф 60 024 400	1000/	1000/	1000/	
2018	\$ 11,180,063	\$ 36,854,246	\$ 20,257,615	\$ 69,934,400 66,776,220	100% 100%	100% 100%	108%	
2017	10,933,820	33,422,798	20,643,526	66,776,230			109%	
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 55,410,017	100%	100%	90%	
2014	9,466,378	28,785,537	16,308,727	55,419,017 51,055,251	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 2009	8,510,723 7,980,202	26,915,670 25,570,008	17,723,306 16,993,110	47,677,635 48,478,344	100% 100%	100% 100%	69% 88%	
Legislative Retirement Program								
2018	\$ 2,591,378	\$ 6,277,075	\$ (308,503)	\$ 12,523,131	100%	100%	1,185%	
2017	2,516,620	6,172,223	(525,533)	11,908,009	100%	100%	613%	
2016	2,505,647	5,795,917	(622,106)	11,405,769	100%	100%	499%	
2015	2,444,638	5,581,571	(467,916)	11.219.880	100%	100%	683%	
2014	2,464,847	5,073,388	(33,042)	10,775,701	100%	100%	9,798%	
2013	2,363,217	4,965,686	(456,289)	9,771,955	100%	100%	535%	
2012	2.321.819	3,895,976	25,844	9,322,419	100%	100%	12,013%	
2011	2,228,233	4,002,993	(506,033)	9,040,180	100%	100%	555%	
2010	2,099,683	3,680,940	292,741	8,634,635	100%	100%	975%	
2009	2,005,895	3,636,651	(142,737)	8,717,885	100%	100%	2,155%	
_000	2,000,000	3,000,001	(===,101)	0,7 17,000	_0070	10070	_,10070	

<sup>\*</sup>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 Program.

# SECTION II ACCOUNTING INFORMATION

(concluded)

The Maine Public Employees Retirement System covers Postretirement Group Life Insurance obligations for the participants of the State Employee and Teacher Retirement Program, the Judicial Retirement Program, and the Legislative Retirement Program, which we collectively call the State Sponsored Plans and the Participating Local Districts Plans (PLDs).

Schedule of Changes in Net OPEB Liability as of June 30, 2018									
	Pla	State Sponsored ans Retiree Group Life Insurance		PLD Retiree Group Life Insurance					
Total OPEB Liability									
Service cost (BOY)	\$	2,122,079	\$	442,863					
Interest (includes interest on service cost)		12,531,082		1,706,200					
Change in benefit terms		0		C					
Difference between expected and actual experience		1,957,220		2,045,678					
Change in assumptions		3,199,639		1,554,074					
Benefit payments, including refunds		(7,269,810)		(1,530,346)					
Net change in total OPEB liability		12,540,210	\$	4,218,469					
Total OPEB Liability - beginning of year	\$	183,722,693	\$	31,804,436					
Total OPEB Liability - end of year	\$	196,262,903	\$	36,022,905					
Plan Fiduciary Net Position									
Contributions - Employer	\$	7,638,453	\$	\$1,069,640					
Contributions - Member		0		C					
Net Investment Income		7,804,839		1,333,324					
Benefit payments, including refunds		(7,269,810)		(1,530,346)					
Administrative Expense		(769,717)		(133,624)					
Net Change in Plan Fiduciary Net Position		7,403,765	\$	738,994					
Plan Fiduciary Net Position - beginning of year	\$	86,882,864	\$	15,082,934					
Plan Fiduciary Net Position - end of year	\$	94,286,629	\$	15,821,928					
Net OPEB Liability - end of year	\$	101,976,274	\$	20,200,977					

# STATE EMPLOYEE AND TEACHER PROGRAM SUMMARY OF PROGRAM AND PLAN PROVISIONS

### **State Employee and Teacher Program**

### 1. Membership

Membership is a condition of employment for state employees and teachers, and optional for elected and appointed officials.

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

### 2. Member Contributions

Except as otherwise described below, members are required to contribute 7.65% of earnable compensation. Member contributions earn 2.4% annual interest.

### Contribution Requirements for Special State Employee Groups

State police and inland fisheries and wildlife officers employed before September 1, 1984: required to contribute 8.65% of earnable compensation for 20 years of service and 7.65% thereafter.

Forest rangers employed before September 1, 1984: required to contribute 8.65% of earnable compensation until eligible for retirement and 7.65% thereafter.

1998 Special Plan employees, which includes state prison employees, airplane pilots, forest rangers, defense, veterans and emergency management firefighters employed at Bangor International Airport, corrections employees, Baxter State Park Authority rangers, fire marshals, investigators and inspectors, oil and hazardous materials emergency response workers, and capitol security officers: required to contribute 8.65% of earnable compensation for 25 years and 7.65% thereafter.

State police employed on or after September 16, 1984 and special agent investigators hired before June 21, 1982: required to contribute 8.65% of earnable compensation for 25 years and 7.65% thereafter.

Inland fisheries and wildlife officers and marine resources officers employed on or after September 1, 1984: required to contribute 8.65% of earnable compensation for 25 years and 7.65% thereafter.

### 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 compensation paid on or after July 1, 1993, increases in earnable compensation of greater than 5% per year or greater than 10% over the highest three years are not included in calculating average final compensation unless the employer pays the cost of including such compensation. Earnable compensation does not include sick and vacation pay for those members who had less than ten years of service at July 1, 1993. For members for whom sick and vacation pay is includable in earnable compensation, these payments are included in applying the caps described above.

### 4. Creditable Service

Creditable service includes service while a member, certain service prior to the establishment of the Program, purchased military service credit, other purchased service credit, and service while receiving disability benefits under the Program.

### 5. Service Retirement Benefits

### A. Regular Plan (State Employees and Teachers)

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

Normal Retirement Age: 60

Eligibility for Members in Active Service and Inactive Members: 25 years of creditable service.

Eligibility Alternative for Members in Active Service: At least one year of creditable service immediately before retirement and at least normal retirement age.

### STATE EMPLOYEE AND TEACHER PROGRAM SUMMARY OF PROGRAM AND PLAN PROVISIONS

(continued)

Eligibility for Members not in Active Service at Retirement and not in Active Service on or after October 1, 1999: At least ten years of creditable service and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement, but in Active Service on or after October 1, 1999: At least five years of creditable service and at least normal retirement age.

Benefit: 1/50 of average final compensation multiplied by years of creditable service and up to 25 years of prior service, reduced by the following approximate percentages for each year retirement age is less than age 60.

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

Form of Payment: Life annuity.

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

Normal Retirement Age: 62

Eligibility for Members in Active Service and Inactive Members: 25 years of creditable service.

Eligibility Alternative for Members in Active Service: At least one year of creditable service immediately before retirement age and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement and not in Active Service on or after October 1, 1999: At least ten years of creditable service and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement, but in Active Service on or after October 1, 1999: At least five years of creditable service and at least normal retirement age.

Benefit: 1/50 of average final compensation multiplied by years of membership service and up to 25 years of prior service, reduced by 6% for each year retirement age is less than age 62.

Form of Payment: Life annuity.

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

Normal Retirement Age: 65

Eligibility for Members in Active Service and Inactive Members: 25 years of creditable service.

Eligibility Alternative for Members in Active Service: At least one year of creditable service immediately before retirement age and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement and not in Active Service on or after October 1, 1999: At least ten years of creditable service and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement, but in Active Service on or after October 1, 1999: At least five years of creditable service and at least normal retirement age.

# STATE EMPLOYEE AND TEACHER PROGRAM SUMMARY OF PROGRAM AND PLAN PROVISIONS

(continued)

Benefit: 1/50 of average final compensation multiplied by years of membership service and up to 25 years of prior service, reduced by 6% for each year retirement age is less than age 65.

Form of Payment: Life annuity.

### B. Special Plans (State Employees)

 State Police Employed Before September 16, 1984 and Inland Fisheries and Wildlife Officers Employed Before September 1, 1984

Eligibility: 20 years of creditable service in named positions.

Benefit: One-half of average final compensation plus 2% for each year of service in excess of 20. If greater, the pro-rated portion of the benefit for service before July 1, 1976 is based on annual pay instead of average final pay.

Form of Payment: 50% joint and survivor annuity or life annuity.

Forest Rangers Employed Before September 1, 1984

Eligibility: Age 50 with 25 years of creditable service as a forest ranger.

Benefit: One-half of average final compensation plus 2% for each year of service earned after qualification for retirement. If greater, the pro-rated portion of the benefit for service before July 1, 1976 is based on annual pay instead of average final pay.

Form of Payment: Life annuity.

### iii. 1998 Special Plan

1998 Entrants: State prison employees, airline pilots, forest rangers and liquor inspectors, employed after August 31, 1984; defense, veterans, and emergency management firefighters employed on and after July 1, 1998.

2000 Entrants: Baxter State Park Authority rangers, correctional employees and state fire marshals employed on or after January 1, 2000.

2002 Entrants: Capitol Police and oil and hazardous materials emergency response workers.

Eligibility: Ten years of creditable service under the 1998 Special Plan in one or a combination of the covered capacities and the attainment of age 55 - OR - 25 years of creditable service in one or a combination of the covered capacities.

Benefit: For service prior to coverage in the 1998 Special Plan, 1/50 of average final compensation multiplied by years of service reduced for retirement before age 60, 62, or 65 (as determined by the applicable Regular Plan provisions described in 5.A.), except oil and hazardous materials emergency response workers, and certain prison employee, and Capitol Police benefits are reduced for retirement before age 55.

-PLUS-

For service under the 1998 Special Plan, 1/50 of average final compensation multiplied by years of service reduced for retirement before age 55.

Form of Payment: Life annuity.

# STATE EMPLOYEE AND TEACHER PROGRAM SUMMARY OF PROGRAM AND PLAN PROVISIONS

(continued)

#### iv. 25 & Out Plan

1998 Entrants: State police employed on or after September 16, 1984 and special agent investigators hired before June 21, 1982.

2002 Entrants: Inland fisheries and wildlife officers and marine resources officers employed on and after August 31, 1984.

Eligibility: 25 years of creditable service in named positions.

Benefit: 1/50 of average final compensation multiplied by years of service.

Form of Payment: Life annuity.

Members in Special Plans who fail to qualify for Special Plan benefits can receive Regular Plan benefits when and as eligible and qualified.

v. Minimum Service Retirement Benefit

\$100 per month

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

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

Benefit: 66%% 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 ten years following normal retirement age or on the date that 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 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 66%% of average final compensation or ten years after the normal retirement date, 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

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

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

# STATE EMPLOYEE AND TEACHER PROGRAM SUMMARY OF PROGRAM AND PLAN PROVISIONS

(continued)

## 8. Pre-Retirement Ordinary Death Benefits

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

Benefit: Designated beneficiary, spouse, children, 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 children, 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, children, older parents, or estate.

#### 9. Pre-Retirement Accidental Death Benefits

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

Benefit:

- If the member leaves no dependent children, two-thirds of the member's average final compensation to the surviving spouse until death.
- If the member is survived by a spouse who has the care of dependent children 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 children. 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 children, the surviving spouse and dependent children shall share equally an annual sum equal to the member's average final compensation. When there are no longer any dependent children, the surviving spouse shall receive two-thirds of the member's average final compensation until death.
- If the member leaves no spouse, the dependent children 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 five years of creditable 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 five 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 that is not in excess of a COLA cap whose value grows annually with the same adjustment as the COLA

# STATE EMPLOYEE AND TEACHER PROGRAM SUMMARY OF PROGRAM AND PLAN PROVISIONS

(concluded)

(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 2017 - \$21,474.70 2018 - \$21,818.30

Members who did not have ten years of service on July 1, 1993 will begin receiving cost-of-living adjustments at the later 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.

#### 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\*.

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.

This Appendix B is intended to be a brief summary of provisions. In the event of a dispute, applicable statutes and administrative policy supersede this report description.

# **Actuarial Assumptions**

### 1. Annual Rate of Investment Return

State Employees	6.75%
Teachers	6.75%

Rate is net of both administrative and investment expense.

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

State Employees	2.20%
Teachers	2.20%

### 3. Annual Rate of Individual Salary Increase (% at Selected Years of Service)

Service	State Employees	Teachers
0	8.75%	14.50%
5	5.00%	5.75
10	3.75%	4.75
15	3.20%	4.00
20	2.95%	2.75
25 and over	2.75%	2.75

The above rates include a 2.75% across-the-board increase at each year of service.

# Sample Rates of Termination (% at Selected Years of Service)

Service	State Employees and Teachers
0	33.50%
5	10.50
10	5.95
15	4.25
20	4.00
25	4.00

Non-vested members are assumed to take a refund of contributions with interest. Once vested, the member is assumed to elect the greater of the deferred vested benefit or a refund of member contributions with interest based on present value at time of termination.

(continued)

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

(Showing values in 2018)				
	<u>State</u>	<u>Employees</u>	<u>Te</u>	achers
Age	Male	Female	Male	Female
50	41	32	39	26
55	58	43	55	35
60	78	62	74	51
65	111	95	106	79
70	172	153	163	126
75	280	251	266	207
80	471	424	448	350
85	822	753	783	621
90	1,453	1,351	1,383	1,115
95	2,301	2,230	2,191	1,840

Rates for State Employees 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. Proposed rates for Teachers are based on 99% of the RP-2014 Total Dataset Healthy Annuitant Mortality Table for both males and females, using the RP-2014 Total Dataset Employee Mortality Table for ages prior to the start of the Healthy Annuitant Mortality Table, respectively, both projected 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.

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

(Showing values in 2018)				
	<u>State</u>	<u>Employees</u>	<u>Te</u>	<u>achers</u>
Age	Male	Female	Male	Female
20	4	2	4	1
25	4	2	4	2
30	4	3	4	2
35	5	3	5	3
40	6	5	6	4
45	9	8	9	6
50	17	13	16	10
55	28	20	27	16
60	47	29	45	24
65	83	44	79	36

<sup>\*</sup> For State Regular and Teachers 5% of deaths assumed to arise out of and in the course of employment; for State Special 20% of deaths are assumed to arise out of and in the course of employment.

Rates for State Employees 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. Proposed rates for Teachers are based on 99% of the RP-2014 Total Dataset Healthy Annuitant Mortality Table for both males and females, using the RP-2014 Total Dataset Healthy Annuitant Mortality Table

(continued)

rates after the end of the Total Employee Mortality Table, respectively, both projected 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.

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

(Showing values in 2018)				
	<u>State</u>	<u>Employees</u>	<u>Te</u>	achers
Age	Male	Female	Male	Female
25	82	24	82	24
30	79	30	79	30
35	92	42	92	42
40	111	58	111	58
45	173	90	173	90
50	211	119	211	119
55	244	150	244	150
60	277	178	277	178
65	332	216	332	216
70	429	294	429	294

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)

Teachers and State Regular Plans

State Employees and Teachers				
Age	Tier 1	Tier 2	Tier 3	
45	13	NA	NA	
50	29	NA	NA	
55	40	40	40	
59	150	40	40	
60	250	75	40	
61	200	175	40	
62	200	250	40	
63	200	150	75	
64	250	200	225	
65	350	250	300	
70	200	200	300	
75	1,000	1,000	1,000	

In the case of State Regular and Teacher 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. Rates are only applied for early retirement when the member is at least age 57. Earlier rates are applicable for normal retirement.

(continued)

State Special Plans

Members of State Special Plans other than the 25 & Out Plan and the 1998 Special Plan are all currently assumed to retire at a rate of 50% per year, beginning when they reach eligibility for unreduced benefits, with a 100% assumed rate at age 70.

Members of the 1998 Special Plan are assumed to retire at rates that vary by age and whether service is less than 25 years or not. Sample revised rates are as follows:

1998 Special Plan Retirement			
Age	Service < 25	Service >= 25	
55	20.0%	25.0%	
57	10.0%	25.0%	
60	20.0%	30.0%	
62	15.0%	30.0%	
65	23.4%	30.0%	
67	36.8%	50.0%	
70	100.0%	100.0%	

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

State Employees				
Age	Regular	Special	Teachers	
25	5.0	5.4	2.1	
30	6.1	6.5	2.3	
35	9.3	9.9	2.3	
40	14.8	15.8	3.1	
45	22.8	24.4	7	
50	34.0	36.4	10.9	
55	39.9	42.6	14.9	
60	43.4	16.4	18.8	

<sup>\* 10%</sup> assumed to receive Workers Compensation benefits offsetting disability benefit; also, current rates for State Special groups are higher by 7 per 10,000 at all ages.

#### 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. Vacation/Sick Leave Credits

For members who had ten years of service on July 1, 1993, credits for unused vacation and sick leave may be used to increase final average compensation and/or creditable service. In order to reflect this, projected retirement benefits are increased by 0.48% for state (regular) employees and 0.75% for teachers.

#### 12. 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.

(concluded)

Member Contribution Interest Rate: 2.4%

COLA Timing: September 1

#### 13. Rationale for Assumptions

The 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.

#### 14. Changes since Last Valuation

The annual rate of investment return was lowered from 6.875% to 6.75%.

#### 15. Rationale for Change in Actuarial Assumptions

The Board continuously reviews the investment return assumption and adopted a reduced rate of 6.75% effective with the 2018 valuation, at the advice of its investment consultant.

#### B. Actuarial Methods

#### 1. Funding Method

For the plans in 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). Both of these rates are developed for each plan within the Program, consisting of the Teacher Program, the State Regular Plan, and several State Special Plans.

For each plan in the Program, 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 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. This process results in specific normal cost rates for each of the plans in the Program.

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, future UAL payments, 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. Specifically, the remaining original UAL has 10 years of its prescribed amortization period remaining and all other gains and losses are amortized over twenty-year periods beginning on the date as of which they occur.

#### 2. Asset Valuation Method

For purposes of determining the employer contributions 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.

#### 3. Changes since Last Valuation

The amortization period for future gains and losses was changed from ten years to twenty years. Gains and Losses since 2012 were reset using a 20-year amortization years as of July 1, 2018.

#### 4. Rationale for Change

Maine State's Constitution was amended to change the amortization of gains and losses from using a 10-year period to using a 20-year period.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS SUMMARY OF PROGRAM AND PLAN PROVISIONS

#### **Consolidated Plan for Participating Local Districts**

#### 1. Member Contributions

Members are required to contribute a percentage of earnable compensation, which varies by Plan as follows:

 Regular AC & AN
 8.0%

 Regular BC
 4.5%

 Special 1C & 1N
 8.0%

 Special 2C & 2N
 8.0%

Special 3C & 3N 9.5% for first 25 years, 8.0% after Special 4C & 4N 9.0% for first 25 years, 8.0% after

Member contributions earn 2.4% annual interest.

As of May 10, 2018, contribution rates for both PLDs and members will be determined annually based on the risk-sharing contribution methodology adopted by the Board of Trustees. The rates for FY 2020 will be the first set by this methodology. The details are not yet finalized though, so the existing rates described above are assumed to continue for all periods in the future for the sake of this valuation.

#### 2. 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.

#### 3. Creditable Service

Creditable service includes service while a member, certain service prior to the establishment of the Plan, purchased service credit of which there are several types, and service while receiving disability benefits under the Plan.

Effective July 1, 2019, the ability to use accrued, unused vacation and sick leave towards retirement benefits will be available only to those who have 20 or more years of creditable service under the Plan at retirement.

#### 4. Service Retirement Benefits

### Regular Plan AC

Normal Retirement Age:

Plan members prior to July 1, 2014: 60

New members to the Plan on or after July 1, 2014: 65

Eligibility for Members in Active Service and Inactive Members: 25 years of creditable service.

Eligibility Alternative for Members in Active Service: At least one year of creditable service immediately before retirement and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement and not in Active Service on or after October 1, 1999: At least ten years of creditable service and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement but in Active Service on or after October 1, 1999: At least five years of creditable service and at least normal retirement age.

Benefit: 1/50 of average final compensation multiplied by years of membership service under Consolidated Plan AC reduced by:

Plan members prior to July 1, 2014: approximately 21/4% for each year that a member is younger than age 60 at retirement.

New members to the Plan on or after July 1, 2014: 6% for each year that a member is younger than age 65 at retirement.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS SUMMARY OF PROGRAM AND PLAN PROVISIONS

(continued)

Beginning July 1, 2019, the age reduction factors are a set of approximately actuarially equivalent rates rather than the above rates for members with less than 20 years of creditable service under the PLD Consolidated Plan on July 1, 2019. The above 2¼% and 6% rates remain in effect for those members with 20 or more years of creditable service under the PLD Consolidated Plan on July 1, 2019.

Form of Payment: Life annuity ("full benefit"), unless an optional method of payment is selected.

Cost-of-Living Adjustment: See item 11.

#### Regular Plan AN

This benefit plan is the same as Regular Benefit Plan AC, except that there is no provision for cost-of-living adjustments.

#### Regular Plan BC

Normal Retirement Age:

Plan members prior to July 1, 2014: 60

New members to the Plan on or after July 1, 2014: 65

Eligibility for Members in Active Service and Inactive Members: 25 years of creditable service.

Eligibility Alternative for Members in Active Service: At least one year of creditable service immediately before retirement and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement and not in Active Service on or after October 1, 1999: At least 10 years of creditable service and at least normal retirement age.

Eligibility for Members not in Active Service at Retirement but in Active Service on or after October 1, 1999: At least five years of creditable service and at least normal retirement age.

Benefit: 1/100 of average final compensation multiplied by years of membership service under Consolidated Plan BC reduced by:

Plan members prior to July 1, 2014: approximately 21/4% for each year that a member is younger than age 60 at retirement.

New members to the Plan on or after July 1, 2014: 6% for each year that a member is younger than age 65 at retirement.

Beginning July 1, 2019, the age reduction factors are a set of approximately actuarially equivalent rates rather than the above rates for members with less than 20 years of creditable service under the PLD Consolidated Plan on July 1, 2019. The above 2¼% and 6% rates remain in effect for those members with 20 or more years of creditable service under the PLD Consolidated Plan on July 1, 2019.

Form of Payment: Life annuity ("full benefit"), unless an optional method of payment is selected.

Cost-of-Living Adjustment: See item 11.

### Regular Plan Notes

- Under certain circumstances, Regular Plan service can count, on a pro rata basis specific to the applicable Special Plan, toward meeting Special Plan benefit eligibility requirements.
- The actual benefit for service earned prior to coverage under the Consolidated Plan may be based on a variable percentage of average final compensation multiplied by years of service under any previous plan(s) (the percentage depends on the previous plan(s)).

### Special Plan 1C

Eligibility: 20 years of creditable service in named positions.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS SUMMARY OF PROGRAM AND PLAN PROVISIONS

(continued)

Benefit: One-half of average final compensation plus 2% for each year of service in excess of 20 years of service.

Form of Payment: Life annuity ("full benefit"), unless an optional method of payment is selected.

Cost-of-Living Adjustment: See item 11.

#### Special Plan 1N

This benefit plan is identical to Special Benefit Plan 1C, except that there is no provision for cost-of-living adjustments.

#### Special Plan 2C

Eligibility: 25 years of creditable service in named positions.

Benefit: One-half average final compensation plus 2% for each year of service in excess of 25 years of service.

Form of Payment: Life annuity ("full benefit"), unless an optional method of payment is selected.

Cost-of-Living Adjustment: See item 11.

#### Special Plan 2N

This benefit plan is identical to Special Benefit Plan 2C, except that there is no provision for cost-of-living adjustments.

### Special Plan 3C

Eligibility: 25 years of creditable service in named positions.

Benefit: Two thirds of average final compensation plus 2% for each year of service in excess of 25 years of service.

Form of Payment: Life annuity ("full benefit"), unless an optional method of payment is selected.

Cost-of-Living Adjustment: See item 11.

# Special Plan 3N

This benefit is identical to Regular Benefit Plan 3C, except that there is no provision for cost-of-living adjustments.

### Special Plan 4C

Eligibility: Age 55 with 25 years of creditable service in named positions.

Benefit: 1/50 of average final compensation multiplied by years of membership service under Consolidated Plan 4C reduced by:

Plan members prior to July 1, 2014: approximately 21/4% for each year that a member is younger than age 55 at retirement.

New members to the Plan on or after July 1, 2014: 6% for each year that a member is younger than age 55 at retirement.

Beginning July 1, 2019, the age reduction factors are a set of approximately actuarially equivalent rates rather than the above rates for members with less than 20 years of creditable service under the PLD Consolidated Plan on July 1, 2019. The above 2¼% and 6% rates remain in effect for those members with 20 or more years of creditable service under the PLD Consolidated Plan on July 1, 2019.

Form of Payment: Life annuity ("full benefit"), unless an optional method of payment is selected. Cost-of-Living Adjustment: See item 11.

### Special Plan 4N

This benefit plan is identical to Special Benefit Plan 4C, except that there is no provision for cost-of-living adjustments.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS SUMMARY OF PROGRAM AND PLAN PROVISIONS

(continued)

### Special Plan Notes

- If a Special Plan member fails to meet the Special Plan eligibility criteria, their service retirement benefit is that provided by the applicable underlying Regular Plan; Special Plan service credits are used toward Regular Plan eligibility requirements.
- Service in all Special Plans counts, on a percentage basis, toward meeting the benefit eligibility requirements of any Special Plan.
- The actual benefit for service earned prior to coverage under the Consolidated Plan may be based on a variable percentage of average final compensation multiplied by years of service under any previous plan(s) (the percentage depends on the previous plan(s)).

### 5. 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 children 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 children.
  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 children, the surviving spouse and dependent children shall share equally an annual sum equal to the member's average final compensation. When there are no longer any dependent children, the surviving spouse shall receive two-thirds of the member's average final compensation until death.
- If the member leaves no spouse, the dependent children 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."

# 6. Pre-Retirement Ordinary Death Benefits

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

Benefit: Designated beneficiary, spouse, children, 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 children, 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, children, older parents, or estate.

# 7. Disability Retirement Benefits Other Than No Age Benefits (See Item 8)

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

Benefit: 66\%% 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 upon termination of service and ceases on cessation of disability or after five years, unless the member is unable to engage in any substantially gainful activity, in which case payments cease on the earlier of ten years following normal retirement age or the date that the service retirement benefit equals or exceeds the disability benefit.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS SUMMARY OF PROGRAM AND PLAN PROVISIONS

(continued)

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 (see item 11). On the date when service benefits reach a level of 66%% of average final compensation or ten years after the normal retirement date, if earlier, the disability converts to a service retirement benefit based on service and average final compensation at that time.

### 8. No-Age Disability Benefits

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

Benefit: 59% of average final compensation, reduced by employment earnings over the specified statutory limit, and to the extent that the benefit, in combination with Workers' Compensation and Social Security, exceeds 80% of average final compensation.

Form of Payment: Payment begins upon termination of service and ceases on cessation of disability or after five 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 (see item 11). On the date when service benefits reach a level of 59% of average final compensation, the disability benefit converts to a service retirement benefit based on service and average final compensation at that date.

### 9. Termination Benefit

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

#### 10. 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.

# 11. Cost-of-Living Adjustments (COLA)

All service and disability retirement and survivor benefits payable to (or in relation to) benefit recipients who were employed by a PLD that elected a plan that provides for a COLA 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 are effective September 1 and are applied to all benefits that have been in payment for 6 months for retirees who retire prior to September 1, 2015, 12 months for retirees who retired on or after September 1, 2015, and 24 months for those who retire on or after September 1, 2019.

The maximum annual increase is 2.5%, applicable to COLAs issued in September 2018 and later (prior to this, 3% for the 2014 through 2017 COLAs and 4% prior to the 2014 COLA).

Possible downward adjustments to future COLAs may occur if severe market losses result in contribution rates under the risk-sharing contribution methodology that exceed the contribution caps for PLD and member rates under this methodology. In this eventuality, a reduced COLA may be paid to retirees.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS SUMMARY OF PROGRAM AND PLAN PROVISIONS

(concluded)

### 12. Methods of Payment of Service Retirement Benefits

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

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

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

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

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

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

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

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

Option 8: Option 4 with pop-up\*.

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

#### 13. Plan Changes since Prior Valuation

The following plan changes were adopted by the MainePERS Board of Trustees on May 10, 2018:

- COLA changes
- Contribution changes (not yet reflected in this actuarial valuation but anticipated to be the basis of the FY 2020 rates adopted for both members and PLDs)
- Early retirement factor changes
- Unused Sick and/or Vacation time conversion

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS ACTUARIAL ASSUMPTIONS and METHODS

# A. Actuarial Assumptions

### 1. Annual Rate of Investment Return

PLDs	6.75%
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Rate is net of both administrative and investment expense.

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

PLDs	1.91%
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### 3. Sample Rates of Individual Salary Increases (% at Selected Years of Service)

Years of Service	Disability Rate
0	9.00%
1	4.80
2	3.60
3	3.10
4	2.75
5	2.75
10	2.75
15	2.75
20	2.75
25	2.75
30	2.75

The above rates include a 2.75% across-the-board increase at each year of service.

# 4. Sample Rates of Termination (% at Selected Years of Service)

Service	Regular	Special
0	25.0%	25.0%
1	20.0	12.5
2	15.0	10.0
3	12.0	7.5
4	10.0	5.0
5	9.0	4.0
10	6.0	2.5
15	4.0	2.5
20	2.5	2.5

Non-vested members are assumed to take a refund of contributions with interest. Once vested, the member is assumed to elect the greater of the deferred vested benefit or a refund of member contributions with interest based on present value at time of termination.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS **ACTUARIAL ASSUMPTIONS and METHODS**

(continued)

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

	(Showing values in 2018)		
Age	Male	Female	
50	41	32	
55	58	43	
60	60 78 62		
65 111 99		95	
70	172	153	
75 280 25		251	
80 471		424	
85	822	753	
90	1,453	1,351	
95	95 2,301 2,230		

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.

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

	(Showing values in 2018)		
Age	Male	Female	
20	4	2	
25	4	2	
30	4	3	
35	5	3	
40	6	5	
45	9	8	
50	17	13	
55	28	20	
60	47	29	
65	83	44	

<sup>\*</sup> For Regular Plans, 5% of deaths assumed to arise out of and in the course of employment, while for Special Plans, 20% of deaths are assumed to arise out of and in the course of employment.

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.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS ACTUARIAL ASSUMPTIONS and METHODS

(continued)

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

	(Showing values in 2018)		
Age	Male	Female	
25	82	24	
30	79	30	
35	92	42	
40	111	58	
45	173	90	
50	211	119	
55	244	150	
60	277	178	
65	332	216	
70	429	294	

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)

### Regular Plans

Regular Plans		
Age	Tier 1	Tier 2
45	50	50
50	50	50
55	50	50
60	200	50
65	250	200
70	1,000	1,000

In the case of PLD employees, Tier 1 refers to those who were hired prior to July 1, 2014, and Tier 2 refers to those who were hired on or after July 1, 2014.

#### Special Plans

Special Plans		
20	400	
21-24	300	
25	400	
26-29	300	
30	400	
31-34	300	
35+	1,000	

Note that the all retirement rates are only applied once the member is eligible to retire, so those in 25-year plans are not assumed to retire at 20 years of service. For Special Plan retirements with less than 20 years of service, we assume 250 retirements per 1,000 members.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS ACTUARIAL ASSUMPTIONS and METHODS

(continued)

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

Age	Revised Assumption
25	1.8
30	2.4
35	3.0
40	4.2
45	9.0
50	19.8
55	36.6
60	65.0

<sup>\* 10%</sup> assumed to receive Workers Compensation benefits offsetting disability benefit.

#### 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: 2.4%

COLA Timing: September 1

### 12. Rationale for Assumptions:

The 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 annual rate of investment return was lowered from 6.875% to 6.75%. Due to the plan changes, the COLA assumption was lowered from 2.20% to 1.91%.

# 14. Rationale for Change in Actuarial Assumptions:

The Board continuously reviews the investment return assumption and adopted a reduced rate of 6.75% effective with the 2018 valuation, at the advice of its investment consultant.

# CONSOLIDATED PLAN FOR PARTICIPATING LOCAL DISTRICTS ACTUARIAL ASSUMPTIONS and METHODS

(concluded)

#### B. Actuarial Methods

# 1. Funding Method

This section reflects the methodology that was in effect through the June 30, 2017 valuation to determine the FY 2019 contribution rates. While we anticipate that the method will be altered for developing the FY 2020 contribution rates, the new risk-sharing contribution methodology has not yet been finalized. We will provide an update of this appendix as part of the communication that will be provided under separate cover for the FY 2020 contribution rates.

The entry age normal actuarial funding method is used to determine costs. Under this funding method, the total PLD contribution rate consists of two elements: the PLD normal cost rate and the Pooled Unfunded Actuarial Liability (PUAL) rate. The actual contribution for a given PLD will include an Individual Unpooled Unfunded Actuarial Liability (IUUAL) payment as well, unless the PLD came into the Plan without an IUUAL or has paid off its IUUAL.

For each of the Regular and Special Plans in the Consolidated Plan, 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 benefits. 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 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. This process results in specific normal cost rates for each of the Regular and Special Plans in the Consolidated 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 normal costs, future member contributions, future IUUAL payments, and current assets. Under the Consolidated Plan, a PUAL Rate is calculated for the Consolidated Plan in the Aggregate based on the PUAL being amortized over a 20-year period commencing with the June 30, 2015 valuation date and any layers of PUAL arising after that date amortized over individual 20-year periods. This amortization uses a level percentage of pay method with payroll assumed to increase at 2.75% per year. The amortization payment thus derived for the valuation year is then divided by the total payroll to develop a rate that is then allocated to each plan within the Consolidated Plan on the basis of total normal cost plus member contributions for each such plan. That is, those plans that constitute a larger portion of the overall liability will pay a larger portion of the pooled UAL payment when this rate is positive and receive a larger UAL credit when this rate is negative.

The Initial Unpooled Unfunded Actuarial Liability (IUUAL) was calculated at entry into the Consolidated Plan for each PLD that entered with liabilities in excess of their assets and is paid off through payment of a specific dollar amount until paid off.

### 2. Asset Valuation Method

For purposes of determining PLD contribution to the Plan and the Plan's funding status, 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.

#### 3. Changes since Last Valuation

As noted in item 1 of this section, we anticipate that there will be changes in the methodology utilized to develop contributions based on this valuation, but will be providing this information under separate cover once the details of the new risk-sharing contribution methodology are finalized.

### **Judicial Retirement Program**

# 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 program.

#### 2. Member Contributions

Members are required to contribute 7.65% of earnable compensation. Member contributions earn 2.4% 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.

#### 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.

(continued)

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

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.

# 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, prorated 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

(continued)

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 costofliving 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: 66%% 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 that 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 66%% 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

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

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

(continued)

## 8. Pre-Retirement Ordinary Death Benefits

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

Benefit: Designated beneficiary, spouse, children, 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 children, 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, children, 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 lineofduty.

#### 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 children 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 children.
  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 children, the surviving spouse and dependent children shall share equally an annual sum equal to the member's average final compensation. When there are no longer any dependent children, the surviving spouse shall receive two-thirds of the member's average final compensation until death.
- If the member leaves no spouse, the dependent children 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 five years of creditable 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 five 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.

(concluded)

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

COLA Cap History: (value as of September 1 of listed year when COLA effective):

2014 - \$20,000.00 2015 - \$20,420.00 2016 - \$20,940.71 2017 - \$21,474.70 2018 - \$21,818.30

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\*.

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. Program Changes since Prior Valuation

None.

# JUDICIAL RETIREMENT PROGRAM ACTUARIAL ASSUMPTIONS and METHODS

### A. Actuarial Assumptions

### 1. Annual Rate of Investment Return

Judicial	6.75%
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Rate is net of both administrative and investment expense.

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

# 3. Annual Rate of Individual Salary Increase:

Judicial	2.75%
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#### 4. Sample Rates of Termination (% at Selected Ages)

Age	Termination Rate
25	7%
30	6
35	5
40	4
45	3
50	2
55	1

Non-vested members are assumed to take a refund of contributions with interest. Once vested, the member is assumed to elect the greater of the deferred vested benefit or a refund of member contributions with interest based on present value at time of termination.

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

	(Showing values in 2018)	
Age	Male	Female
50	41	32
55	58	43
60	78	62
65	111	95
70	172	153
75	280	251
80	471	424
85	822	753
90	1,453	1,351
95	2,301	2,230

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.

# JUDICIAL RETIREMENT PROGRAM **ACTUARIAL ASSUMPTIONS and METHODS**

(continued)

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

	(Showing values in 2018)	
Age	Male	Female
20	4	2
25	4	2
30	4	3
35	5	3
40	6	5
45	9	8
50	17	13
55	28	20
60	47	29
65	83	44

<sup>\* 5%</sup> of deaths assumed to arise out of and in the course of employment

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.

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

	(Showing values in 2018)	
Age	Male	Female
25	82	24
30	79	30
35	92	42
40	111	58
45	173	90
50	211	119
55	244	150
60	277	178
65	332	216
70	429	294

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.

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

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

# JUDICIAL RETIREMENT PROGRAM ACTUARIAL ASSUMPTIONS and METHODS

(continued)

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.

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

Age	Disability Rate
25	0%
30	0
35	0
40	0
45	0
50	0
55	0
60	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: 2.4%

COLA Timing: September 1

#### 12. Rationale for Actuarial Assumptions

The 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 annual rate of investment return was lowered from 6.875% to 6.75%.

#### 14. Rationale for Change in Actuarial Assumptions

The Board continuously reviews the investment return assumption and adopted a reduced rate of 6.75% effective with the 2018 valuation, at the advice of its investment consultant.

### **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.

# JUDICIAL RETIREMENT PROGRAM ACTUARIAL ASSUMPTIONS and METHODS

(concluded)

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 the Program's 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.

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.

# 3. Changes since Last Valuation

None.

### **Legislative Retirement Program**

# 1. Membership

Except as provided by statute, membership is mandatory for every legislator in service in the Legislature on or after December 3, 1986, and optional for those who were members of the Retirement System on December 2, 1986.

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

#### 2. Member Contributions

Members are required to contribute 7.65% of earnable compensation. Member contributions earn 2.4% 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.

#### 4. Creditable Service

Creditable service includes the following:

- A. All legislative service as a member after December 2, 1986;
- B. All legislative service before December 3, 1986, for which contributions have been made to the Retirement System at the applicable rate, including appropriate interest;
- C. Service credited while receiving disability benefits under the Program; and
- D. All service creditable under the Retirement System as a State Employee provided the member elects to have the member's own and the employer's contributions on behalf of such service transferred to the Legislative Program.

#### 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 60.
- 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.

(continued)

# 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 62.

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.

#### 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 65.

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: 1/50 of average final compensation multiplied by years of creditable service.

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

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.

(continued)

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.

Minimum benefit \$100 per month if at least ten years of creditable service.

Form of Payment: Life annuity.

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

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

Benefit: 66%% 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 ten years following normal retirement age and the date that 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 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 66%% of average final compensation or ten years after the normal retirement date, 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

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

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

(continued)

#### 9. Pre-Retirement Accidental Death Benefits

Eligibility: Death while active or disabled resulting from an injury received in the lineofduty.

#### 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 children 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 children.
  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 children, the surviving
  spouse and dependent children shall share equally an annual sum equal to the member's average final compensation.
  When there are no longer any dependent children, the surviving spouse shall receive two-thirds of the member's average
  final compensation until death.
- If the member leaves no spouse, the dependent children 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 five years of creditable 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 five 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 that is not in excess of a COLA cap whose value grows annually with the same adjustment as the COLA (see values below) for all benefits that have been in payment for at least twelve months as of that date. The maximum annual increase is 3%. Average final compensation used in determining disability benefits for disabled members is similarly adjusted for purposes of determining the recipient's service retirement benefit if and when the recipient moves to service retirement.

COLA Cap History: (value as of September 1 of listed year when COLA effective):

2014 - \$20,000.00 2015 - \$20,420.00 2016 - \$20,940.71 2017 - \$21,474.70 2018 - \$21,818.30

Members who did not have ten years of service on July 1, 1993 will begin receiving costofliving 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.

(concluded)

### 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\*.

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. Program Changes since Prior Valuation

None.

# LEGISLATIVE RETIREMENT PROGRAM **ACTUARIAL ASSUMPTIONS and METHODS**

# **Actuarial Assumptions**

**Annual Rate of Investment Return** 

Legislative	6.75%
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Rate is net of both administrative and investment expense.

Cost-of-Living Adjustment (COLA) Assumed Rate

Legislative	2.20%
-------------	-------

**Annual Rate of Individual Salary Increase** 

Legislative	2.75%
-------------	-------

Sample Rates of Termination (% at Selected Years of Service)

Service	Termination Rate
0	0%
1	0
2	30
3	30
4	25
5	25
6	10
7	10
8	50
9	50
10	25
11	25
12	25
13	25
14	25
15	25
16+	50

The rates shown are only applicable in the fiscal years ending in odd years while zero terminations are assumed in the fiscal years ending in even years.

Non-vested members are assumed to take a refund of contributions with interest. Once vested, the member is assumed to elect the greater of the deferred vested benefit or a refund of member contributions with interest based on present value at time of termination.

# LEGISLATIVE RETIREMENT PROGRAM ACTUARIAL ASSUMPTIONS and METHODS

(continued)

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

	(Showing values in 2018)	
Age	Male	Female
50	41	32
55	58	43
60	78	62
65	111	95
70	172	153
75	280	251
80	471	424
85	822	753
90	1,453	1,351
95	2,301	2,230

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.

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

	(Showing values in 2018)		
Age	Male	Female	
20	4	2	
25	4	2	
30	4	3	
35	5	3	
40	6	5	
45	9	8	
50	17	13	
55	28	20	
60	47	29	
65	83	44	

 $<sup>^{\</sup>star}\,$  5% of deaths assumed to arise out of and in the course of employment

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.

# LEGISLATIVE RETIREMENT PROGRAM ACTUARIAL ASSUMPTIONS and METHODS

(continued)

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

	(Showing values in 2018)	
Age	Male	Female
25	82	24
30	79	30
35	92	42
40	111	58
45	173	90
50	211	119
55	244	150
60	277	178
65	332	216
70	429	294

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.

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

Age	Fiscal Years Ending Even	Fiscal Years Ending Odd
57-69	0	250
70+	0	1,000

Note that the all retirement rates are only applied once the member is eligible to retire, so those in with 62 or 65 normal retirement ages are not assumed to retire until eligible. No retirements are assumed prior to age 57, regardless of service amount.

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

Age	Disability Rate
25	0
30	0
35	0
40	0
45	0
50	0
55	0
60	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.

### LEGISLATIVE RETIREMENT PROGRAM ACTUARIAL ASSUMPTIONS and METHODS

(continued)

### 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: 2.4%

COLA Timing: September 1

### 12. Rationale for Actuarial Assumptions

The 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 discount rate was lowered from 6.875% to 6.75%.

### 14. Rationale for Change in Actuarial Assumptions

The Board continuously reviews the investment return assumption and adopted a reduced rate of 6.75%, effective with the 2018 valuation, at the advice of its investment consultant.

### **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 the Program's 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.

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.

### LEGISLATIVE RETIREMENT PROGRAM ACTUARIAL ASSUMPTIONS and METHODS

(concluded)

### 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.

### 3. Changes since Last Valuation

None.

### RETIREE GROUP LIFE INSURANCE SUMMARY OF PROGRAM AND PLAN PROVISIONS

### Membership

Service Retirement: A retiree must have participated in the group life insurance program for at least ten years and possess

coverage just prior to retirement.

Disability Retirement: An employee must have participated in the group life insurance program immediately prior to

disablement.

### **Basic Insurance**

Average final compensation calculated for retirement purposes.

### Amount of Insurance for a Retiree

Service Retirement: The Basic Insurance will be reduced by 15% per year until the amount equal to the greater of (a) 40% of

the initial Basic Insurance, or (b) \$2,500.

Disability Retirement: The amount of basic life insurance in force prior to retirement will be continued until normal retirement

age. At normal retirement age, the amount of insurance will be reduced as for service retirement.

### **Retiree Contribution**

State Employees: None
Teachers: None
Judges: None
Legislators: None

PLD: PLD must pay \$0.46 per month per \$1,000 of base benefit, based on the coverage amounts declining

from 100% to 40%.

### **Normal Retirement Age**

The specified age, the years of service requirement or any age and years of service combination at which a participant may become eligible for unreduced service retirement benefits.

### **Discontinued Coverages at Retirement**

- Supplemental Life
- Accidental Death and Dismemberment
- · Dependent Life

(Discontinued coverage may be ported to another group term product or converted to an individual policy. MainePERS is charged a fee for those active employees who convert to an individual policy upon termination from employment. Conversion charges are considered a cost of active, not retiree group life insurance. Therefore, it is not included in these liabilities.)

### RETIREE GROUP LIFE INSURANCE ACTUARIAL ASSUMPTIONS AND METHODS

### **Economic Assumptions**

Valuation Date: June 30, 2018

State Sponsored Plans Beginning of Year Investment Return: 6.875% per year

State Sponsored Plans End of Year Investment Return: 6.75% per year

PLD GASB Beginning of Year Investment Return: 5.41% per year

PLD GASB End of Year Investment Return: 5.13% per year

Cost-of-Living Increases in Life Benefits: N/A. Unlike pension benefits, Life Benefits do not increase

with Cost of Living.

Premium Expense Assumption: To reflect administrative expenses associated with the

distribution of benefits, the following loads have been added to the liabilities, normal cost, and benefit payments.

State Employees, Judges and Legislators: 9.52%

**Teachers:** 13.07%

Participating Local Districts: 8.66% of claims

Conversion Charges: Applies to the cost of active group life insurance, not

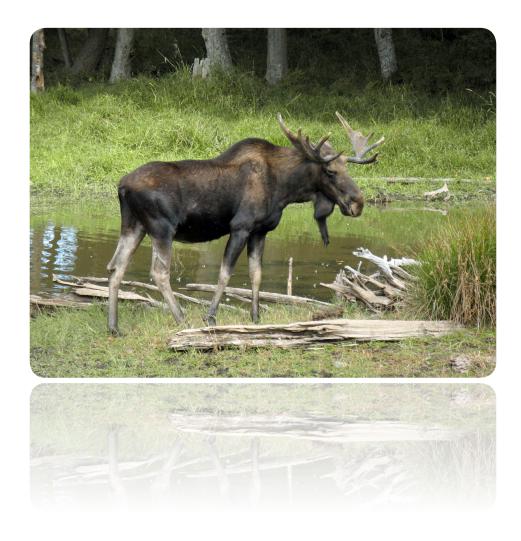
retiree group life insurance.

Form of Benefit Payment: Lump Sum.

Other Assumptions and Methods All other assumptions and methods match those used for

the pension valuation as of June 30, 2018.

### STATISTICAL SECTION



Maine State Animal: Moose

### MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM STATISTICAL SECTION

(UNAUDITED)

This section of the Maine Public Employees Retirement System's Comprehensive Annual Financial Report presents detailed information as a context for understanding this year's financial statements, note disclosures, and supplementary information. This information has not been audited by the independent auditor.

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# CHANGES IN FIDUCIARY NET POSITION - STATE EMPLOYEE AND TEACHER PLAN DEFINED BENEFIT PLANS

						Fiscal Year					
		2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Additions											
Member contributions	69	140,844,879 \$	139,464,284 \$	125,523,986 \$	123,528,807 \$	121,033,152 \$	121,059,118 \$	121,071,499 \$	124,356,773 \$	125,814,747 \$	124,008,211
Employer contributions		211,251,144	211,037,365	199,212,719	173,935,492	162,920,147	136,937,972	125,839,206	184,423,671	183,937,026	187,865,547
Non-employer entity contributions		129,421,735	116,080,164	112,477,836	147,283,716	142,303,104	126,762,206	126,343,975	148,728,049	144,496,637	131,104,913
Investment Income (net of expenses)		1,077,827,555	1,256,043,735	40,540,758	191,829,057	1,517,432,346	929,806,764	43,821,836	1,583,183,960	748,522,308	(1,575,728,247)
Transfer from other funds											
Total additions to fiduciary net position		1,559,345,313	1,722,625,548	477,755,299	636,577,072	1,943,688,749	1,314,566,060	417,076,516	2,040,692,453	1,202,770,718	(1,132,749,576)
Deductions											
Benefit payments		792,397,467	762,449,708	727,717,177	703,292,105	667,506,634	651,525,831	612,512,717	574,135,970	548,688,977	524,001,240
Refunds		17,984,303	17,876,272	16,806,566	19,432,153	21,684,397	17,891,255	21,024,589	20,747,236	17,214,436	37,390,057
Administrative expenses		10,076,242	9,216,027	8,649,030	9,386,695	8,246,740	7,651,938	7,268,110	7,553,424	7,461,728	7,882,567
Transfer to other funds			124,178	6,342,010						,	
Total deductions from fiduciary net position		820,458,012	789,666,185	759,514,783	732,110,953	697,437,771	677,069,024	640,805,416	602,436,630	573,365,141	569,273,864
Change in fiduciary net position	69	738,887,301 \$	932,959,363 \$	(281,759,484) \$	(95,533,881) \$	1,246,250,978 \$	637,497,036 \$		(223,728,900) \$ 1,438,255,823 \$	629,405,577 \$	(1,702,023,440)
Fiduciary Net Position											
Beginning of Year	69	10,893,305,470 \$	9,960,346,107 \$	10,242,105,591 \$	10,337,639,472 \$	9,091,388,494 \$ 8,453,891,458	8,453,891,458 \$	8,677,620,358	\$ 7,239,364,535 \$	\$ 856,856,609,9	8,311,982,398
End of Year	69	11,632,192,771 \$	10,893,305,470 \$	9,960,346,107 \$	10,242,105,591 \$	10,337,639,472 \$	9,091,388,494 \$	8,453,891,458 \$	8,677,620,358 \$	7,239,364,535 \$	856,858,958

# DEFINED BENEFIT PLANS CHANGES IN FIDUCIARY NET POSITION - JUDICIAL PLAN

						Fiscal Year	-				
		2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Additions											
Member contributions	ь	803,875 \$	584,451 \$	549,845 \$	549,691 \$	528,192 \$	518,094 \$	517,419 \$	518,138 \$	530,521 \$	508,074
Employer contributions		1,179,328	1,144,445	1,077,545	979,281	932,223	841,397	810,721	987,261	961,083	1,267,869
Non-employer entity contributions											•
Investment Income (net of expenses)		906,909,9	7,799,507	129,372	1,055,347	8,416,042	5,195,908	238,870	9,044,929	4,368,320	(9,198,191)
Transfer from other funds				6,342,010							
Total additions to fiduciary net position		8,390,108	9,528,403	8,098,772	2,584,319	9,876,457	6,555,399	1,567,010	10,550,328	5,859,924	(7,422,248)
Deductions											
Benefit payments		3,804,709	3,651,927	3,501,911	3,383,995	3,219,480	3,282,344	3,171,846	3,034,095	2,799,764	2,582,178
Refunds									124		29,128
Administrative expenses		61,708	56,436	47,577	49,399	41,681	42,858	40,852	43,534	30,222	31,024
Transfer to other funds											
Total deductions from fiduciary net position_	_	3,866,417	3,708,363	3,549,488	3,433,394	3,261,161	3,325,202	3,212,698	3,077,753	2,829,986	2,642,330
Change in fiduciary net position	ω	4,523,691 \$	5,820,040 \$	4,549,284 \$	(849,075) \$	6,615,296 \$	3,230,197 \$	(1,645,688) \$	7,472,575 \$	3,029,938 \$	(10,064,578)
Fiduciary Net Position											
Beginning of Year	<del>(S)</del>	66,710,149 \$	60,890,109 \$	56,340,825 \$	57,189,900 \$	50,574,604 \$	47,344,407 \$	48,990,095 \$	41,517,520 \$	38,487,582 \$	48,552,160
End of Year	မာ	71,233,840 \$	66,710,149 \$	60,890,109 \$	56,340,825 \$	57,189,900 \$	50,574,604 \$	47.344,407 \$	48,990,095 \$	41,517,520 \$	38,487,582

# CHANGES IN FIDUCIARY NET POSITION - LEGISLATIVE PLAN

						Fiscal Year					
		2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Additions											
Member contributions	B	153,881 \$	202,388 \$	137,893 \$	193,356 \$	139,501 \$	194,669 \$	133,579 \$	182,065 \$	129,308 \$	179,037
Employer contributions					4,418	3,857	6,507				
Non-employer entity contributions											
Investment Income (net of expenses)		1,176,462	1,366,222	47,890	206,453	1,622,295	975,524	48,845	1,634,305	780,615	(1,645,122)
Transfer from other funds											
Total additions to fiducian ast moition		1 000 040	1 550 610	105 700	404 227	1 765 659	1 176 700	100,001	1 016 970	000	(1 466 005)
ota additoris to indecialy net position		1,000,010	010,000,1	700,100	127,404	7,100,000	201,017,7	174,707	010,010,1	020,000	(1,400,000)
Deductions											
Benefit payments		427,063	399,142	367,545	327,875	308,770	280,254	274,088	255,181	245,572	230,373
Refunds		32,682	69,901	77,786	111,237	8,836	82,768	5,613	93,809	58,762	134,503
Administrative expenses		11,002	10,003	9,353	9,584	7,975	8,040	7,241	7,551	7,741	10,111
Transfer to other funds				•	•						
Total deductions from fiduciary net position		470,747	479,046	454,684	448,696	325,581	371,062	286,942	356,541	312,075	374,987
Change in fiduciary net position	s	\$ 965,638	1,089,564 \$	(268,901) \$	(44,469) \$	1,440,072 \$	805,638 \$	(104,518) \$	1,459,829 \$	597,848 \$	(1,841,072)
Fiduciary Net Position											
Beginning of Year	S	11,896,225 \$	10,806,661 \$	11,075,562 \$	11,120,031 \$	\$ 656'629'6	8,874,321 \$	8,978,839 \$	7,519,010 \$	6,921,162 \$	8,762,234
End of Year	s)	12,755,821 \$	11,896,225 \$	10,806,661 \$	11,075,562 \$	11,120,031 \$	8 656'629'6	8,874,321 \$	8,978,839 \$	7,519,010 \$	6,921,162

# CHANGES IN FIDUCIARY NET POSITION - PLD CONSOLIDATED PLAN **DEFINED BENEFIT PLANS**

Additions  Member contributions  Employer contributions  Non-employer entity contributions Investment income (net of expenses)  Transfer from other funds  Total additions to fiduciary net position  363,642,383									
contributions \$ 48,050,202 contributions 56,092,662 loyer entity contributions and income (net of expenses) 259,699,519 from other funds 363,842,383	2017	2016	2015	2014	2013	2012	2011	2010	2009
\$ 48,050,202 56,092,662 56,092,662 of expenses) 259,699,519 ds 259,699,519 avy net position 363,842,383									
of expenses) ds any net position	46,080,851 \$	40,861,405 \$	37,202,921 \$	33,210,510 \$	31,658,619 \$	32,343,655 \$	35,022,928 \$	32,332,068 \$	29,710,526
	51,387,011	47,624,182	43,366,730	32,706,160	26,465,471	22,260,128	17,459,677	12,311,355	11,582,485
	299,780,948	10,200,342	46,075,304	361,125,177	221,313,918	10,111,043	381,383,555	182,525,441	(389,931,938)
	124,177								
	397,372,987	98,685,929	126,644,955	427,041,847	279,438,008	64,714,826	433,866,160	227,168,864	(348,638,927)
Daductions									
Benefit payments 147,516,358	140,413,488	134,834,445	129,476,010	121,559,257	114,627,512	108,646,611	101,288,867	96,702,118	93,095,725
Refunds * 4,571,527	5,750,078	5,085,235	48,939,042	5,602,101	6,051,774	22,911,291	11,353,634	5,822,392	8,041,146
Administrative expenses 2,411,666	2,209,324	2,028,294	2,117,266	1,779,304	1,810,389	1,732,139	1,827,587	1,668,738	1,754,829
Transfer to other funds 386,621	186,378	217,338							
				000	120 000 000		000		00000
lotal deductions from fiduciary net position 154,886,172	146,559,268	142,165,312	180,532,318	128,940,662	122,489,675	133,290,041	114,470,088	104,193,248	102,891,700
Change in fiduciary net position \$ 208,956,211 \$	248,813,719 \$	(43,479,383) \$	(53,887,363) \$	298,101,185 \$	156,948,333 \$	(68,575,215) \$	319,396,072 \$	122,975,616 \$	(451,530,627)
Fiduciary Net Position									
Beginning of Year         \$ 2,607,223,644 \$ 2           End of Year         \$ 2,816,179,855 \$ 2	2,358,409,925 <b>\$</b> 2,607,223,644 <b>\$</b>	2,401,889,308 <b>\$</b> 2,358,409,925 <b>\$</b>	2,455,776,671 \$ 2,401,889,308 \$	2,157,675,486 \$ 2,455,776,671 \$	2,000,727,153 \$ 2,157,675,486 \$	2,069,302,368 \$ 2,000,727,153 \$	1,749,906,296 \$ 2,069,302,368 \$	1,626,930,680 \$ 1,749,906,296 \$	2,078,461,307 1,626,930,680

# CHANGES IN FIDUCIARY NET POSITION - PLD AGENT PLAN

						Fiscal Year	_				
		2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Additions											
Member contributions	છ	\$ 609'89	76,783 \$	83,614 \$	94,468 \$	94,136 \$	106,000 \$	105,380 \$	124,472 \$	132,049 \$	146,253
Employer contributions		594,730	630,639	783,608	916,671	667,846	656,047	102,509	302,338	9,024	2,776
Non-employer entity contributions											
Investment Income (net of expenses)		3,477,465	4,160,113	112,396	662,680	5,581,964	3,591,957	79,872	6,669,837	6,005,408	(11,619,730)
Transfer from other funds											
Total additions to fiduciary net position		4,140,804	4,867,535	979,618	1,673,819	6,343,946	4,354,004	287,761	7,096,647	6,146,481	(11,470,701)
Dodustin											
Deductions											
Benefit payments		2,788,425	2,777,307	2,779,624	2,780,492	2,702,486	2,644,060	2,608,985	2,442,356	2,397,937	2,695,479
Refunds						1,897,634		201,244	9,190	141	17,109
Administrative expenses		33,056	4,005	29,962	32,253	27,981	30,704	30,884	33,525	31,457	41,741
Transfer to other funds											
Total deductions from fiduciary net position		2,821,481	2,781,312	2,809,586	2,812,745	4,628,101	2,674,764	2,841,113	2,485,071	2,429,535	2,754,329
Change in fiduciary net position	B	1,319,323 \$	2,086,223 \$	(1,829,968) \$	(1,138,926) \$	1,715,845 \$	1,679,240 \$	(2,553,352) \$	4,611,576 \$	3,716,946 \$	(14,225,030)
Eidiniary Net Docition											
ionico di monti	•										
Beginning of Year	s	35,736,738 \$	33,650,515 \$	35,480,483 \$	36,619,409 \$	34,903,564 \$	33,224,324 \$	35,777,676 \$	31,166,100 \$	27,449,154 \$	41,674,184
End of Year	B	37,056,061 \$	35,736,738 \$	33,650,515 \$	35,480,483 \$	36,619,409 \$	34,903,564 \$	33,224,324 \$	35,777,676 \$	31,166,100 \$	27,449,154

# GROUP LIFE INSURANCE PLAN CHANGES IN FIDUCIARY NET POSITION

# LAST TEN FISCAL YEARS \*

# GROUP LIFE INSURANCE PLAN - ACTIVE EMPLOYEES

		Fiscal Year	l Yea	_
		2018		2017
Additions				
Member contributions	υ	3,865,718	υ	4,464,169
Employer contributions		1,041,734		1,066,443
Non-employer entity contributions		•		•
Investment Income (net of expenses)		754,459		947,664
Total additions to fiduciary net position		5,661,911		6,478,276
Deductions				
Benefit payments		4,229,368		4,222,130
Refunds		•		٠
Administrative expenses		73,496		56,138
Transfer to other funds		•		
Total deductions from fiduciary net position		4,302,864		4,278,268
Change in fiduciary net position	G	1,359,047	ь	2,200,008
Fiduciary Net Position				
Beginning of Year	S	8,295,918	ь	6,095,910
End of Year	B	9,654,965	69	8,295,918

\*The System currently has this information available for the years indicated. Additional information will be added to the schedule each year until the requisite ten years is obtained.

### GROUP LIFE INSURANCE PLAN CHANGES IN FIDUCIARY NET POSITION

# LAST TEN FISCAL YEARS \*

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# GROUP LIFE INSURANCE PLAN - PLD RETIREES

		Fiscal Year	ear	_		Fiscal Year	ear
		2018	2017			2018	2017
Additions				Additions			
Employer contributions	S	4,179,011 \$	3,650,300	Employer contributions	s	1,069,640 \$	1,037,124
Non-employer entity contributions		3,459,442	3,270,928	Non-employer entity contributions		,	,
Investment Income (net of expenses)		7,804,837	9,885,897	investment income (net of expenses)		1,333,324	1,738,914
Transfer from other funds				Transfer from other funds			
		000		en e		700000	000 000
Total additions to fiduciary het position		15,443,290	15,607,125	rotal auditions to inductary riet position		2,402,304	2,176,030
Deductions				Deductions			
Benefit payments		7,269,808	6,759,071	Benefit payments		1,530,346	1,529,148
Refunds			,	Refunds		,	
Administrative expenses		769,717	580,641	Administrative expenses		133,624	104,294
Total deductions from fiduciary net position		8,039,525	7,339,712	Total deductions from fiduciary net position		1,663,970	1,633,442
Change in fiduciary net position	S	7,403,765 \$	9,467,413	Change in fiduciary net position	w	738,994 \$	1,142,596
Fiduciary Net Position				Fiduciary Net Position			
Beginning of Year	S	86,882,864 \$	77,415,451	Beginning of Year	S	15,082,934 \$	13,940,338
End of Year	S	94,286,629 \$	86,882,864	End of Year	S	15,821,928 \$	15,082,934

\*The System currently has this information available for the years indicated. Additional information will be added to the schedule each year until the requisite ten years is obtained.

# DEFINED CONTRIBUTION PLANS CHANGES IN FIDUCIARY NET POSITION

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		2018	2017	2016		2015	2014	2013	2012	2011	2010	2009
Additions												
Member contributions	B	3,256,015 \$	3,218,801	\$ 3,628,460	8 0	3,165,927 \$	3,505,423 \$	2,662,317 \$	2,888,874 \$	2,790,771 \$	2,381,995 \$	1,967,488
Employer contributions		587,906	560,505	47,768	00	131,589	109,515	111,327	43,434	47,377	53,956	153,334
Other contributions			•	•								
Investment Income (net of expenses)		2,801,636	3,447,427	226,942	2	719,767	3,210,308	1,815,398	318,640	1,939,674	742,235	(1,173,821)
Transfer from other funds		386,621	186,378	217,338	80			-	•	•	•	,
Total additions to fiduciary net position		7,032,178	7,413,111	4,120,508	00	4,017,283	6,825,246	4,589,042	3,250,948	4,777,822	3,178,186	947,001
Deductions												
Benefit payments			•	•				•				,
Refunds and withdrawals		2,774,078	2,072,166	1,866,147	7	1,718,286	2,032,458	643,765	1,055,018	770,630	411,390	470,750
Administrative expenses		496,042	284,202	309,558	00	130,964	112,015	113,827	45,964	50,143	989'99	159,635
Transfer to other funds									•		•	
Total deductions from fiduciary net position_	_	3,270,120	2,356,368	2,175,705	ړي	1,849,250	2,144,473	757,592	1,100,982	820,773	468,076	630,385
Change in fiduciary net postion	ဖ	3,762,058 \$	5,056,743	\$ 1,944,803	8	2,168,033 \$	4,680,773 \$	3,831,450 \$	2,149,966 \$	3,957,049 \$	2,710,110 \$	316,616
Fiduciary Net Position												
Beginning of Year	ß	34,198,883 \$	29,142,140	\$ 27,197,337	S	25,029,304 \$	20,348,531 \$	16,517,081 \$	14,367,115 \$	10,410,066 \$	7,699,956	7,383,340
End of Year	B	37,960,941 \$	34,198,883	\$ 29,142,140	B	27,197,337 \$	25,029,304 \$	20,348,531 \$	16,517,081 \$	14,367,115 \$	10,410,066 \$	956'669'2

# RETIREE HEALTH INVESTMENT TRUST FUND CHANGES IN FIDUCIARY NET POSITION

					Fiscal Year	ear				
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Additions										
Member contributions	9				9	9			·	
Employer contributions	2,000,000	4,000,000	5,584,992			1,840,385	6,000,000	14,411,368		
Other contributions	•									
Investment Income (net of expenses)	21,271,236	26,513,072	2,388,249	5,405,438	29,564,596	18,706,315	959,334	23,350,728	13,143,997	(16,084,427)
Transfer from other funds	•		,							•
Total additions to fiduciary net position	23,271,236	30,513,072	7,973,241	5,405,438	29,564,596	20,546,700	6,959,334	37,762,096	13,143,997	(16,084,427)
Deductions										
Benefit payments	•		,							•
Refunds	•									,
Administrative expenses	6,480	5,844	5,354	117,844	90,030	85,609	68,643	64,510	56,754	55,695
Transfer to other funds	•									•
Total deductions from fiduciary net position	6,480	5,844	5,354	117,844	90,030	85,609	68,643	64,510	56,754	55,695
Change in fiduciary net position	\$ 23,264,756 \$ 30,507,228	\$ 30,507,228 \$	7,967,887 \$	5,287,594 \$	29,474,566 \$	20,461,091 \$	6,890,691 \$	37,697,586 \$	13,087,243 \$	(16,140,122)
Fiduciary Net Position										
Beginning of Year	\$ 233,595,562 \$ 203,088,334	\$ 203,088,334 \$	195,120,447 \$	189,832,853	\$ 160,358,287 \$	\$ 139,897,196 \$	133,006,505 \$	95,308,919 \$	82,221,676 \$	98,361,798
End of Year	\$ 256,860,318	\$ 233,595,562 \$	203,088,334	\$ 195,120,447 \$	\$ 189,832,853 \$	\$ 160,358,287 \$	139,897,196 \$	133,006,505 \$	95,308,919 \$	82,221,676

### BENEFIT AND REFUND DEDUCTIONS FROM FIDUCIARY NET POSITION **DEFINED BENEFIT PLANS** BY TYPE

### LAST TEN FISCAL YEARS

### STATE EMPLOYEE AND TEACHER PLAN

							Fiscal Year	Year	_							
		2018		2017	2016	2015	2014		2013	2012		2011	2010		2009	6
Type of Benefit Service retirement henefits	•	748 896 621 \$ 718 059 271 \$	, ·	718 059 271 \$	683 518 206 \$	658 113 295 ¢	\$ 622 008 923 \$ 604 712 027 \$	€		566 668 373 ¢	Ι.	528 676 257 ¢	\$ 503 788 858	82	475 5	475 556 492
Disability benefits	•	24,787,516	,	26,232,096	26,795,729			•		29,864,477		29,632,446	29,273,855	· 股	38,2	38, 239, 104
Pre-Retirement death benefits		18,713,331		18,158,342	17,403,242	17,315,685	16,567,000		16,735,839	15,979,866	,,	15,827,267	15,626,264	49	10,2	10,205,645
Total benefits	69	792,397,468 \$ 762,449,709 \$	69	762,449,709 \$		727,717,177 \$ 703,292,105 \$ 667,506,634 \$ 651,525,831 \$ 612,512,716 \$ 574,135,970 \$ 548,688,977 \$ 524,001,241	\$ 667,506,634	69	651,525,831 \$	612,512,716	69	574,135,970 \$	\$ 548,688,9	\$ 77	524,0	001,241
Type of Refund																
Death	69	3,079,428	69	4,373,110 \$	2,778,790 \$	3,120,006 \$	\$ 3,247,581	69	3,955,186							
Separation		14,904,875		13,503,162	14,027,776	16,312,147	18,436,816		13,936,069							
Other		,		•	•		,		•							

Data by type of refund, by plan, was not readily available for the years prior to 2013. This information will continue to be populated until the requisite ten years is displayed.

17,891,255

21,684,397

19,432,153 \$

16,806,566 \$

17,876,272 \$

\$ 17,984,303 \$

Total refunds

### DICIAL PLAN

JUDICIAL PLAN											
						Fiscal Year					
		2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Type of Benefit Service retirement benefits Disability benefits Pre-Retirement death benefits	↔	3,804,709 \$ 3,651,927	3,651,927 \$	3,501,911 \$	3,383,995 \$	3,194,250 \$ 25,230	3,207,656 \$ 74,688	3,107,935 \$ 63,911	2,996,751 \$ 37,344	2,762,420 \$	2,514,193 67,985
Total benefits	69	3,804,709 \$ 3,651,927	3,651,927 \$		3,501,911 \$ 3,383,995 \$	3,219,480 \$	3,282,344 \$	3,171,846 \$	3,219,480 \$ 3,282,344 \$ 3,171,846 \$ 3,034,095 \$ 2,799,764 \$ 2,582,178	2,799,764 \$	2,582,178
Type of Refund Death Separation Other	€9				<b>ω</b>						
Total refunds	ω	•	<b>6</b> 5	•	٠,		<b>69</b>	•	•	٠,	•

Data by type of refund, by plan, was not readily available for the years prior to 2013. This information will continue to be populated until the requisite ten years is displayed.

# BENEFIT AND REFUND DEDUCTIONS FROM FIDUCIARY NET POSITION **DEFINED BENEFIT PLANS**

BY TYPE (continued)

## LAST TEN FISCAL YEARS

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						Fiscal Year	ır				
		2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Type of Benefit	,	!									
Service retirement benefits	ю	363,478 \$	347,133 \$	312,108 \$		271,025 \$		231,584 \$	215,154 \$	205,545 \$	203,842
Disability benefits		14,629	14,377	19,245		7,994	8,099	7,863	7,863	7,863	3,931
Pre-Retirement death benefits		48,956	37,632	36,192	30,301	29,751		34,641	32,164	32,164	22,600
Total benefits	€9	427,063 \$	399,142 \$	367,545 \$	327,875 \$	308,770 \$	280,254 \$	274,088 \$	255,181 \$	245,572 \$	230,373
Type of Refund											
Death	69	<del>\$</del>	14,720 \$	6,122 \$	11,524 \$	<del>69</del>					
Separation		32,682	55,181	71,664	99,713	8,836	82,768				
Other		,	•	•	•	•	•				
Total refunds	69	32.682 \$	69.901 \$	\$ 982.22	111.237 \$	8.836	82.768 \$	<i>ω</i>	<i>ω</i>	•	
								•			

Data by type of refund, by plan, was not readily available for the years prior to 2013. This information will continue to be populated until the requisite ten years is displayed.

### PLD CONSOLIDATED PLAN

									Fiscal Year	Year					
		2018		2017	2	2016	2015		2014		2013	2012	2011	2010	2009
Type of Benefit															
Service retirement benefits	69	136,330,957 \$ 129,354,921	\$ 17	29,354,921 \$	123	123,607,716 \$	118,281,904 \$	\$ 40	110,537,271 \$		104,017,589 \$	98,259,313 \$	91,247,190 \$	86,778,139 \$	83,423,825
Disability benefits		6,469,460		6,596,584	9	6,954,282	6,994,050	20	7,133,396		6,860,218	6,842,091	6,611,574	6,552,114	7,369,060
Pre-Retirement death benefits		4,715,941		4,461,983	4	4,272,447	4,200,056	999	3,888,590		3,749,705	3,545,207	3,430,103	3,371,865	2,302,840
Total benefits	69	\$ 147,516,358 \$ 140,413,488	\$ 17		134	1,834,445 \$	129,476,0	10 \$	121,559,257	69	114,627,512 \$	108,646,611 \$	101,288,867 \$	\$ 134,834,445 \$ 129,476,010 \$ 121,559,257 \$ 114,627,512 \$ 108,646,611 \$ 101,288,867 \$ 96,702,118 \$ 93,095,725	93,095,725
Type of Refund															
Death	69	574,813	69	\$ 228,577		\$ 99,685	1,141,2	\$ 9/	613,327	69	982,328				
Separation		3,996,714		4,811,501	4	4,495,580	4,797,240	40	4,988,774		5,069,446				
Other *		•				,	43,000,526	929	•						
Total	6	000000000000000000000000000000000000000	6	6 750 070 \$		0 200 200 :	40,000,0	6	\$ 124 50 50 50 50 50 50 50 50 50 50 50 50 50	6	6 051 774 \$	6	6	6	
lotal returns	9	17C'T/C'+	9	9,790,067,6	ď	\$ ccz,cou,c	40,323,0	9 74	2,002,101	9	0,U31,14 \$	9			

Refunds in fiscal year 2015 reflect the return of approximately \$43 million of non-Plan cash being managed by the System on behalf of PLD Consolidated Plan employers.

Data by type of refund, by plan, was not readily available for the years prior to 2013. This information will continue to be populated until the requisite ten years is displayed.

### BENEFIT AND REFUND DEDUCTIONS FROM FIDUCIARY NET POSITION DEFINED BENEFIT PLANS BY TYPE (continued)

## LAST TEN FISCAL YEARS

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						Fiscal Year	±				
		2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Type of Benefit Service retirement benefits Disability benefits	€9	2,788,425 \$ 2,777,307 \$	2,777,307 \$	2,779,624 \$	2,779,624 \$ 2,780,492 \$	2,702,486 \$	2,644,060 \$	2,644,060 \$ 2,608,985 \$ 2,442,356 \$	2,442,356 \$	2,397,937 \$	2,688,954 6,525
Pre-Retirement death benefits											•
Total benefits	₩	2,788,425 \$ 2,777,307 \$	2,777,307 \$	2,779,624 \$	2,780,492 \$	2,779,624 \$ 2,780,492 \$ 2,702,486 \$ 2,644,060 \$ 2,608,985 \$ 2,442,356 \$ 2,397,937 \$ 2,695,479	2,644,060 \$	2,608,985 \$	2,442,356 \$	2,397,937 \$	2,695,479
Type of Refund Death	69	•	,	,	,	•					
Separation		•	•	•			•				
Other		•			•	1,897,634	•				
Total refunds	↔				<b>⇔</b>	1,897,634 \$	•	•	•		•

Data by type of refund, by plan, was not readily available for the years prior to 2013. This information will continue to be populated until the requisite ten years is displayed.

PENSION COMBINED								Fiscal Year	Š	ar						
		2018		2017	2016		2015	2014		2013	2012		2011	2010	2009	6
Type of Benefit Service retirement benefits Disability benefits Deep Disability benefits	₩	892,184,190 \$ 854,190,558 31,271,605 32,843,057	69	854,190,558 \$ 32,843,057	813,719,565 33,769,256	€9	782,849,118 \$ 34,865,317	\$ 738,713,955 36,097,330	69	714,823,347 \$ 37,020,969	670,87 77,86	670,876,190 \$ 36,778,342	625,577,708 \$ 36,289,227	595,870,176 \$ 35,862,703	5	64,341,497 45,703,611
Total benefits	₩	946,934,023	69	\$ 946,934,023 \$ 909,691,572 \$	869,200	1,702 \$	839,260,478 \$	795,296,626	69	\$ 0,015,004	727,21	4,247 \$	21,121,001 21,040,045 20,1400,441 20,010,044 15,000,000 \$ 727,214,247 \$ 681,156,469 \$ 650,734,368 \$ 622,604,996	650,734,368	\$ 622,60	04,996
Type of Refund Death	69	3,654,240 \$	69	5,326,407 \$	3,374,567	1,567 \$	4,272,805 \$	\$ 3,860,908	69	4,937,513 \$	4,40	4,406,322 \$	5,139,665 \$	2,533,464	69	4,833,774
Separation Other*		18,934,271		18,369,844	18,595,020	5,020	21,209,100 43,000,526	23,434,426		19,088,284	21,00	21,003,032 18,733,381	20,567,589 6,496,738	18,099,434 2,462,834	"	38,700,530 2,077,637
Total refunds	ω	22,588,511 \$ 23,696,251	69	23,696,251 \$	21,969	\$ 285'	68,482,431 \$	\$ 29,192,968	69	24,025,797 \$	44,14	2,736 \$	21,969,587 \$ 68,482,431 \$ 29,192,968 \$ 24,025,797 \$ 44,142,736 \$ 32,203,992 \$ 23,095,732 \$ 45,611,942	23,095,732	\$ 45,63	11,942

<sup>\*</sup> Refunds in fiscal year 2015 reflect the return of approximately \$43 million of non-Plan cash being managed by the System on behalf of PLD Consolidated Plan employers.

Data by type of refund, by plan, was not readily available for the years prior to 2013. This information will continue to be populated until the requisite ten years is displayed.

1,394,586 1,394,586

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1,530,346 1,530,346

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### BENEFIT AND REFUND DEDUCTIONS FROM FIDUCIARY NET POSITION GROUP LIFE INSURANCE PLAN BY TYPE (concluded)

## LAST TEN FISCAL YEARS \*

# GROUP LIFE INSURANCE PLAN - ACTIVE EMPLOYEES

		Fiscal Year	ar	
		2018	2017	
Type of Benefit **				
Basic active claims	છ	2,118,390 \$	1,717,860	
Supplemental claims		1,758,000	1,886,684	
Dependent claims		237,500	182,500	
Accidental Death & Dismemberment claims		000'09	309,000	
		4,173,890	4,096,044	
Conversion expense		55,478	53,235	
Total benefits	ક	4,229,368 \$	4,149,279	
GROUP LIFE INSURANCE PLAN - STATE EMPLOYEE & TEACHER RETIREES		Fiscal Year	ař	
		2018	2017	
Type of Benefit **				

# GRO

		local lead	2
		2018	2017
Type of Benefit **			
Basic retiree claims	ક	7,269,809 \$ 6,003,967	6,003,967
Total benefits	\$	7,269,809 \$ 6,003,967	6,003,967
GROUP LIFE INSURANCE PLAN - PLD RETIREES			
		Fiscal Year	ar
		2018	2017

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Basic retiree claims Type of Benefit \*\*

Total benefits

<sup>\*</sup> The System currently has this information available for the years indicated. Additional information will be added to the schedule each year until the requisite ten years is obtained.

<sup>\*\*</sup> Benefit amounts displayed in 2018 include the cost of third-party processing activities.

### LAST TEN FISCAL YEARS

STATE EMPLOYEE AND TEACHER PLAN

Retirement Effective Dates July 1, 2012 - June 30, 2018*				<u>Yea</u>	rs of	Creditable Se	rvice					
D : 17/4/00471 0/00/0040		Less than 5	5-10	10-15		<u>15-20</u>		20-25		25-30	G	Freater than 30
Period 7/1/2017 to 6/30/2018 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	159 9,253 1,334	\$ 497 32,389 1,413	830 34,666 2,812		1,292 38,544 2,664		1,889 42,761 3,454		2,205 45,081 6,836		3,165 51,936 9,672
Period 7/1/2016 to 6/30/2017		1,334	1,413	2,012		2,004		3,434		0,030		9,072
Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	165 9,821 1,198	\$ 493 32,228 1,345	\$ 806 33,672 2,744	\$	1,265 37,623 2,544		1,857 41,937 3,402	\$	2,163 44,336 6,767		3,108 50,999 9,415
Period 7/1/2015 to 6/30/2016 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	170 10,649 1,070	\$ 485 32,076 1,259	\$ 780 32,842 2,663		1,229 36,832 2,467	\$	1,806 40,960 3,331		2,105 43,503 6,670		3,040 50,158 9,164
Period 7/1/2014 to 6/30/2015 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	178 11,307 930	\$ 472 31,831 1,182	755 31,809 2,550	\$	1,188 35,631 2,332		1,757 40,059 3,283		2,050 42,711 6,569		2,970 49,231 8,889
Period 7/1/2013 to 6/30/2014 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	189 12,446 786	\$ 463 31,627 1,105	\$ 725 30,576 2,426	\$	1,153 34,457 2,245	-	1,715 38,903 3,215	-	2,002 41,888 6,430	-	2,907 48,257 8,586
Period 7/1/2012 to 6/30/2013 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	210 40,079 650	\$ 465 33,962 1,009	\$ 708 30,962 2,319	\$	1,139 33,820 2,160	-	1,700 38,005 3,123	\$	1,987 41,170 6,337		2,877 47,284 8,360

<sup>\*</sup>This table will continue to be populated until the requisite ten years of data is presented.

JU	DI	CI	AL	PL	.AN

Retirement Effective Dates July 1, 2012 - June 30, 2018*					<u>Yea</u>	rs of	Creditable Se	rvice				
		Less than 5	<u>5-10</u>		10-15		<u>15-20</u>		20-25	25-30	9	Greater than 30
Period 7/1/2017 to 6/30/2018 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	562 13,088 7	\$ 1,778 55,919 13	\$	3,985 78,254 14	\$	4,037 92,037 19	\$	4,779 97,926 8	\$ 5,615 110,586 9	\$	5,293 111,931 5
Period 7/1/2016 to 6/30/2017 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	442 10,273 6	1,729 57,420 12		4,358 84,234 12		4,244 89,784 20		4,738 103,183 5	\$ 5,586 110,586 9	\$	
Period 7/1/2015 to 6/30/2016 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	440 10,273 6	\$ 1,707 57,420 12	\$	4,317 84,234 12	\$	4,199 87,575 19		4,696 103,183 5	\$ 5,542 110,586 9	\$	5,229 111,931 5
Period 7/1/2014 to 6/30/2015 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	388 17,129 4	\$ 1,689 57,420 12	\$	4,606 79,169 13	\$	4,154 86,262 15	\$	4,655 103,183 5	\$ 5,499 110,586 9	\$	5,190 111,931 5
Period 7/1/2013 to 6/30/2014 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	315 8,279 1	\$ 1,590 54,733 9	\$	4,861 78,970 15		4,000 84,290 12		4,621 103,183 5	\$ 5,464 110,586 9	\$	5,164 111,931 5
Period 7/1/2012 to 6/30/2013 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	315 118,269 1	\$ 1,623 112,541 5	-	5,070 87,240 17	\$	4,229 93,463 9	\$	4,750 110,809 6	\$ 5,464 110,586 9	\$	

<sup>\*</sup>This table will continue to be populated until the requisite ten years of data is presented.

(continued)

### LAST TEN FISCAL YEARS

1 F	GISI	ΔTI	/F I	PLAN

Retirement Effective Dates July 1, 2012 - June 30, 2018*						<u>Yea</u>	rs of	Creditable Se	rvice				
		Less than 5		<u>5-10</u>		<u>10-15</u>		<u>15-20</u>		20-25	25-30	G	reater than 30
Period 7/1/2017 to 6/30/2018 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	86 9,777 23	\$	166 12,318 104	\$	274 12,388 17	\$	351 14,665 4	\$	- 0	\$ - - 0	\$	- - 0
Period 7/1/2016 to 6/30/2017 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	82 9,646 23		161 12,109 105	_	279 12,284 16	\$	363 14,900 3	\$ \$	- - 0	\$ - - 0	\$	- - 0
Period 7/1/2015 to 6/30/2016 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	80 10,120 23	-	159 12,078 97	\$	263 11,681 14	-	402 12,773 3	-	- - 0	\$ - - 0	\$	- - 0
Period 7/1/2014 to 6/30/2015 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	79 10,270 24	\$	155 11,994 96	\$	254 11,153 16	-	382 13,204 4	\$	- - 0	\$ - - 0	\$	- - 0
Period 7/1/2013 to 6/30/2014 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	67 9,603 22	\$	149 11,643 84	\$	247 11,138 14		374 13,204 4	-	- - 0	\$ - - 0	\$	- 0
Period 7/1/2012 to 6/30/2013 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	69 18,728 24	\$	148 11,778 87	\$	256 11,339 11	\$	374 13,204 4	\$	- - 0	\$ - - 0	\$	- - 0

<sup>\*</sup>This table will continue to be populated until the requisite ten years of data is presented.

PLD	CONS	OLIDA	TED	PLAN

Retirement Effective Dates												
July 1, 2012 - June 30, 2018*					Year	rs of	Creditable Se	rvice				
		Less than 5	5-10		10-15		15-20		20-25	25-30	G	reater than 30
Period 7/1/2017 to 6/30/2018 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	145 7,736 1,639	\$ 545 24,418 1,451	\$	820 29,145 1,329	\$	1,350 35,125 1,331		1,923 37,357 1,326	\$ 2,337 43,630 994	\$	3,152 48,843 579
Period 7/1/2016 to 6/30/2017 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	139 7,669 1,478	\$ 528 24,049 1,297	\$	790 28,550 1,271	\$	1,307 34,100 1,276	\$	1,859 35,609 1,233	2,268 42,422 1,008	\$	3,064 47,585 599
Period 7/1/2015 to 6/30/2016 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	138 7,707 1,328	\$ 511 23,663 1,176		748 27,128 1,201	\$	1,281 33,490 1,252		1,809 33,885 1,139	\$ 2,228 41,686 1,031	\$	3,015 47,280 618
Period 7/1/2014 to 6/30/2015 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	139 7,777 1,186	\$ 497 23,320 1,050	\$	727 26,728 1,130	\$	1,256 32,942 1,167		1,797 32,952 1,090	\$ 2,206 41,008 1,037	\$	3,004 46,870 638
Period 7/1/2013 to 6/30/2014 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	139 8,018 1,007	\$ 471 23,316 926	-	675 25,525 1,064	\$	1,178 31,381 1,046		1,748 31,737 1,072	\$ 2,138 40,026 1,063		2,919 46,278 656
Period 7/1/2012 to 6/30/2013 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	136 39,573 882	\$ 449 35,552 779	\$	629 28,806 1,002	\$	1,103 36,407 906	\$	1,710 32,317 1,083	\$ 2,086 39,707 1,076	\$	2,858 46,137 656

<sup>\*</sup>This table will continue to be populated until the requisite ten years of data is presented.

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(concluded)

### LAST TEN FISCAL YEARS

PLD AGENT PLAN

Retirement Effective Dates						V		. C						
July 1, 2012 - June 30, 2018*						<u>rea</u>	rs or	f Creditable Se	IVICE	2				
Period 7/1/2017 to 6/30/2018		Less than 5		<u>5-10</u>		<u>10-15</u>		<u>15-20</u>		20-25		<u>25-30</u>	9	Greater than 30
Average Monthly Benefit	\$	59	\$	351		540	-	874	-	1,843		2,247		2,591
Average Final Salary Number of Service Retirees	\$	1,858 26	\$	14,768 4	\$	17,146 16	\$	25,602 18	\$	31,931 31	\$	39,102 33	\$	46,194 23
Period 7/1/2016 to 6/30/2017														
Average Monthly Benefit Average Final Salary	\$ \$	60 1,988	\$ \$	340 15,590	\$	505 15,597	\$	846 24,795	\$	1,815 31,931	\$	2,216 38,813	\$	2,576 46,217
Number of Service Retirees		24	•	5	•	19	•	20		31	•	33	Ť	22
Period 7/1/2015 to 6/30/2016 Average Monthly Benefit	\$	49	\$	337	\$	501	æ	839	\$	1.816	Œ	2,221	¢	2,523
Average Final Salary	\$	1,915		15,644	-	15,294	\$	24,795	-	31,502	\$	38,440	\$	46,217
Number of Service Retirees		23		5		19		20		33		31		22
Period 7/1/2014 to 6/30/2015							_							
Average Monthly Benefit Average Final Salary	\$ \$	45 1.609	\$	337 15.644	\$	455 13.693	\$	837 24.755	\$	1,820 31.406	\$	2,189 36.887	\$	2,501 45,304
Number of Service Retirees	Ψ	21	Ψ	5	Ψ	21	Ψ	20	Ψ	33,400	Ψ	33	Ψ	21
Period 7/1/2013 to 6/30/2014			_						_					
Average Monthly Benefit Average Final Salary	\$ \$	45 1,661	\$	275 16.653	\$	457 13,692	\$	833 24,627	\$	1,795 30,255	\$	2,118 36,436	\$	2,483 45,304
Number of Service Retirees	Φ	20	Ф	10,055	Ф	23	Ф	22,027	Ф	34	Ф	34,430	Ф	45,304
Period 7/1/2012 to 6/30/2013														
Average Monthly Benefit	\$ \$	37 39.810	\$ \$		\$		\$	797 26.695	\$	1,748	\$	2,065 35.644	\$	2,319
Average Final Salary Number of Service Retirees	<b>Þ</b>	39,810	Ф	20,825 4	Ф	13,898 25	Þ	20,095	Ф	29,884 35	\$	35,644	\$	42,989 19

<sup>\*</sup>This table will continue to be populated until the requisite ten years of data is presented.

(concluded)

### LAST TEN FISCAL YEARS

### ALL DEFINED BENEFIT PENSION PLANS, COMBINED

Retirement Effective Dates July 1, 2008 - June 30, 2018						<u>Yea</u>	rs of	Creditable Se	rvice					
		Less than 5		<u>5-10</u>		<u>10-15</u>		<u>15-20</u>		20-25		25-30	9	Greater than 30
Period 7/1/2017 to 6/30/2018 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	173 8,388 2,998	\$	530 27,950 2,975	\$	839 32,915 4,177	\$	1,326 37,612 4,024		1,906 41,281 4,823	\$		\$	3,164 51,762 10,286
Period 7/1/2016 to 6/30/2017 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	172 8,593 2,701		518 27,750 2,757	\$	812 32,079 4,047		1,295 36,657 3,853	\$	1,863 40,248 4,675	\$	2,181 44,131 7,821		3,105 50,799 10,048
Period 7/1/2015 to 6/30/2016 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	172 8,943 2,425	-	504 27,562 2,538	\$	782 31,106 3,899	-	1,262 35,902 3,748		1,812 39,162 4,510	-		\$	3,038 49,980 9,818
Period 7/1/2014 to 6/30/2015 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	173 8,697 2,143	\$	490 27,354 2,340	\$	759 30,250 3,719	\$	1,222 34,875 3,529	\$	1,772 38,303 4,410	\$	2,077 42,528 7,652	\$	2,973 49,081 9,561
Period 7/1/2013 to 6/30/2014 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	179 9,877 1,821	\$	470 27,332 2,123	-	727 29,082 3,537		1,168 33,579 3,320	\$	1,728 37,127 4,328	\$	-,	\$	2,908 48,133 9,274
Period 7/1/2012 to 6/30/2013 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	364 28,688 440	\$	433 30,446 1,482	\$	681 28,554 3,112	-	1,105 32,680 2,860	\$	1,698 36,429 4,288	\$		\$	2,881 47,413 9,194
Period 7/1/2011 to 6/30/2012 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	647 25,200 568	\$	427 59,515 1,402	-	671 27,199 3,013	-	1,083 31,429 2,777	-	1,678 35,443 4,182	\$	-1	\$	2,845 46,386 8,863
Period 7/1/2010 to 6/30/2011 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$	419 26,382 551	\$	399 27,791 1,276	\$	636 25,452 2,913	\$	1,035 29,842 2,681	\$	1,599 34,108 4,083	\$	1,877 38,836 7,060	\$	2,681 44,693 8,221
Period 7/1/2009 to 6/30/2010 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$	617 25,338 559	\$	388 26,322 1,175	\$	617 23,944 2,819	-	1,016 28,556 2,594	\$	1,583 32,700 3,898	\$	1,867 37,655 6,782	\$	2,653 43,265 7,868
Period 7/1/2008 to 6/30/2009 Average Monthly Benefit Average Final Salary Number of Service Retirees	\$ \$		\$	398 24,858 1,132	\$	616 22,828 2,810	-	1,017 27,456 2,570	\$	1,625 31,630 3,827	\$	1,907 36,735 6,657	\$	2,737 42,107 7,501

### DEFINED BENEFIT PLANS RETIRED MEMBERS BY TYPE OF BENEFIT AND OPTION As of June 30, 2018

### STATE EMPLOYEES AND TEACHER PLAN

			Type of Retire	ment Benef	it				Bei	nefit Option	Selected *				
Amount of Monthly Benefit	Number of Retired Members	Service Retiree	Beneficiary	Disability	Pre-Retire Death Benefit	Full Benefit to Retiree	1	2	3	4	5	6	7	8	Other
\$0 - \$250	2,297	1,366	884	23	24	659	230	271	61	24	637	98	34	47	236
\$251 - \$500	2,815	1,316	1,359	11	129	686	206	256	80	14	1,035	91	22	31	394
\$501 - \$750	3,102	1,469	1,133	27	473	774	209	257	105	18	868	108	31	36	696
\$751 - \$1,000	2,196	1,491	662	43	-	768	207	254	150	22	435	81	35	57	187
\$1,001 - \$1,250	2,202	1,654	474	74	-	817	207	237	150	23	387	99	44	48	190
\$1,251 - \$1,500	2,257	1,785	372	100	-	854	237	214	132	10	407	114	55	62	172
\$1,501 - \$1,750	2,448	1,981	294	173	-	918	298	268	116	23	421	91	56	65	192
\$1,751 - \$2,000	2,646	2,173	281	192	-	1,004	304	279	130	25	467	109	68	76	184
Over \$2,001	15,638	13,917	756	965	-	6,920	1,881	1,496	699	300	1,770	607	565	688	712
Totals	35,601	27,152	6,215	1,608	626	13,400	3,779	3,532	1,623	459	6,427	1,398	910	1,110	2,963

### JUDICIAL PLAN

			Type of Retire	ment Benefit					Ве	enefit Option	n Selected *				
					Pre-Retire	Full									
Amount of	Number of	Service			Death	Benefit to									
Monthly Benefit	Retired Members	Retiree	Beneficiary	Disability	Benefit	Retiree	1	2	3	4	5	6	7	8	Other
\$0 - \$250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$251 - \$500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$501 - \$750	1	0	1	. 0	0	0	0	0	0	0	1	0	0	0	0
\$751 - \$1,000	2	0	2	0	0	0	0	0	0	0	1	0	0	0	1
\$1,001 - \$1,250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,251 - \$1,500	2	0	2	0	0	0	0	0	0	0	2	0	0	0	0
\$1,501 - \$1,750	1	0	1	. 0	0	0	0	1	0	0	0	0	0	0	0
\$1,751 - \$2,000	2	1	1	0	0	0	1	0	0	0	0	0	0	0	1
Over \$2,001	67	53	13	1	0	17	3	18	10	3	9	3	0	2	2
Totals	75	54	20	1	0	17	4	19	10	3	13	3	0	2	4

### LEGISLATIVE PLAN

		1	ype of Retire	ment Benefit					Ber	nefit Option	Selected *				
					Pre-Retire	Full									
Amount of	Number of	Service			Death	Benefit to									
Monthly Benefit	Retired Members	Retiree	Beneficiary	Disability	Benefit	Retiree	1	2	3	4	5	6	7	8	Other
\$0 - \$250	158	130	28	0	0	67	13	38	7	0	15	12	1	1	4
\$251 - \$500	19	18	1	0	0	11	2	4	1	0	0	1	0	0	0
\$501 - \$750	8	0	0	2	6	0	0	0	0	0	0	0	0	0	8
\$751 - \$1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,001 - \$1,250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,251 - \$1,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,501 - \$1,750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,751 - \$2,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Over \$2,001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	185	148	29	2	6	78	15	42	8	0	15	13	1	1	12

Full Benefit to Retiree: provides the highest benefit to the retiree; there is no benefit provided for a beneficiary(ies)

- Option 1: the monthly benefit is reduced, and remaining contributions and interest, if any, are paid to a beneficiary(ies) upon retiree's death in a one-time, lump-sum payment
- Option 2: the monthly benefit is reduced, and the same monthly benefit is paid to a beneficiary(ies) upon the retiree's death
- Option 3: the monthly benefit is reduced, and one-half of the monthly benefit is paid to a beneficiary(ies) upon the retiree's death
- Option 4: the monthly benefit is reduced, and a retiree-designated percentage of the monthly benefit is paid to a beneficiary(ies) upon the retiree's death
- Option 5: the monthly benefit is split (up to 49%) with a beneficiary(ies) while both the retiree and beneficiary(ies) are living; upon death of either, the other receives the higher benefit for the remainder of his/her life
- Option 6: similar to Option 2, except the retiree's monthly benefit will increase to the Full Benefit amount in the event the beneficiary(ies) dies before the retiree
- Option 7: similar to Option 3, except the retiree's monthly benefit will increase to the Full Benefit amount in the event the beneficiary(ies) dies before the retiree
- Option 8: similar to Option 4, except the retiree's monthly benefit will increase to the Full Benefit amount in the event the beneficiary(ies) dies before the retiree
- Other: default option for specific circumstances such as disability benefits, survivor benefits, and qualified domestic relations order benefits

<sup>\*</sup> There are eight options available to retirees for their monthly retirement benefit:

### DEFINED BENEFIT PLANS RETIRED MEMBERS BY TYPE OF BENEFIT AND OPTION As of June 30, 2018

(concluded)

### PLD CONSOLIDATED PLAN

		1	ype of Retire	ment Benef	fit				Ber	nefit Option	Selected *				
					Pre-Retire	Full									
Amount of	Number of	Service			Death	Benefit to									
Monthly Benefit	Retired Members	Retiree	Beneficiary	Disability	Benefit	Retiree	1	2	3	4	5	6	7	8	Other
\$0 - \$250	1,507	995	483	22	7	524	134	190	62	16	316	66	29	40	130
\$251 - \$500	1,153	668	441	14	30	295	131	197	48	8	304	40	12	11	107
\$501 - \$750	1,162	660	350	19	133	283	118	167	56	8	242	42	16	19	211
\$751 - \$1,000	784	534	222	28	-	236	75	126	55	7	139	34	14	15	83
\$1,001 - \$1,250	692	509	149	34	-	205	89	122	40	7	100	43	11	11	64
\$1,251 - \$1,500	563	418	117	28	-	160	69	93	17	3	108	30	14	9	60
\$1,501 - \$1,750	524	415	70	39	-	139	60	93	25	5	113	26	10	5	48
\$1,751 - \$2,000	499	385	59	54	1	163	56	61	22	3	107	21	8	11	47
Over \$2,001	2,372	2,088	128	155	1	782	252	350	126	44	374	155	76	65	148
Totals	9,256	6,672	2,019	393	172	2,787	984	1,399	451	101	1,803	457	190	186	898

### PLD AGENT PLAN

		1	Type of Retire	ement Benef	it				В	enefit Optio	n Selected '	•			
					Pre-Retire	Full									
Amount of	Number of	Service			Death	Benefit to									
Monthly Benefit	Retired Members	Retiree	Beneficiary	Disability	Benefit	Retiree	1	2	3	4	5	6	7	8	Other
\$0 - \$250	16	10	) 6	0	0	6	1	4	1	0	4	0	0	0	0
\$251 - \$500	25	8	17	0	0	4	1	1	2	0	16	1	0	0	0
\$501 - \$750	27	15	12	0	0	7	5	2	1	0	11	0	0	0	1
\$751 - \$1,000	12	5	7	0	0	1	0	3	2	0	2	0	0	0	4
\$1,001 - \$1,250	14	12	2	0	0	5	0	2	1	1	3	0	2	0	0
\$1,251 - \$1,500	10	9	1	0	0	3	0	1	2	0	2	1	0	1	0
\$1,501 - \$1,750	14	13	1	0	0	3	2	3	0	1	3	0	0	1	1
\$1,751 - \$2,000	4	4	0	0	0	1	0	2	0	0	1	0	0	0	0
Over \$2,001	48	45	3	0	0	7	3	8	4	1	21	4	0	0	0
Totals	170	121	. 49	0	0	37	12	26	13	3	63	6	2	2	6

Full Benefit to Retiree: provides the highest benefit to the retiree; there is no benefit provided for a beneficiary(ies)

<sup>\*</sup> There are eight options available to retirees for their monthly retirement benefit:

Option 1: the monthly benefit is reduced, and remaining contributions and interest, if any, are paid to a beneficiary(ies) upon retiree's death in a one-time, lump-sum payment

Option 2: the monthly benefit is reduced, and the same monthly benefit is paid to a beneficiary(ies) upon the retiree's death

Option 3: the monthly benefit is reduced, and one-half of the monthly benefit is paid to a beneficiary(ies) upon the retiree's death

Option 4: the monthly benefit is reduced, and a retiree-designated percentage of the monthly benefit is paid to a beneficiary(ies) upon the retiree's death

Option 5: the monthly benefit is split (up to 49%) with a beneficiary(ies) while both the retiree and beneficiary(ies) are living; upon death of either, the other receives the higher benefit for the remainder of his/her life

Option 6: similar to Option 2, except the retiree's monthly benefit will increase to the Full Benefit amount in the event the beneficiary(ies) dies before the retiree

Option 7: similar to Option 3, except the retiree's monthly benefit will increase to the Full Benefit amount in the event the beneficiary(ies) dies before the retiree

Option 8: similar to Option 4, except the retiree's monthly benefit will increase to the Full Benefit amount in the event the beneficiary(ies) dies before the retiree

Other: default option for specific circumstances such as disability benefits, survivor benefits, and qualified domestic relations order benefits

Fiscal Year

# EMPLOYEE CONTRIBUTION RATES

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Judges	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%
Legislators	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%
School Teacher Employees	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%
State of Maine Employees Employee Class:										
General	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%
Police - Grandfathered	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
Marine Wardens - Grandfathered	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
Game Wardens - Grandfathered	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
Prison Wardens - Grandfathered	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
Forest Rangers - Grandfathered	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
1998 Special Plan Groups	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
25-Year/No-Age Special Plan Groups	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
Participating Local District Employees										
Employee Class:										
AC - General COLA	7.50%	7.50%	7.50%	7.00%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
BC - General COLA	4.00%	4.00%	4.00%	3.50%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
1C - Special COLA	7.50%	7.50%	7.50%	7.00%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
2C - Special COLA	7.50%	7.50%	7.50%	7.00%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
3C - Special COLA	9.00%	%00.6	%00.6	8.50%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4C - Special COLA	8.50%	8.50%	8.50%	8.00%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
AN - General No COLA	7.50%	7.50%	7.50%	7.00%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
1N - Special No COLA	7.50%	7.50%	7.50%	7.00%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
2N - Special No COLA	7.50%	7.50%	7.50%	7.00%	%05'9	%05'9	6.50%	6.50%	%05.9	6.50%
3N - Special No COLA	%00.6	9.00%	%00.6	8.50%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4N - Special No COLA	8.50%	8.50%	8.50%	8.00%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%

# EMPLOYER CONTRIBUTION RATES LAST TEN FISCAL YEARS

					Fiscal Year	ear				
'	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Judges	14.94%	14.98%	14.99%	13.24%	13.25%	11.98%	11.99%	14.12%	14.35%	15.85%
Legislators	0.00%	0.00%	%00.0	%00.0	%00.0	%00.0	%00.0	%00.0	0.00%	%00.0
School Teacher Employees	15.05%	13.38%	13.38%	15.68%	15.68%	13.85%	13.85%	17.28%	17.28%	16.72%
State of Maine Employees										
Employee Class:										
General	24.05%	22.69%	22.37%	18.43%	18.14%	14.21%	14.18%	16.92%	16.38%	17.37%
Police - Grandfathered	46.51%	38.56%	38.01%	41.05%	40.43%	39.36%	39.22%	51.26%	50.19%	48.69%
Marine Wardens - Grandfathered	0.00%	40.99%	40.41%	31.62%	31.20%	33.44%	33.33%	54.49%	53.32%	40.67%
Game Wardens - Grandfathered	47.73%	42.18%	41.59%	36.50%	35.98%	38.60%	38.47%	54.48%	53.30%	50.14%
Prison Wardens - Grandfathered	%00.0	27.75%	27.28%	29.51%	29.05%	26.83%	26.74%	27.03%	25.81%	25.68%
Forest Rangers - Grandfathered	24.99%	21.99%	21.64%	22.73%	22.36%	13.69%	13.65%	22.32%	21.84%	22.18%
1998 Special Plan Groups	26.24%	29.16%	28.71%	23.04%	22.65%	17.39%	17.33%	19.06%	18.27%	19.50%
25-Year/No-Age Special Plan Groups	23.48%	23.96%	23.57%	20.42%	20.08%	15.43%	15.38%	24.87%	24.34%	25.00%
Participating Local District Employees										
Employee Class:										
AC - General COLA	%09.6	9.50%	8.90%	7.80%	6.50%	5.30%	4.40%	3.50%	2.80%	2.80%
BC - General COLA	6.10%	6.40%	5.80%	4.70%	3.90%	3.20%	2.70%	2.10%	1.70%	1.70%
1C - Special COLA	15.70%	14.20%	14.00%	13.40%	12.80%	12.20%	10.20%	8.10%	6.50%	%05'9
2C - Special COLA	10.10%	9.10%	8.90%	8.30%	7.90%	7.50%	6.30%	2.00%	4.00%	4.00%
3C - Special COLA	12.20%	11.40%	11.40%	11.00%	10.50%	10.00%	8.30%	%09.9	5.30%	5.30%
4C - Special COLA	8.40%	7.70%	%09'.	7.20%	%06.9	%09.9	5.50%	4.40%	3.50%	3.50%
AN - General No COLA	7.00%	6.50%	2.60%	4.10%	3.40%	2.80%	2.40%	1.90%	1.50%	1.50%
1N - Special No COLA	10.50%	9.30%	8.70%	7.50%	7.10%	%08.9	2.60%	4.50%	3.60%	3.60%
2N - Special No COLA	2.50%	2.60%	5.20%	4.40%	4.20%	4.00%	3.30%	2.60%	2.20%	2.20%
3N - Special No COLA	7.50%	7.40%	7.00%	6.10%	5.80%	2.50%	4.50%	3.60%	2.90%	2.90%
4N - Special No COLA	3.90%	4.60%	4.40%	4.00%	3.80%	3.60%	3.00%	2.40%	1.90%	1.90%

2009

# PRINCIPAL PARTICIPATING EMPLOYERS

# CURRENT YEAR AND NINE YEARS AGO

	2018			
Participating Entity	Covered Employees	Rank	Percentage of Total System	Participating En
State of Maine	14,320	н	25.02%	State of Maine
Maine Veterans Home	1,431	2	2.50%	Maine Veterans Home
Portland School Department	1,240	က	2.17%	Portland School Departn
Lewiston School Department	950	4	1.66%	Portland, City of
Portland, City of	923	2	1.61%	Lewiston School Departr
Bangor School Department	578	9	1.01%	Bangor School Departme
Regional School Unit #6	552	7	0.96%	Auburn School Departme
Auburn School Department	250	œ	0.96%	MSAD #75 Topsham
South Portland School Department	536	6	0.94%	MSAD #6 Bar Mills
Regional School Unit #14	499	10	0.87%	South Portland School D
All Others *	35,665	11	62.30%	All Others *
Total (550 Participating Entities)	57,244		100.00%	Total (605 Participating E

Participating Entity	Covered Employees	Rank	Percentage of Total System
State of Maine	15,651	Н	26.23%
Maine Veterans Home	1,309	2	2.19%
Portland School Department	1,242	က	2.08%
Portland, City of	802	4	1.34%
Lewiston School Department	786	2	1.32%
Bangor School Department	672	9	1.13%
Auburn School Department	652	7	1.09%
MSAD #75 Topsham	298	8	1.00%
MSAD #6 Bar Mills	556	6	0.93%
South Portland School Department	519	10	0.87%
All Others *	36,872	11	61.82%
 Total (605 Participating Entities)	59,659		100.00%

\* "All Others" includes employees covered under two or more employer types. In 2018, "All Others" consisted of:

Participating Local Districts 322 10,653
School Districts 25,012
Total 540 35,665

Note: Covered employees of these employers are eligible to participate in the Defined Benefit Plans administered by MainePERS, which provide normal and disability retirement benefits and certain survivor benefits, as well as benefits under the Group Life Insurance Plan.

Data for this table are derived from the System's pension administration records.

### PARTICIPATING EMPLOYERS, DETAILED LISTING

PROGRAM: STATE EMPLOYEE / TEACHER **RETIREMENT PROGRAM** 

Participants: State Employees **Employer:** State of Maine **Reporting Entity:** State of Maine

Participants: State Employees

**Employers: Various Reporting Entity:** (as follows)

Central Maine Community College Eastern Maine Community College Kennebec Valley Community College Northern Maine Community College Southern Maine Community College Washington County Community College York County Community College

Maine Community College System - Administration Maine Community College - Career Advantage MECDHH/Governor Baxter School for the Deaf

Maine Dairy & Nutrition Council

Maine Developmental Disabilities Council

Maine Potato Board

Northern New England Passenger Rail Authority

Wild Blueberry Commission of Maine

Participants: **Teachers** 

**Employers:** State of Maine; School Administrative

Units

Reporting Entity: (as follows)

Acton School Department Andover School Department AOS #43 Central Office AOS #43 Howland AOS #43 Milo

AOS #47 Central Office AOS #47 Dedham AOS #47 Orrington AOS #77 Alexander AOS #77 Central Office AOS #77 Charlotte AOS #77 Eastport AOS #77 Lubec

AOS #77 Pembroke AOS #77 Perry AOS #77 Robbinston AOS #90 Baileyville AOS #90 Central Office

AOS #90 East Range

AOS #90 Lee AOS #90 Princeton AOS #91 Bar Harbor AOS #91 Central Office AOS #91 Cranberry Isle AOS #91 Frenchboro AOS #91 MDI High School

AOS #91 Mt Desert

AOS #91 Southwest Harbor AOS #91 Swans Island AOS #91 Tremont AOS #91 Trenton AOS #92 Central Office

AOS #92 Vassalboro AOS #92 Waterville AOS #92 Winslow AOS #93 Bristol

AOS #93 Central Office AOS #93 Great Salt Bay AOS #93 Jefferson AOS #93 Nobleboro AOS #93 South Bristol AOS #94 Central Office AOS #94 Harmony AOS #94 MSAD 46 AOS #96 Central Office

AOS #96 Cutler

AOS #96 East Machias AOS #96 Jonesboro AOS #96 Machias AOS #96 Machiasport AOS #96 Marshfield AOS #96 Northfield AOS #96 Roque Bluffs AOS #96 Wesley AOS #96 Whiting AOS #96 Whitneyville AOS #98 Boothbay Harbor

AOS #98 Central Office

AOS #98 Edgecomb AOS #98 Georgetown AOS #98 Southport Athens School Department Auburn School Department Augusta School Department Bangor School Department **Biddeford School Department Brewer School Department Brunswick School Department** Calais School Department

Cape Elizabeth School Department Caswell School Department

Chebeague Island School Department

Cherryfield School Department CSD #13 Deer Isle-Stonington

CSD #17 Moosabec CSD #18 Wells-Ogunguit CSD #19 Five Town CSD #8 Airline

**Dayton School Department** 

East Millinocket School Department

**Easton School Department** Ellsworth School Department

**TEACHERS** (continued)

Erskine Academy

**Eustis School Department** Falmouth School Department

**Fayette School Department** 

**Foxcroft Academy** Fryeburg Academy

George Stevens Academy Glenburn School Department

Gorham School Department

Gould Academy

**Greenbush School Department** Hancock School Department Hermon School Department

Indian Island School

Indian Township School

Isle Au Haut School Department Islesboro School Department Kittery School Department

Lamoine School Department

Lee Academy

Lewiston School Department

Lincoln Academy

Lincolnville School Department Lisbon School Department Long Island School Department Madawaska School Department

Maine Central Institute Maine Education Association Maine Indian Education

Maine School of Science & Mathematics

Medway School Department

Milford School Department Millinocket School Department

Monhegan Plantation School Department

MSAD #4 Guilford MSAD #7 North Haven MSAD #8 Vinalhaven MSAD #12 Jackman MSAD #13 Bingham

MSAD #20 Fort Fairfield MSAD #23 Carmel

MSAD #24 Van Buren

MSAD #27 Fort Kent MSAD #28 Camden MSAD #32 Ashland

MSAD #33 St. Agatha

MSAD #42 Mars Hill MSAD #45 Washburn MSAD #53 Pittsfield

MSAD #58 Kingfield MSAD #59 Madison

MSAD #65 Matinicus Northport School Department

Otis School Department

Oxford Hills Technical School MVR #11

Pleasant Point School

Portland School Department

Region 10 Cumberland-Sagadahoc County

Region 2 Southern Aroostook County Region 3 Northern Penobscot County

Region 4 United Technologies Center

Region 7 Waldo County Technical Center

Region 8 Midcoast School of Technology Region 9 School of Applied Technology

RSU #1

RSU #2 KIDS

RSU #3 MSAD #3 Unity

RSU#4 RSU #5

RSU #6 MSAD #6 Bar Mills RSU #9 MSAD #9 Farmington

RSU #10

RSU #11 MSAD #11 Gardiner

**RSU #12 RSU #13** RSU #14

RSU #15 MSAD #15 Gray

RSU #16

RSU #17 MSAD #17 South Paris

**RSU #18** RSU #19 **RSU #20 RSU #21 RSU #22** RSU #23 **RSU #24** 

RSU #25 RSU #26

RSU #29 MSAD #29 Houlton

RSU #34

RSU #35 MSAD #35 Eliot RSU #37 MSAD #37 Harrington

RSU #38

RSU #39 Eastern Aroostook RSU #40 MSAD #40 Waldoboro RSU #44 MSAD #44 Bethel RSU #49 MSAD #49 Fairfield

RSU #50

RSU #51 MSAD #51 Cumberland Center

RSU #52 MSAD #52 Turner RSU #54 MSAD #54 Skowhegan RSU #55 MSAD #55 Cornish

RSU #56

RSU #57 MSAD #57 Waterboro RSU #60 MSAD #60 North Berwick RSU #61 MSAD #61 Bridgton

RSU #63 MSAD #63

RSU #64 MSAD #64 East Corinth RSU #67 MSAD #67 Lincoln RSU #68 MSAD #68 Dover-Foxcroft

RSU #70 MSAD #70

RSU #71

TEACHERS (continued) PROGRAM: PARTICIPATING LOCAL DISTRICT

RETIREMENT PROGRAM

RSU #72 MSAD #72 Fryeburg Employers: PLDs (Active and Withdrawn)

Reporting Entities: (as follows)

RSU #73 RSU #74 MSAD #74 North Anson

RSU #75 MSAD #75 Topsham

RSU #78

RSU #79 MSAD #1 Presque Isle

RSU #84 MSAD #14 Saco School Department Sanford School Department Scarborough School Department School Agent Carrabassett School Agent Coplin Plantation

School Agent Pleasant Ridge Plantation South Portland School Department St. George School Department

Thornton Academy Union 60 Greenville Union 60 Shirley Union 69 Appleton Union 69 Hope Union 76 Brooklin Union 76 Sedgwick Union 93 Blue Hill Union 93 Brooksville Union 93 Castine

Union 93 Penobscot

Union 93 Surry School Department

Union 103 Beals Union 103 Jonesport Union 122 New Sweden Union 122 Westmanland Union 122 Woodland

Vanceboro School Department Veazie School Department Washington Academy

West Bath School Department Westbrook School Department Winthrop School Department Wiscasset School Department Yarmouth School Department

York School Department

Acton, Town of

Androscoggin County

Androscoggin Valley Council of Governments

Anson-Madison Sanitary District

**Aroostook County** 

Auburn Housing Authority Auburn Lewiston Airport Auburn Public Library

Auburn Water And Sewer District

Auburn, City of Augusta, City of

Augusta Housing Authority Baileyville, Town of Bangor Housing Authority Bangor Public Library Bangor Water District Bangor, City of Bar Harbor, Town of Bath Water District

Bath, City of Baxter Academy of Technology and Science

Belfast Water District Belfast, City of

Berwick Sewer District Berwick, Town of Bethel, Town of

**Biddeford Housing Authority** 

Biddeford, City of

Boothbay Harbor, Town of Boothbay Region Water District Boothbay Harbor Sewer District Bowdoinham Water District Brewer Housing Authority

Brewer Housing Authori Brewer, City of Bridgton Water District Brownville, Town of Brunswick Fire & Police

**Brunswick Public Library Association** 

Brunswick Sewer District Brunswick, Town of Buckfield, Town of Bucksport, Town of Calais, City of

Camden, Town of
Cape Elizabeth Police
Caribou Fire & Police
Carrabassett Valley, Town of

Chesterville, Town of Cheverus High School

China, Town of

Coastal Counties Workforce

PROGRAM: LEGISLATIVE RETIREMENT PROGRAM

Participants: Legislators Employer: State of Maine

Reporting Entity: Office of the Executive Director,

Maine Legislature

PROGRAM: JUDICIAL RETIREMENT PROGRAM

Participants: Judges
Employer: State of Maine

Reporting Entity: Administrative Office of the Courts

### **CONSOLIDATED PLAN FOR PLDs** (continued)

Community School District #912 Community School District #918

Corinna Sewer District Corrinna, Town of

Cornville Regional Charter School

Cumberland County Cumberland, Town of Damariscotta, Town of Danforth, Town of Dayton, Town of Dexter, Town of

Dover-Foxcroft Water District Dover-Foxcroft, Town of

Durham, Town of

Eagle Lake Water & Sewer District

East Millinocket, Town of

Easton, Town of Eliot, Town of Ellsworth, City of Erskine Academy Fairfield, Town of

Falmouth Memorial Library

Falmouth, Town of

Farmington Village Corporation

Farmington, Town of Fayette, Town of

Fort Fairfield Housing Authority
Fort Fairfield Utilities District
Fort Fairfield, Town of
Franklin County
Freeport, Town of
Frenchville, Town of
Fryeburg, Town of
Gardiner Water District
Gardiner, City of

Good Will Home Association Gorham Fire and Police Gorham, Town of

Gould Academy
Grand Isle, Town of

Glenburn. Town of

Greater Augusta Utility District

Greenville, Town of
Hallowell, City of
Hampden Water District
Hampden, Town of
Hancock County
Hancock, Town of
Harpswell, Town of
Harrison, Town of
Hartland, Town of

Hermon, Town of Hodgdon, Town of Holden, Town of

Houlton Water Company

Houlton, Town of

Indian Township Tribal Government

Jackman Utility District

Jay, Town of Kennebec County

Kennebec Sanitary Treatment District

Kennebec Water District

Kennebunk Kennebunkport Wells Water District

Kennebunk Light & Power District

Kennebunk Sewer District Kennebunk, Town of Kennebunkport, Town of Kittery Water District Kittery, Town of Knox County Sheriffs Lebanon, Town of Levant, Town of Lewiston Auburn 911

Lewiston Housing Authority

Lewiston, City of

Lewiston-Auburn Water Pollution Control Authority

Limestone, Town of

Lincoln & Sagadahoc Multi-County Jail Authority

Lincoln Academy Lincoln County

Lincoln County Sheriff's Office Lincoln Sanitary District Lincoln Water District Lincoln, Town of Linneus, Town of

Lisbon Water Department

Lisbon, Town of

Livermore Falls Water District Livermore Falls, Town of

Lovell, Town of Lubec Water District Lubec, Town of M.A.D.S.E.C.

Madawaska Water District Madawaska, Town of

Maine Academy of Natural Sciences Maine County Commissioners Association

Maine Maritime Academy Maine Municipal Association Maine Municipal Bond Bank Maine Principals' Association

Maine Public Employees Retirement System Maine School Management Association Maine School of Science and Mathematics

Maine State Housing Authority Maine Turnpike Authority Maine Veterans' Homes Maine Virtual Academy

Mapleton, Castle Hill, & Chapman, Towns of

Mars Hill Utility District Mars Hill, Town of

Mechanic Falls Sanitary District

Mechanic Falls, Town of

Medway, Town of

### **CONSOLIDATED PLAN FOR PLDs** (continued)

Mexico, Town of

Midcoast Council of Governments

Milford, Town of Millinocket, Town of Milo Water District Monmouth. Town of Monson, Town of

Mount Desert Island Regional School District

Mount Desert Water District

MSAD #13 Bingham MSAD #31 Howland MSAD #41 Milo MSAD #53 Pittsfield Mt. Desert, Town of Naples, Town of

New Gloucester, Town of Newport, Town of **Newport Water District** North Berwick Water District North Berwick, Town of

Northern Oxford Regional Solid Waste Board

Norway Water District Norway, Town of Ogunquit, Town of

Old Orchard Beach, Town of Old Town Housing Authority Old Town Water District Old Town, City of Orland, Town of

Orrington, Town of Otis, Town of Otisfield, Town of Oxford County Oxford, Town of Paris Utility District Paris, Town of Penobscot County

Orono, Town of

Penguis

Phippsburg, Town of Piscataguis County Pittsfield, Town of

Pleasant Pt. Passamaquoddy Reservation Housing Authority

Poland, Town of

Portland Housing Authority Portland Public Library Portland, City of Princeton. Town of

Regional School Unit #1 Regional School Unit #2 Regional School Unit #4 Regional School Unit #5 Regional School Unit #9

Regional School Unit #10 Regional School Unit #16

Regional School Unit #20

Regional School Unit #21

Regional School Unit #23 Regional School Unit #24

Regional School Unit #25

Regional School Unit #26

Regional School Unit #29

Regional School Unit #34

Regional School Unit #39

Regional School Unit #49

Regional School Unit #51

Regional School Unit #54

Regional School Unit #56

Regional School Unit #60

Regional School Unit #67

Regional School Unit #71

Regional School Unit #73

**Richmond Utilities District** 

Richmond, Town of Rockland, City of

Rockport, Town of

Rumford Fire & Police

Rumford Mexico Sewerage District

Rumford Water District Rumford, Town of

Sabattus, Town of

Saco, City of

Sagadahoc County

Sanford Housing Authority

Sanford Sewerage District

Sanford Water District

Sanford, City of

Scarborough, Town of

Searsport Water District

Searsport, Town of

Skowhegan, Town of

Somerset County

South Berwick Sewer District

South Berwick Water District

South Berwick, Town of

South Portland Housing Authority

South Portland, City of

St. Agatha, Town of

Thomaston, Town of

Thompson Free Library

**Topsham Sewer District** 

Topsham, Town of

Trenton, Town of

Tri-Community Recycle/Sanitary Landfill

Union, Town of

United Technologies Center, Region 4

Van Buren Housing Authority

Van Buren, Town of Vassalboro, Town of

Veazie Fire & Police

Waldo County

Waldoboro, Town of

Washburn Water and Sewer District

Waldo County Technical Center

### **CONSOLIDATED PLAN FOR PLDs** (continued)

Washburn, Town of

Washington County

Waterboro, Town of

Waterville Fire & Police

Waterville Sewerage District

Wells Fire and Police

Wells, Town of

West Bath, Town of

Westbrook Fire & Police

Westbrook, City of

Westbrook Housing Authority

Wilton, Town of

Windham, Town of

Winslow Police

Winslow, Town of

Winter Harbor Utility District

Winterport Water & Sewer Districts

Winthrop Utilities District

Winthrop, Town of

Wiscasset, Town of

Yarmouth Water District

Yarmouth, Town of

York County

York Sewer District

York Water District

York, Town of

PROGRAM: PARTICIPATING LOCAL DISTRICT

RETIREMENT PROGRAM

PLDs (Non-Consolidated) **Employers:** 

Reporting Entities: (as follows)

Bingham Water District Bridgton, Town of

Cape Elizabeth, Town of

Community School District #903

Fort Kent, Town of

**Knox County** 

Limestone Water & Sewer District

Milo, Town of

New Canada, Town of

Norway-Paris Solid Waste Incorporated

Presque Isle, City of

Western Maine Community Action

