CHEIRON

*Classic Values, Innovative Advice*

# Maine Public Employees Retirement System

# Consolidated Plan for Participating Local Districts

## Actuarial Valuation Report as of June 30, 2019

**Produced by Cheiron**

**October 2019**

www.cheiron.us 1.877.CHEIRON (243.4766)

## TABLE OF CONTENTS

Classic Values, Innovative Advice

October 15, 2019

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

Dear Members of the Board:

We are pleased to submit the June 30, 2019 Actuarial Valuation Report for the Consolidated Plan for Participating Local Districts (Plan) of the Maine Public Employees Retirement System (MainePERS or System).

This report is intended solely for the MainePERS Board and its auditors in preparing financial reports according to applicable law and accounting requirements. This report contains information on assets, liabilities, and contributions of the Plan, as well as the required accounting statement disclosures under the Governmental Accounting Standards Board (GASB) Statement No. 67.

We prepared this report according to 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. This includes the use of assumptions and methods for funding purposes that comply with the Actuarial Standards of Practice.

As credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion 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.

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

The results of this report rely on future Plan experience conforming to the underlying assumptions and methods outlined in this report. Future experience may differ significantly from the current experience because of differences from the anticipated assumptions; changes in assumptions or methods; and changes in Plan provisions or applicable law.

Sincerely,
Cheiron

Gene Kalwarski, FSA, EA
Principal Consulting Actuary

Fiona E. Liston, FSA, EA
Principal Consulting Actuary

Elizabeth Wiley, FSA, EA
Consulting Actuary

## FOREWORD

Cheiron has completed the Actuarial Valuation Report for the Consolidated Plan for Participating Local Districts (Plan) of the Maine Public Employees Retirement System (MainePERS or System) as of June 30, 2019. The purpose of this report is to:

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

2) Indicate trends, both historical and prospective, in the condition of the Plan;

3) Assess and disclose actuarial risks of the Plan;

4) Report on the contribution rates developed in this valuation for the Participating Local Districts (PLDs) and members for Fiscal Year (FY) 2021 in aggregate (Note: the actual contributions to be paid by PLDs and members specific to each Regular and Special Plan within the Plan for FY 2021 will be developed consistent with the ratemaking process of the MainePERS Board of Trustees and provided under separate cover); and

5) Provide specific information required for MainePERS's financial disclosures.

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

**Section I** presents a summary containing our key findings, disclosing important Plan trends in recent years, and providing analysis relating to the future status of the Plan.

**Section II** is a new section that assesses and discloses various actuarial risk measures of the Plan. While much of this information had been disclosed in previous reports, it was combined in this new section with additional disclosures to reflect a new Actuarial Standard of Practice (ASOP 51).

**Section III** contains details on various asset measures, together with pertinent performance measurements.

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

**Section V** develops informational PLD and member contribution rates for the Plan in aggregate for FY 2021. (The actual rates paid specific for each Regular and Special Plan within the Plan are developed consistent with the risk-sharing process of the MainePERS Board of Trustees and provided under separate cover.)

**Section VI** includes financial disclosure information.

Finally, we present appendices containing the following summaries:

- Plan elections that have been made by the participating local districts (PLDs) (Appendix A);
- Plan membership information at the valuation date (Appendix B);
- Major benefit provisions of the Plan and the various Regular and Special Plans included in the Plan (Appendix C);
- Actuarial assumptions and methods used in the current valuation (Appendix D); and
- Terminology used in the Governmental Accounting Standards Board (GASB) disclosures (Appendix E).

### SECTION I – BOARD SUMMARY

## General Comments

Most of the local districts in the State of Maine participate in this Consolidated Plan for Participating Local Districts (Plan). The Plan offers a number of Plan options from which each Participating Local District (PLD) can choose, with each option having its own specific contribution rates to be paid by both the member and the PLD associated with it. Both the member contributions and the PLD contributions are paid as distinct rates that are set by the risk-sharing contribution methodology adopted by the MainePERS Board of Trustees and are applicable to payroll. This June 30, 2019 valuation setting the Fiscal Year (FY) 2021 contribution rates will be the second valuation used as the basis from which member and PLD contribution rates are developed based on this methodology. Prior to the 2018 valuation, the member rates were static and set by the Board, while the PLD rates were established using the previous corridor funding method.

The results of this June 30, 2019 valuation will be used to develop the specific rates for each PLD and members of each Regular and Special Plan within the Plan for FY 2021. These will be provided under separate cover based on the risk-sharing framework. This report develops the Actuarially Determined Plan Total Rate and the Plan-Specific Normal Cost Rates that are the basis of this process to develop the specific rates. The results of this June 30, 2019 valuation will also be used for accounting disclosures.

## Experience from July 1, 2018 through June 30, 2019 (FY 2019)

The Actuarially Determined Plan Total Rate produced by the June 30, 2018 valuation reflecting all Plans within the Consolidated Plan for Participating Local Districts was 18.6%. The equivalent rate produced in this June 30, 2019 valuation is 18.8%. The increase in this rate is attributable to several events, with the most significant being a small gain from investment returns that was more than offset by liability experience losses that consisted primarily of higher salaries than expected and an actual cost of living adjustment (COLA) of 2.50%, greater than the expected 1.91% COLA.

Note that this Total Rate differs from that tracked for the other MainePERS Programs as it reflects contributions from both members and the employers, the PLDs in the case of this Plan. In the other Programs, the employer-only portion of the contribution is reported in the equivalent experience sections. The reason for this difference is in this Plan, the contributions from members change with experience similar to the contributions from employers so it makes sense to track the progress of the total contribution.

As of June 30, 2019 valuation, the Plan has an unfunded actuarial liability (UAL) based on the actuarial value of assets (AVA) of $340.2 million. This represents an increase of $15.2 million from the $325.0 million AVA UAL measured as of June 30, 2018. The specific factors contributing to this change are presented in Table I-1 that follows. This table has separate columns showing the components of the changes in liabilities and investments during FY 2019 as well as their combined effect on the UAL.

## SECTION I – BOARD SUMMARY

**Table I-1**
**(Amounts in Billions)**

| | Liabilities | Assets* | UAL |
|---|---|---|---|
| Value as of June 30, 2018 | $ 3.090 | $ 2.765 | $ 0.325 |
| Expected Change | 0.121 | 0.136 | (0.015) |
| Impact of Assumption Changes | 0.000 | 0.000 | 0.000 |
| Impact of Plan Changes | 0.000 | 0.000 | 0.000 |
| Recognized Investment Gain | 0.000 | 0.018 | (0.018) |
| Recognized Liability Loss | 0.048 | 0.000 | 0.048 |
| Value as of June 30, 2019 | $ 3.259 | $ 2.919 | $ 0.340 |

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

The remainder of this Board Summary section summarizes the Plan's historical trends, provides baseline projections of the Plan's future status, and summarizes the principal results of the valuation. These principal results compare key results between this year's and last year's valuations for member counts, assets and liabilities, and total contribution rates.

## Trends

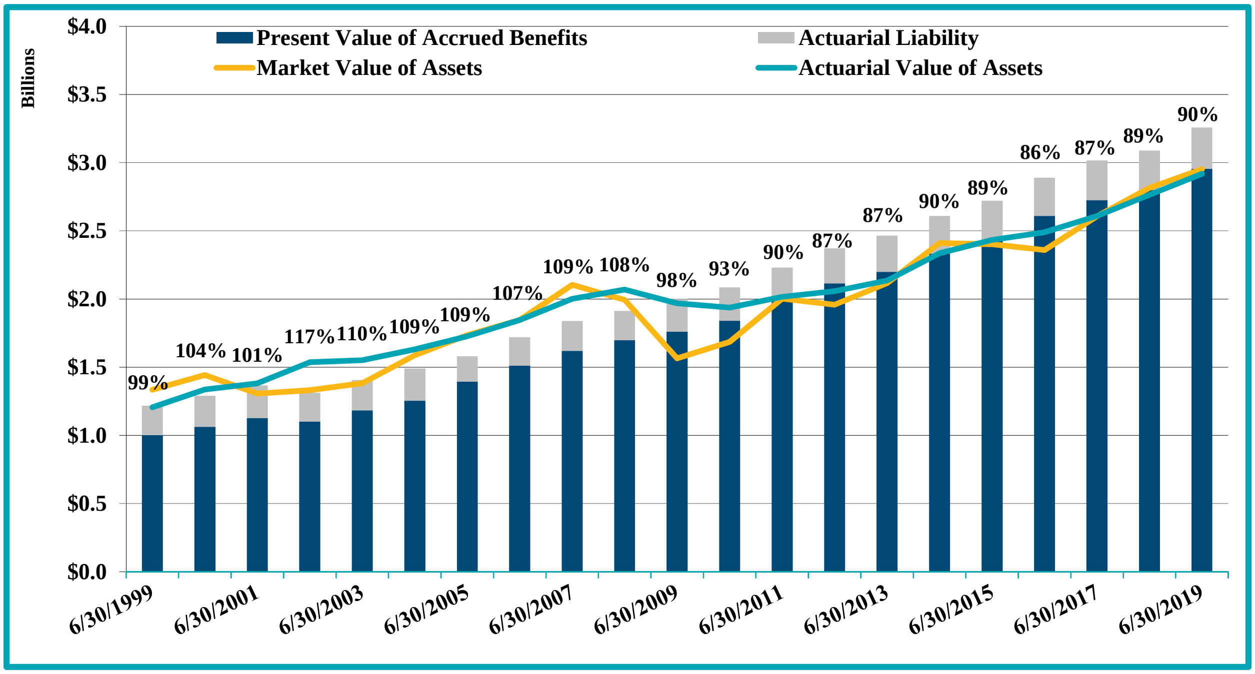
It is important to take a step back from the latest results and view them in the context of the Plan's history. On the next few pages, we present a series of graphs that display key historical trends relating to the Plan's condition. In addition to considering the past, examining future possible trajectories of the Plan is also vital to understanding the current results. Baseline projections are provided in this Board Summary and the potential variability of these results is explored further in the risk section of this report.

Assets and Liabilities

The following graph illustrates the progress of assets and liabilities for the Plan as well as the Plan's funded ratio since June 30, 1999 on an actuarial value of assets (AVA) basis.

Liability measures are shown as bars as of June 30 of the indicated years. The actuarial liability (AL), the liability measure used for the Plan's funding purposes, is represented by the top of the grey bars. The blue bars represent the present value of accrued benefits (PVAB). Measures of the assets are shown as lines. The AVA is shown with a teal line while the market value of assets (MVA) is shown as a yellow line. The AVA divided by the AL is the AVA funded ratio that is often used in evaluating the Plan's financial status. These values of this metric as of each valuation date are shown as the percentages in the graph labels.

## SECTION I – BOARD SUMMARY



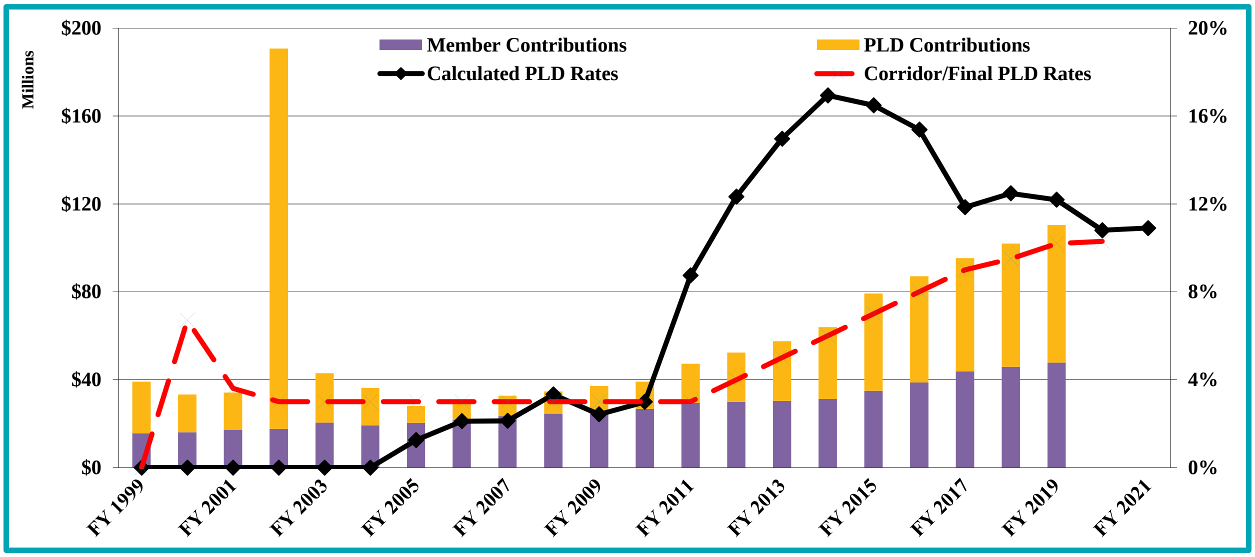

This graph shows that the Plan had its highest AVA funded ratio (117%) over the period shown at June 30, 2002, which was just after several PLDs paid off their Initial Unpooled Unfunded Actuarial Liabilities (IUUALs). After that, the funded ratio was relatively stable around 107-110% until the financial market events of 2008-2009 resulted in the ratio dropping below 100%. Following that drop, the ratio stabilized beginning June 30, 2011 and has stayed in the range of 87-90% since that time. This graph does not show the ratio of the market value of assets (MVA) to AL, but this was actually as low as 78% as of the June 30, 2009 valuation. However, the market recovery combined with the increasing contribution rates for both PLDs and members has resulted in improvements in this measure as well, with the MVA funded ratio reaching 91% with this valuation.

Contributions

The next graph shows the history of contributions to the Plan, both as dollar amounts and as percentages of payroll. The bars in this graph show the contributions made by both the PLDs and the members in dollar terms for each fiscal year (FY) as indicated by the horizontal axis since 1999. These bars are read using the left-hand axis. Through FY 2019, the black line shows the actuarially calculated total pooled PLD contribution rate as a percentage of payroll for the FY indicated. Beginning with FY 2020, the amount shown by the black line is the Aggregate Actuarially Determined PLD Rate. While the Aggregate Final PLD rate, which corresponds with the rates that will actually be paid, for FY 2021 that will be produced by this valuation is not yet available, this Aggregate Actuarially Determined PLD rate for FY 2021 is developed within this report. As such, this black line is provided through FY 2021. Similarly, the red dotted line in this graph shows the aggregate corridor contribution rate actually in effect for each year through FY 2019 and then shows the Aggregate Final PLD Rate, which reflects all adjustments to the

## SECTION I – BOARD SUMMARY

Actuarially Determined PLD rate from the risk-sharing framework, beginning with FY 2020. As the FY 2021 Aggregate Final PLD rate that will be produced by this valuation reflecting this framework is not yet available and will be provided under separate cover, we have ended this red line with the FY 2020 rate. Both the red and black lines are read using the right-hand axis.




The significant increase in the total calculated rate from FY 2010 to FY 2014 was due primarily to investment losses sustained in the 2008-09 market events. The increases in the aggregate corridor rate during this period combined with benefit changes made progress to close the gap between these two rates through FY 2019, the last year that the method used to determine the actual contributions paid by the PLDs was the corridor method. Beginning with FY 2020, the calculated rate is determined with the risk-sharing framework and remains slightly above the actual final PLD rates being paid. It is anticipated as the risk-sharing framework is fully phased in, the rates being actually paid, shown with the red line, will converge with the calculated rates given by the black line.

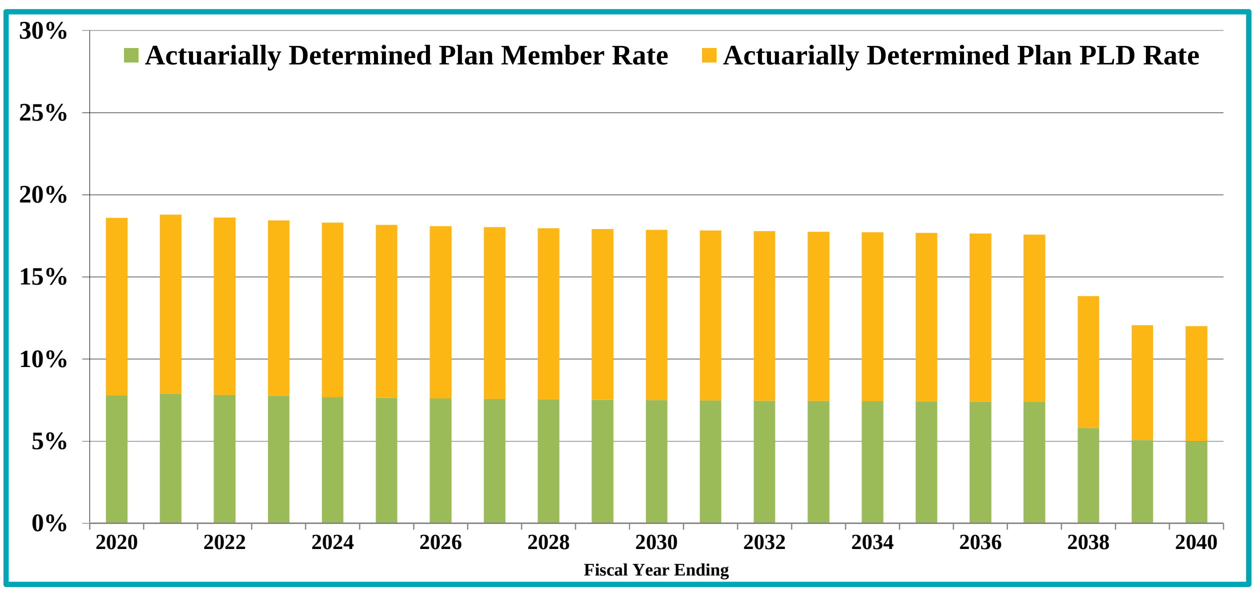
The majority of the actual PLD contribution dollars shown are based on the rates determined by the funding methodology in effect for the period, but in addition, some PLDs pay an additional IUUAL contribution to amortize liability specific to their members as well as contributions related to purchases of service by members. Note that the large dollar amount contributed in FY 2002 by the PLDs in the graph on the following page was due to several PLDs paying off their IUUAL amounts as IUUAL contributions are included in the PLD contributions shown in the yellow bars.

Through FY 2019, the member contribution rates were fixed values, ranging from 4.5% to 9.5%, as set by statute and the Board, specific to the Regular or Special Plan in which each member participates. Beginning with FY 2020, the member contribution rates are determined under the risk-sharing funding methodology adopted by the Board as described in the General Comments section of this Board Summary. The Final PLD Member Rate in effect for FY 2020 is 8.1% with the Age 60 Final Plan Member Rate at 8.2% and the Age 65 Final Plan Member Rate at 7.7%. See the description of these items in Section V for additional information. The specific rates by Plan range from a low of 3.9% for the Age 65 Final Plan Member Rate under Plan BC to a high of 9.5% for all members in Plan 3C.

## Baseline Projections

Our analysis of the projected financial trends for the Plan is an important part of this valuation. In this section, we project future valuation results focusing on the previously referenced AVA funded ratio (AVA over AL) and the expected employer contributions. We here present a baseline projection of these metrics based on all actuarial assumptions being exactly met during the projection period, including the assumed 6.75% investment return being achieved each year. In the risk section of the report, we demonstrate how sensitive future valuation results are to deviations in actual returns from the assumed investment returns by presenting similar results with investment returns deviating from those assumed.

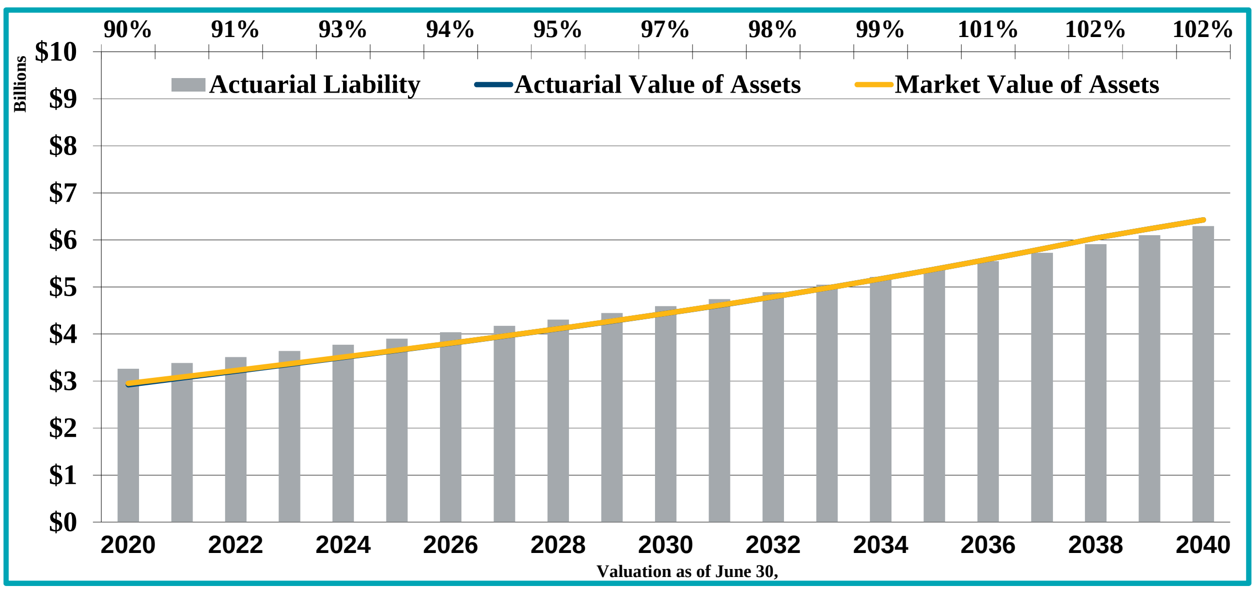
Note that in these projections, we have assumed that the PLD contributions received by the Plan are the actuarially determined amount developed as of the valuation date one year prior to the beginning of each fiscal year rather than the Plan-specific rates developed under the risk-sharing framework. If the actual contributions received are different from these, the results will vary. We have made these assumptions as we do not have the details needed to reflect the framework and because we expect that the rates developed under the risk-sharing framework to not deviate significantly from the calculated rates once the methodology is fully implemented. **We will continue to monitor this assumption and change the projection methodology if we believe this is appropriate as experience emerges.**



## SECTION I – BOARD SUMMARY

The graph above shows the expected progress of the Plan's aggregate actuarially determined Plan rates over the next 20 years assuming that the Plan's assets earn 6.75% on their *market value*. The green bars represent the Actuarially Determined Plan Member Rate, while the yellow bars represent the Actuarially Determined Plan PLD Rate. Note that these rates represent the rates expected to be calculated for the Plan as a whole, as opposed to the rates developed under the risk-sharing framework for every specific Plan within the Plan. **Note that these rates shown are the actuarially determined rates developed assuming that the actuarially determined rates in the prior years have been paid.**

There are slight declines in the rate developed until a large drop as the large 2015 UAL layer is paid off, followed by relatively minor decreases and increases as additional layers are paid off and reflecting the timing difference between when contributions are determined and when they are paid. In this baseline projection, based on all assumptions being met each and every year, the contribution rates would be expected to stabilize at the Plan's normal cost level. However, in reality, there will be gains and losses each and every year versus expectations, resulting in new amortization layers (negative or positive) occurring every year. This concept is explored further in the risk section of this report.




The graph above shows the projected AVA funded ratio (AVA divided by AL) over the next 20 years in this baseline scenario. It shows that the Plan's funded ratio is projected to improve from the starting level of 90% as of FY 2019 to 102% funding in FY 2040. The amounts shown are as of June 30 of the year identified in the horizontal axis. The Plan's funding exceeds 100% due to the lag in the development of contributions and when they are paid.

## Principal Results Summary

The last section of this Board Summary presents a summary of the principal results of the valuation, comparing key results between this year's and last year's valuations for member counts, assets and liabilities, and contribution rates. These summary results are shown for the total Consolidated Plan as well as the division into the Regular Plans subgroup and the Special Plans subgroup.

## SECTION I – BOARD SUMMARY

**Table I-2**
**Summary of Principal Results**
**PLD Consolidated Retirement Plan**
**Total**

| Valuation as of: | June 30, 2018 | June 30, 2019 | % Change |
|---|---|---|---|
| **Member Counts** | | | |
| Active Members | 11,416 | 11,731 | 2.8% |
| Retired Members | 6,672 | 6,966 | 4.4% |
| Beneficiaries of Retired Members | 2,019 | 2,018 | (0.0%) |
| Survivors of Deceased Members | 172 | 171 | (0.6%) |
| Disabled Members | 393 | 379 | (3.6%) |
| Terminated Vested Members | 2,319 | 2,350 | 1.3% |
| Inactives Due Refunds | 7,779 | 8,273 | 6.4% |
| Total Membership | 30,770 | 31,888 | 3.6% |
| Annual Payroll of Active Members | $ 562,952,637 | $ 595,083,006 | 5.7% |
| Annual Payments to Benefit Recipients | $ 149,732,113 | $ 159,816,939 | 6.7% |
| **Assets and Liabilities** | | | |
| Actuarial Liability (AL) | $ 3,089,857,220 | $ 3,258,819,605 | 5.5% |
| Actuarial Value of Assets (AVA) | 2,764,807,391 | 2,918,585,814 | 5.6% |
| Unfunded Actuarial Liability (UAL) | $ 325,049,829 | $ 340,233,791 | 4.7% |
| Individual Portion (IUUAL) | NA | NA | |
| Pooled Portion (PUAL) | $ 325,049,829 | $ 340,233,791 | 4.7% |
| AVA Funded Ratio (AVA/AL) | 89.5% | 89.6% | |
| MVA Funded Ratio (MVA/AL) | 91.1% | 90.6% | |
| Accrued Benefit Liability (PVAB) | $ 2,800,029,632 | $ 2,956,328,782 | 5.6% |
| Market Value of Assets (MVA) | 2,816,179,855 | 2,953,156,096 | 4.9% |
| Unfunded PVAB | $ (16,150,223) | $ 3,172,686 | 119.6% |
| Accrued Benefit Funded Ratio | 100.6% | 99.9% | |
| **Plan Total Contribution Rates*** | **FY 2020** | **FY 2021** | |
| Actuarially Determined Plan Normal Cost Rate | 13.9% | 13.9% | |
| Actuarially Determined Plan UAL Amortization Rate | 4.7% | 4.9% | |
| Actuarially Determined Plan Total Rate | 18.6% | 18.8% | |

* These are actuarially determined amounts from which the individual Plan member and PLD rates are determined based on the risk-sharing framework. As such, these values are informational rates developed based on the entire Plan rather than applied to any specific Plan.

## SECTION I – BOARD SUMMARY

**Table I-3**
**Summary of Principal Results**
**PLD Consolidated Retirement Plan**
**Regular Plans: AC, AN & BC**

| Valuation as of: | June 30, 2018 | June 30, 2019 | % Change |
|---|---|---|---|
| **Member Counts** | | | |
| Active Members | 8,603 | 8,646 | 0.5% |
| Retired Members | 5,173 | 5,440 | 5.2% |
| Beneficiaries of Retired Members | 1,380 | 1,372 | (0.6%) |
| Survivors of Deceased Members | 147 | 145 | (1.4%) |
| Disabled Members | 301 | 287 | (4.7%) |
| Terminated Vested Members | 2,010 | 2,060 | 2.5% |
| Inactives Due Refunds | 7,653 | 8,135 | 6.3% |
| Total Membership | 25,267 | 26,085 | 3.2% |
| Annual Payroll of Active Members | $ 386,924,150 | $ 397,265,440 | 2.7% |
| Annual Payments to Benefit Recipients | $ 91,425,368 | $ 98,276,355 | 7.5% |
| **Assets and Liabilities** | | | |
| Actuarial Liability (AL) | $ 1,848,188,454 | $ 1,926,943,698 | 4.3% |
| Actuarial Value of Assets (AVA) | 1,637,652,793 | 1,702,396,977 | 4.0% |
| Unfunded Actuarial Liability (UAL) | $ 210,535,661 | $ 224,546,721 | 6.7% |
| Individual Portion (IUUAL) | NA | NA | |
| Pooled Portion (PUAL) | $ 210,535,661 | $ 224,546,721 | 6.7% |
| AVA Funded Ratio (AVA/AL) | 88.6% | 88.3% | |
| MVA Funded Ratio (MVA/AL) | 90.3% | 89.4% | |
| Accrued Benefit Liability (PVAB) | $ 1,686,123,622 | $ 1,766,972,966 | 4.8% |
| Market Value of Assets (MVA) | 1,668,081,769 | 1,722,561,655 | 3.3% |
| Unfunded PVAB | $ 18,041,853 | $ 44,411,311 | 146.2% |
| Accrued Benefit Funded Ratio | 98.9% | 97.5% | |
| **Regular Plan Total Contribution Rates*** | **FY 2020** | **FY 2021** | |
| Actuarially Determined Regular Plans Normal Cost Rate | 13.1% | 13.0% | |
| Actuarially Determined Regular Plans UAL Amortization Rate | 4.4% | 4.4% | |
| Actuarially Determined Regular Plans Total Rate | 17.5% | 17.4% | |

* These are actuarially determined amounts that are solely for informational purposes. They are developed based on all of the Regular Plans in the Plan rather than applied to any specific Plan.

## SECTION I – BOARD SUMMARY

**Table I-4**
**Summary of Principal Results**
**PLD Consolidated Retirement Plan**
**Special Plans: 1C-4C & 1N-4N**

| Valuation as of: | June 30, 2018 | June 30, 2019 | % Change |
|---|---|---|---|
| **Member Counts** | | | |
| Active Members | 2,813 | 3,085 | 9.7% |
| Retired Members | 1,499 | 1,526 | 1.8% |
| Beneficiaries of Retired Members | 639 | 646 | 1.1% |
| Survivors of Deceased Members | 25 | 26 | 4.0% |
| Disabled Members | 92 | 92 | 0.0% |
| Terminated Vested Members | 309 | 290 | (6.1%) |
| Inactives Due Refunds | 126 | 138 | 9.5% |
| Total Membership | 5,503 | 5,803 | 5.5% |
| Annual Payroll of Active Members | $ 176,028,487 | $ 197,817,566 | 12.4% |
| Annual Payments to Benefit Recipients | $ 58,306,745 | $ 61,540,584 | 5.5% |
| **Assets and Liabilities** | | | |
| Actuarial Liability (AL) | $ 1,241,668,766 | $ 1,331,875,907 | 7.3% |
| Actuarial Value of Assets (AVA) | 1,127,154,598 | 1,216,188,837 | 7.9% |
| Unfunded Actuarial Liability (UAL) | $ 114,514,168 | $ 115,687,070 | 1.0% |
| Individual Portion (IUUAL) | NA | NA | |
| Pooled Portion (PUAL) | $ 114,514,168 | $ 115,687,070 | 1.0% |
| AVA Funded Ratio (AVA/AL) | 90.8% | 91.3% | |
| MVA Funded Ratio (MVA/AL) | 92.5% | 92.4% | |
| Accrued Benefit Liability (PVAB) | $ 1,113,906,010 | $ 1,189,355,816 | 6.8% |
| Market Value of Assets (MVA) | 1,148,098,086 | 1,230,594,441 | 7.2% |
| Unfunded PVAB | $ (34,192,076) | $ (41,238,625) | 20.6% |
| Accrued Benefit Funded Ratio | 103.1% | 103.5% | |
| **Special Plan Total Contribution Rates*** | **FY 2020** | **FY 2021** | |
| Actuarially Determined Special Plans Normal Cost Rate | 15.7% | 15.7% | |
| Actuarially Determined Special Plans UAL Amortization Rate | 5.3% | 5.1% | |
| Actuarially Determined Special Plans Total Rate | 21.0% | 20.8% | |

* These are actuarially determined amounts that are solely for informational purposes. They are developed based on all of the Regular Plans in the Plan rather than applied to any specific Plan.

**SECTION II – RISK ASSESSMENT AND DISCLOSURE**

## Introduction

Actuarial Standard of Practice (ASOP) No. 51 was recently published by the Actuarial Standards Board to provide guidance to actuaries on the assessment and disclosure of risks related to the possibility that future pension plan experience will deviate from assumptions. This standard does not introduce new concepts to actuarial work; it simply attempts to provide some codification of the practice. Our reports have routinely included stress testing of the valuation results showing the impact of future experience deviating from the underlying assumptions. However, with this ASOP becoming effective for this June 30, 2019 Actuarial Valuation Report, we have taken this as an opportunity to consolidate the information regarding assessment and disclosure of the Plan’s risks in this section II as well as add a number of additional items helping to communicate and understand these risks.

The Plan’s actuarial valuation results are dependent on assumptions about future economic and demographic experience. Based on actuarial standards of practice, the assumptions represent a reasonable estimate for future experience. However, actual future experience will never conform exactly to the assumptions and may differ significantly from the assumptions. This deviation is the risk that pension plan sponsors undertake in relying on a pension plan’s actuarial valuation results.

This section of this report is intended to identify the primary drivers of these risks, provide background information and assessments about these identified risks, and communicate the significance of these risks to this Plan.

## Identification of Risks

For this Plan, the three primary valuation results that can significantly differ from those expected are in the assets, liabilities, and annually determined contributions. While there are several factors that could lead to these results being different, we believe the primary risks are:

- Investment risk,
- Longevity and other demographic risks,
- Plan change risk, and
- Assumption change risk.

## SECTION II – RISK ASSESSMENT AND DISCLOSURE

Other risks that we have not identified may also turn out to be important.

*Investment Risk* is the potential for investment returns to deviate from what is expected. When actual investment returns are lower than the investment assumption used in the actuarial valuation, the unfunded liability will increase and will require higher contributions than otherwise anticipated. But, when actual returns exceed the assumption, the resulting unfunded liability measurements and actuarially determined contributions will be lower than anticipated. As seen in the historical section that follows, this has been a significant driver of deviations in the actual measurements for this Plan from those expected by the valuations.

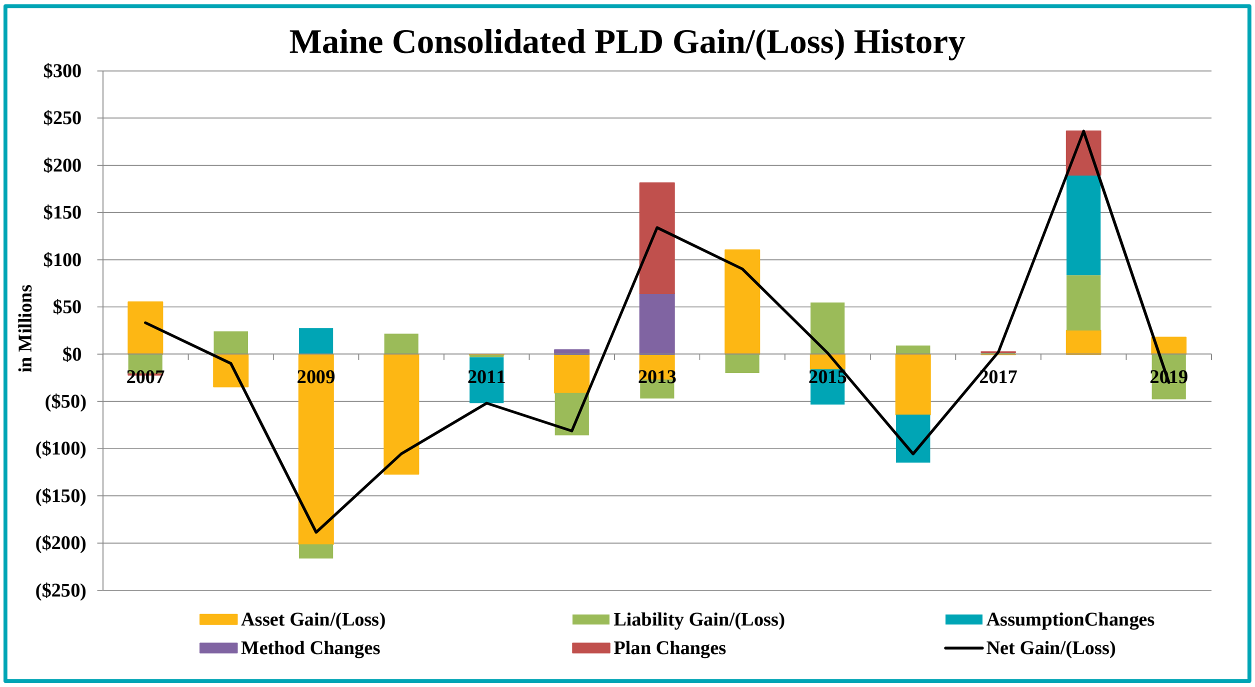
*Longevity and Other Demographic Risk* is the potential for mortality or other demographic experience to be different than expected. Generally, longevity and other demographic risks emerge slowly over time as the actual experience deviates from expected. In addition, the extensive number of assumptions related to longevity and demographic experience often result in offsetting factors contributing to the Plan's overall liability experience. As such, these risks are often dwarfed by other risks, particularly those due to the investment returns. The historical section following shows that this is true for this Plan, with the magnitude of the gains and losses from investment experience often significantly larger than the gains and losses from liability experience.

*Assumption Change Risk* is the potential for the environment to change such that future valuation assumptions are adjusted to be different than the current assumptions. For example, declines in interest rates over time may result in a change in the assumed rates of return used in the valuation. A healthier workforce may result in changes in employee behavior such that retirement rates are adjusted to reflect employees working longer. Assumption change risk is an extension of the risks previously identified, but rather than capturing the risk as it is experienced, it captures the cost of recognizing a change in the environment when the current assumption is no longer reasonable. The historical review section will show that assumption change risk has been a relatively significant risk for this Plan.

*Plan Change Risk* is the potential for the provisions of the Plan to be changed such that the funding or benefits are changed materially. In addition to the actual payments to and from the Plan being changed, future valuation measurements can also be impacted, with plan changes leading to deviations between actual future measurements and those expected by the current valuation. The historical review section will show that plan change risk has been a relatively significant driver of deviations in the actual measurements for this Program from those expected by the valuations.

## Historical Experience Deviations

In understanding the impact of some of these risks, it is useful to look at past experience deviations. These deviations are commonly referred to as actuarial gains and losses. The following graph shows the gains/(losses) at each valuation date between the actual and expected experience broken down by cause.




As described previously and is evident in this graph, investment gains and losses as well as assumption and method changes have been the most significant risks for the Plan. The next two most significant causes of experience deviations are liability gains/(losses) and plan changes.

## Plan Maturity Measures

As pension plans become more mature, the three primary risks of adverse investments, demographic deviations, and assumption change experience become of more significant concern. As a result, it has become increasingly important to examine measures that indicate a pension plan’s maturity level. With shrinking workforces, aging Baby Boomers, and retirees living longer, plans pay out more in benefits than they receive in contributions – leading to negative cash flows, excluding investment income.

When plans with negative cash flows suffer investment losses, they need to liquidate enough assets to pay for benefits in excess of contributions. That means these plans will need to earn higher returns to rebuild their assets to the previous levels. Plans with negative cash flows exceeding six percent of assets are especially vulnerable to asset losses.

## SECTION II – RISK ASSESSMENT AND DISCLOSURE

The balance of this section discloses and examines three maturity measures: the asset leverage ratio, the support ratio, and the net cash flow ratio.

Asset Leverage Ratio

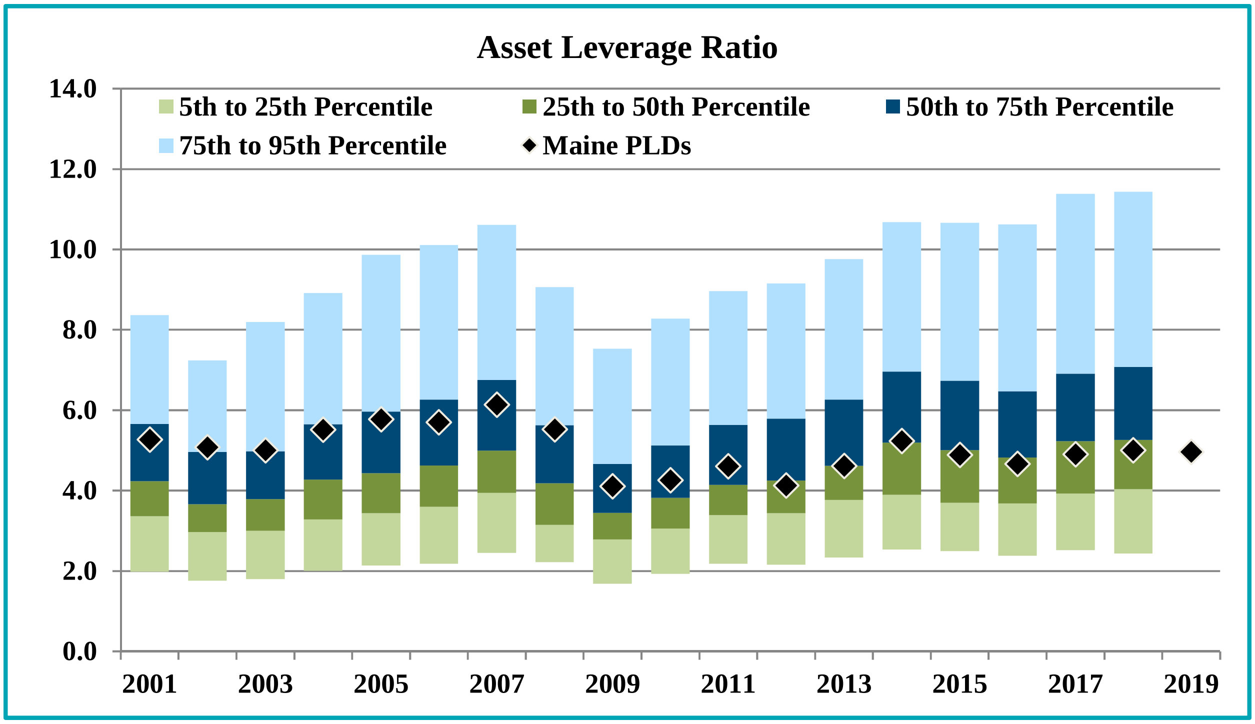
One of the more important plan maturity measures is the asset leverage ratio – the market value of assets divided by the plan's payroll. As a plan matures, its assets increase. Once a plan is fully funded, contributions will decrease. The greater the plan's assets are relative to payroll, the more vulnerable the plan is to investment volatility.

As an example, here are two plans that both experience a 10% investment loss equaling $500 million. Plan A's asset leverage ratio is 10 and Plan B's ratio is five – this means that Plan A has to spread, or amortize, that loss over a payroll that is half as large as Plan B's.

| | ($ in millions) | |
|---|---|---|
| | **Plan A** | **Plan B** |
| **Plan Assets** | **$ 5,000** | **$ 5,000** |
| **Payroll** | **$ 500** | **$ 1,000** |
| **Asset Leverage Ratio** | **10.0** | **5.0** |
| | | |
| **10% investment loss** | **$ 500.0** | **$ 500.0** |

The Boston College's Center for Retirement Research, NASRA and the Center for State and Local Government Excellence maintain the Public Plan Database that contains the majority of state plans as well as many large municipal plans. The chart shows the asset leverage ratios for all plans in this database since 2001. The colored bars represent the central 90% of the asset leverage ratios for the plans. The Maine Consolidated Plan for Participating Local Districts is represented by the black diamonds. Over the period shown, the asset leverage ratio for this Plan has declined from around the 75th percentile to just under the 50th percentile currently. This means that the Plan is maturing at a slower rate than the database of plans based on this particular metric.

## SECTION II – RISK ASSESSMENT AND DISCLOSURE

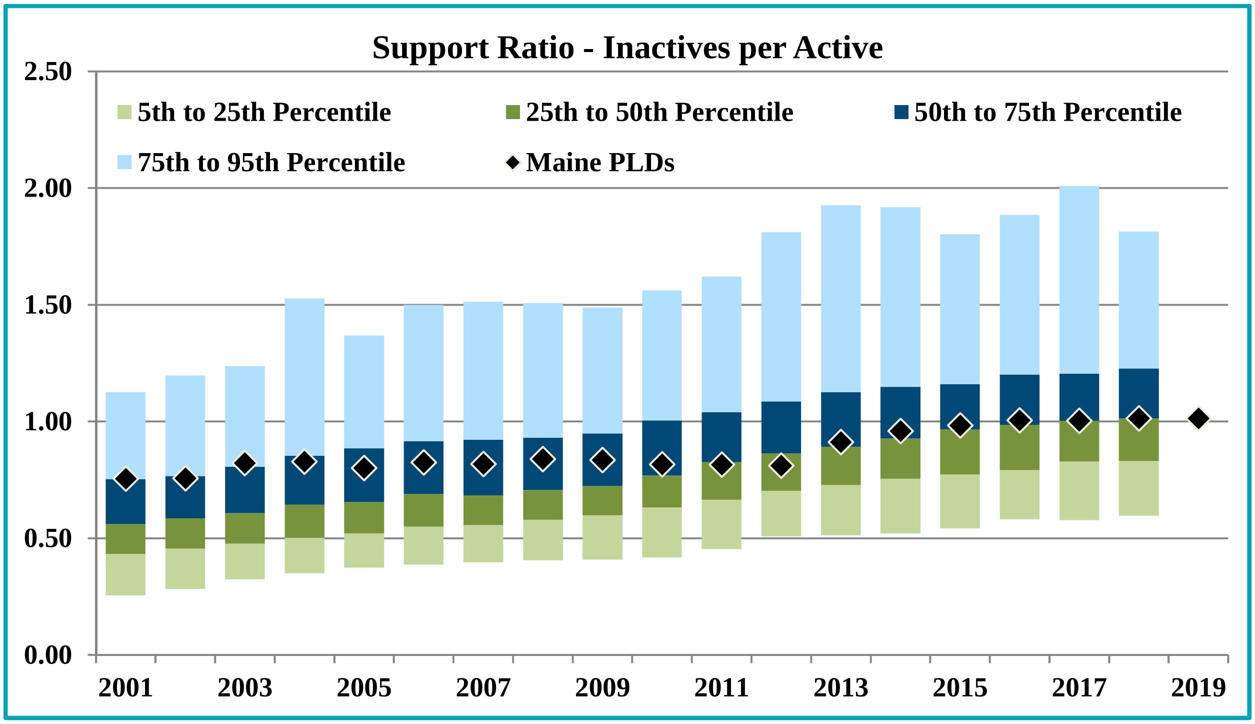


## SECTION II – RISK ASSESSMENT AND DISCLOSURE

Support Ratios

A commonly used measure of plan maturity is the Support Ratio – the ratio of retired and inactive members or those receiving benefits or entitled to a deferred benefit to the number of active members or those currently accruing benefits in the Plan. The greater this ratio, the more likely the Plan will have or develop negative cash flows.

The graph shows the support ratio over time for the Plan compared to the Public Plan database.



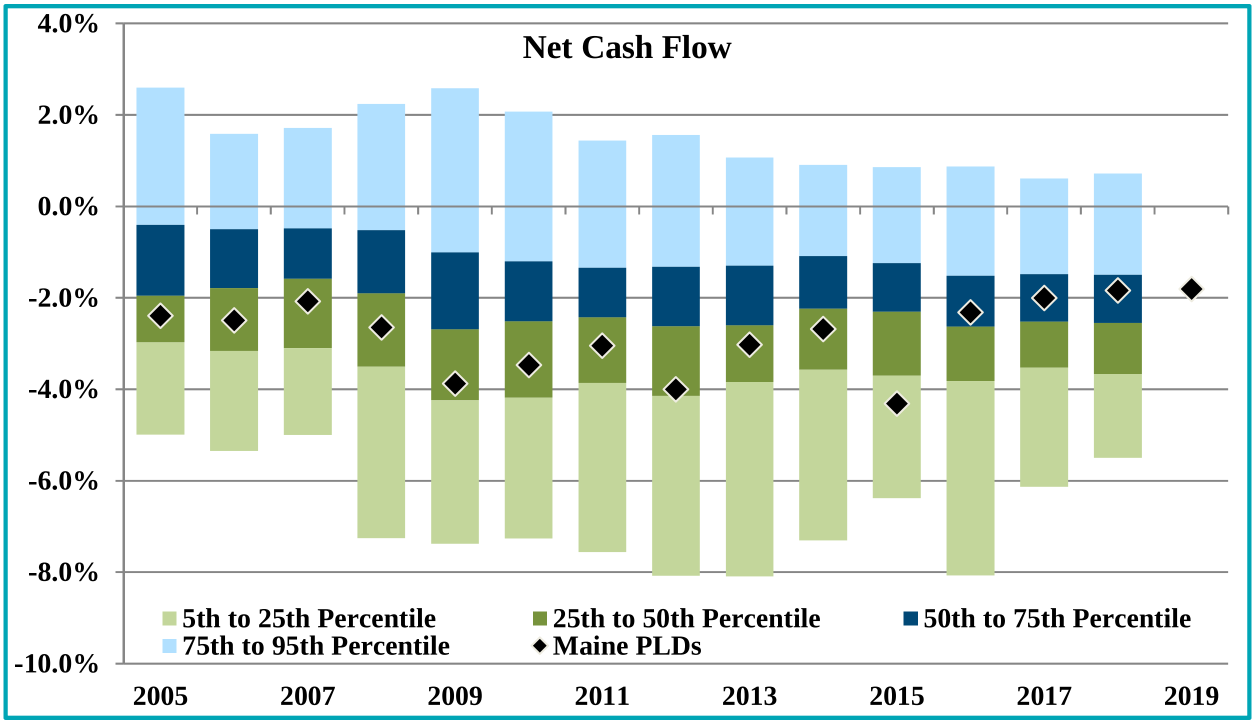

The black diamonds in this graph shows that the Plan's support ratio for each year has generally declined over time and has gone from the 75th percentile level to close to the 50th percentile. This indicates that the Plan is maturing more slowly than the universe of plans based on this metric, similar to what was seen with the previous maturity measure.

Net Cash Flow Ratio

Another measure of plan maturity is the ratio of the net cash flow out of the plan – contributions less benefits and expenses – divided by the market value of plan assets. When this ratio is significantly negative, a plan is very vulnerable to market declines.

This chart shows that the Plan's net cash flow ratio in 2005 was about -2.4% and in 2019 is less negative at approximately -1.8%. For most of the period, the Plan's net cash flow has been more negative than the median plan in the public plan database, but in recent years, the Plan's negative cash flows have been limited relative to the median plan in the universe. This measure thus again provides some indication that this Plan is maturing at a pace slower than the typical public plan.

## SECTION II – RISK ASSESSMENT AND DISCLOSURE




## Assessing Future Risk

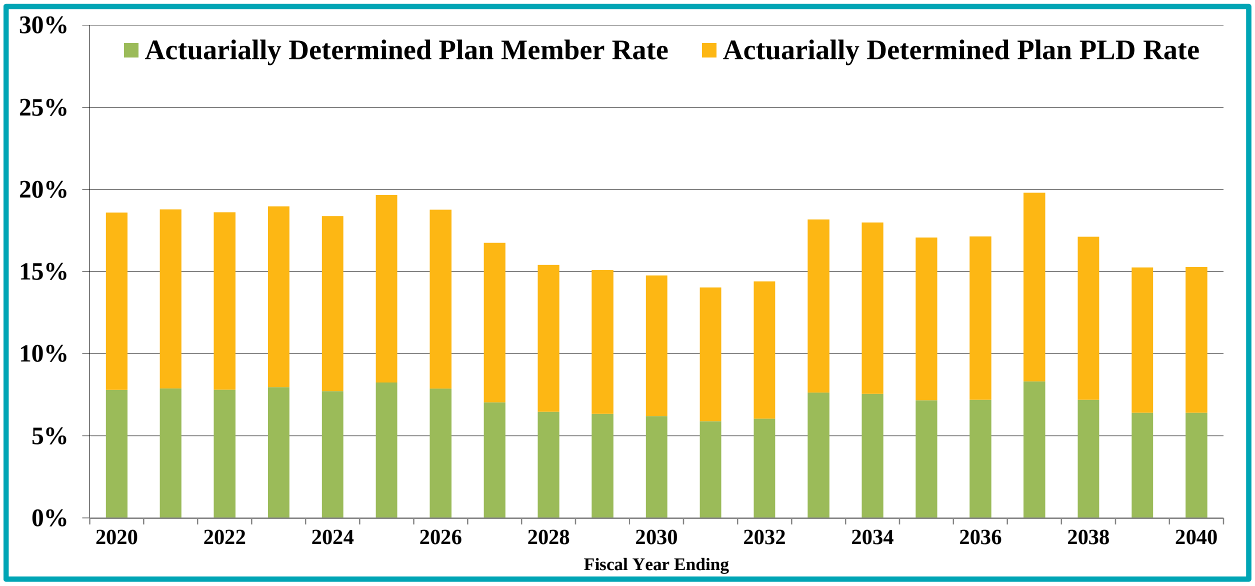
Assessing the future risk that the expected measurements produced by the actuarial valuations will deviate from the actual values over time is complex and can never be exactly known. However, to try to assist the Board in its utilization of this report, we have attempted to develop some basic assessments of this risk in the remainder of this section.

Pages 5-6 have additional detail on the baseline projection. It is important to note that baseline projections, while valid, **are not going to occur** as experience never conforms exactly to assumptions every year. As a demonstration of this, the following projection is included, which is based on assuming varying returns in the future. We based this varying return on assuming the returns for the next 20 years are those that actually occurred for the 20 years ending June 30, 1960 through June 30, 1979, averaging 6.939% over the next 20 years, just above the current assumed return of 6.75%. The rates assumed for this scenario are shown below.

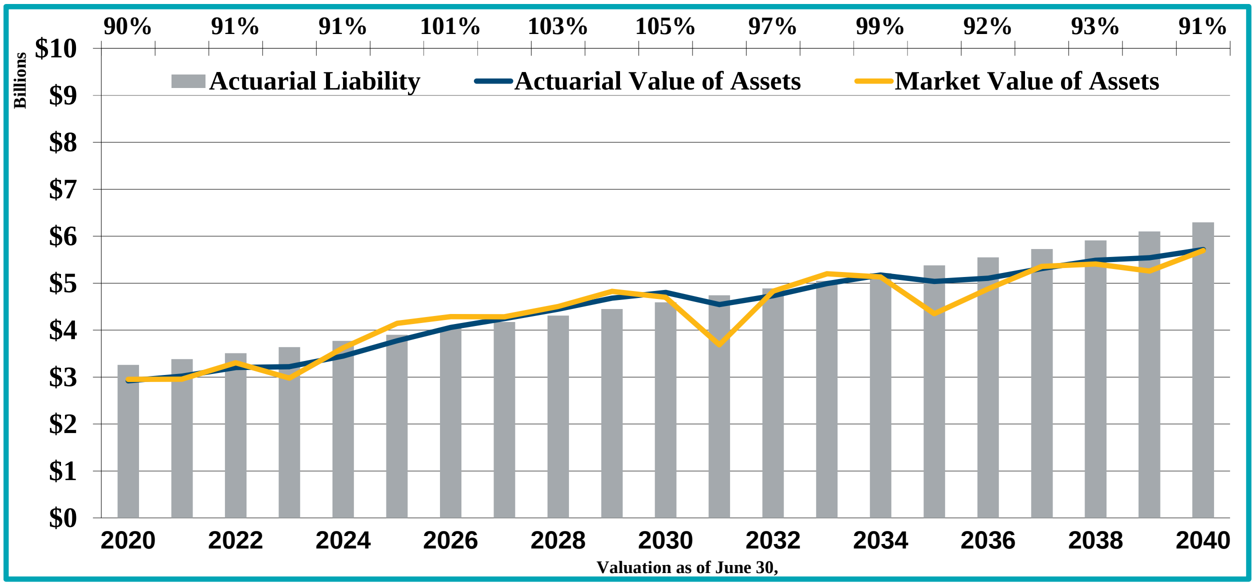
| FY | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
|---|---|---|---|---|---|---|---|---|---|---|
| Return | 2.2% | 14.3% | -7.7% | 24.7% | 16.9% | 5.5% | 2.2% | 7.9% | 10.3% | 0.3% |
| FY | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 |
| Return | -18.8% | 36.1% | 11.1% | 1.3% | -12.7% | 15.8% | 13.2% | 3.5% | 0.3% | 12.2% |

## SECTION II – RISK ASSESSMENT AND DISCLOSURE

With varying annual earnings, one can see the volatility in the contributions in the first chart. Note that this chart reflects an illustrative scenario and is not intended to reflect future expectations as the volatility of the contributions will vary with the volatility of the returns.




The funded ratio of the Plan is also more volatile with varied returns as seen in the following graph from this one illustrative scenario. Note also that timing of contribution development and payment as well as the combination of the amortization layers results in the Plan being funded over 100% at times, similar to what is seen in the baseline projection.



# SECTION III – ASSETS

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

The assets for all Defined Benefit (DB) Programs administered by MainePERS are invested together. These Programs are the State Employee and Teacher Retirement Program, the Judicial Retirement Program, the Legislative Retirement Program, and the Participating Local District Retirement Program, including both the Consolidated Plan that is the subject of this valuation and the several Nonconsolidated PLDs. The assets of all of these Programs are entirely commingled for investment purposes, so the actuarial value of assets (AVA) for each of these Programs is developed by first developing it for the entire asset pool and then subsequently allocating that total AVA to each of the specific Programs.

In this section, we present detailed information on the Plan's assets including:

- Disclosure of total MainePERS DB assets at June 30, 2018 and June 30, 2019;
- Statement of changes in total MainePERS DB market values during the year;
- Development of the total MainePERS DB actuarial value of assets;
- Allocation of the total actuarial value to MainePERS DB Programs;
- Assessment of the total MainePERS DB investment performance; and
- Projection of expected cash flows for the Plan for the next ten years.

## Disclosure

The market value of assets (MVA) represents a "snap-shot" or "cash-out" value, which provides the principal basis for measuring financial performance from one year to the next. However, market values can fluctuate widely with corresponding swings in the marketplace, resulting in volatility in the resulting contributions if the unadjusted market value is used in the valuation process that develops the contributions. Therefore, a smoothed, actuarial value is developed for use in this process and for evaluating the Plan's ongoing ability to meet its obligations. The actuarial value of the total MainePERS DB assets are then allocated to each Program. This section discloses the market and actuarial values of the MainePERS DB assets both in total and for each Program.

## SECTION III – ASSETS

Table III-1 that follows develops the change in the market value of assets for the total MainePERS DB assets during FY 2019.

**Table III-1**
**Changes in Market Value of Total MainePERS Defined Benefit (DB) Assets**

| | | |
|---|---|---|
| **Market Value of Total MainePERS DB Assets – June 30, 2018** | | **$ 14,569,405,260** |
| **Additions** | | |
| Contributions: | | |
| Employer Contributions | $ 414,682,379 | |
| Member Contributions | 201,855,646 | |
| Transfers | (225,354) | |
| Total Contributions | $ 616,312,671 | |
| Investment Income: | | |
| Net Appreciation (Depreciation) in Fair Value of Investments | $ 1,081,164,176 | |
| Interest on Bank Balances | 1,422,767 | |
| Total Investment Income | $ 1,082,586,943 | |
| Investment Activity Expenses: | | |
| Management Fees | $ (111,281,450) | |
| Investment Related Expense | (5,736,147) | |
| Banking Fees | (29,783) | |
| Total Investment Activity Expenses | $ (117,047,380) | |
| Net Income from Investing Activities | $ 965,539,563 | |
| Total Additions | | $ 1,581,852,234 |
| **Deductions** | | |
| Retirement Benefits | $ (943,958,705) | |
| Disability Benefits | (30,669,902) | |
| Survivor Benefits | (24,140,215) | |
| Refunds | (25,818,720) | |
| Administrative Expenses | (14,004,118) | |
| Total Deductions | | $ (1,038,591,660) |
| **Total** | | |
| Net Increase (Decrease) | | $ 543,260,574 |
| **Market Value of Total MainePERS DB Assets – June 30, 2019** | | **$ 15,112,665,834** |

## SECTION III – ASSETS

Table III-2 below develops the actuarial value of assets for the total MainePERS DB assets as of June 30, 2019 using the adopted actuarial valuation methodology.

**Table III-2**
**Development of Actuarial Value of Total MainePERS Defined Benefit (DB) Assets as of June 30, 2019**

| | | |
|---|---|---|
| 1. | Actuarial Value of Total MainePERS DB Assets at June 30, 2018 | $ 14,303,631,662 |
| 2. | Amount in (1) with Interest to June 30, 2019 | 15,269,126,799 |
| 3. | Employer and Member Contributions for FY 2019 | 616,312,671 |
| 4. | Interest on Contributions in (3), Assuming Received Uniformly throughout FY 2019 | 20,460,913 |
| 5. | Total Disbursements without Administrative Expenses for FY 2019 | (1,024,587,542) |
| 6. | Interest on Disbursements in (5), Assuming Payments made Uniformly throughout FY 2019 | (34,015,196) |
| 7. | Expected Value of Total MainePERS DB Assets at June 30, 2019 = (2) + (3) + (4) + (5) + (6) | $ 14,847,297,645 |
| 8. | Actual Market Value of Total MainePERS DB Assets at June 30, 2019 | 15,112,665,834 |
| 9. | Excess of (8) Over (7) | 265,368,189 |
| 10. | Actuarial Value of Total MainePERS DB Assets at June 30, 2019 = (7) + [33⅓% of (9)] | $ 14,935,753,708 |

## Actuarial Value of Total MainePERS DB Assets

As discussed in the disclosure portion of this section, the actuarial value of assets for the Plan represents a "smoothed" value developed by the actuary to reduce, or eliminate, volatility in contribution rates that could develop from short-term fluctuations in the market value of assets. Current actuarial methods employed in this Plan use an allocated portion of the total actuarial value of assets based on the actuarial valuation process applied to the total MainePERS DB assets. This methodology for the total MainePERS DB assets sets the actuarial value of assets equal to the expected value of the actuarial value of assets plus one-third of the difference between the actual market value of assets and the expected actuarial value of assets. The expected value of the actuarial 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 investment return assumption that was in effect for the previous year, 6.75% for this valuation. The previous table, Table III-2, illustrates the calculation of the actuarial value of assets for the total MainePERS DB assets as of June 30, 2019.

## Allocation of Actuarial Value of Assets to the Plan

The assets for all of the defined benefit (DB) Programs administered by MainePERS are commingled for investment purposes, with the adopted actuarial smoothing methodology applied to the market value of the total MainePERS DB assets. This produces an asset ratio (total MainePERS actuarial value of assets divided by total MainePERS market value of assets) that is then applied to the market value of assets attributable to each of the Programs to determine their actuarial value of assets as of the valuation date. The asset ratio derived in this June 30, 2019 valuation as shown in Table III-2 above is 0.988294 ($14,935,753,708 ÷ $15,112,665,834 ). The allocation of actuarial value of the total MainePERS DB assets to each of the MainePERS DB Programs based on this asset ratio is shown in the following chart.

**Table III-3**
**Allocation of Actuarial Value of Total MainePERS DB Assets**
**as of June 30, 2019**

| Program | Market Value | Actuarial Value |
|---|---|---|
| Teachers | $ 8,003,297,686 | $ 7,909,609,357 |
| State (Regular & Special) | 4,032,265,361 | 3,985,062,793 |
| Judicial | 73,637,441 | 72,775,425 |
| Legislative | 13,248,022 | 13,092,938 |
| Participating Local Districts (Consolidated & Non-Consolidated) | 2,990,217,324 | 2,955,213,195 |
| Total | $ 15,112,665,834 | $ 14,935,753,708 |

## Investment Performance

The market value of assets for the total MainePERS DB assets returned a positive 6.62% during FY 2019. This is lower than the assumed return of 6.75% for FY 2019. The equivalent market value returns for the total MainePERS DB assets for FY 2018 and FY 2017 were positive 9.95% and positive 12.72%, respectively.

On an actuarial value of assets basis, the return for FY 2019 was a positive 7.38% for the total MainePERS DB assets. This return is greater than the return on a market value basis, and it is higher than the 6.75% assumption for FY 2019. Therefore, this return gave rise to an investment gain on the total MainePERS DBs assets this year.

## Cash Flow Projections

**Table III-4**
**Projection of Consolidated Plan**
**Benefit Payments and Contributions**

| FY Ending June 30, | Expected Benefit Payments | Total Expected Contributions |
|---|---|---|
| 2019 | $ 175,092,000 | $ 112,197,000 |
| 2020 | 184,389,000 | 116,522,000 |
| 2021 | 193,375,000 | 118,579,000 |
| 2022 | 202,048,000 | 120,748,000 |
| 2023 | 211,062,000 | 123,076,000 |
| 2024 | 220,476,000 | 125,590,000 |
| 2025 | 229,737,000 | 128,452,000 |
| 2026 | 239,144,000 | 131,505,000 |
| 2027 | 247,969,000 | 134,683,000 |
| 2028 | 256,762,000 | 137,971,000 |

In Table III-4 above, we provide a projection of expected cash flows in and out of the Plan for the next ten years for informational purposes. The Board may share these projections with its investment advisor for consideration of the growing gap shown between the cash expected to come into the Plan through PLD and member contributions and the cash expected to be paid out of the Plan to provide benefit payments.

The expected benefit payments in Table III-4 were developed using the data currently included in this valuation and on the assumption that the actuarial assumptions disclosed in Appendix D will be exactly met. Actual benefit payments will vary if members retire sooner or later than assumed, if salary increases and actual future post-retirement COLAs differ from those assumed, or if other assumptions differ from the actual experience seen. These benefit projections exclude any assumption about new Plan participants, whose experience will eventually lead to increased benefit payments. However, we do not feel this exclusion will materially impact the projections for the time period shown.

For the purposes of this table of cash flows, as well as for all other liability calculations within this report, we have assumed that the member contribution rates for each Regular and Special Plan within the Plan will be developed and paid at the actuarially determined rates. In addition, these cash flows, with the exception of the FY 2020 rates where we have assumed the rates adopted through the risk-sharing framework will be paid, again along with all other liability calculations within this report, are based on the assumption that the contributions made to the Plan will be the actuarially determined rates. In addition to these additional assumptions regarding the contributions that the Plan will receive, these cash flows are also developed based on the assumption that all valuation assumptions are exactly met, including an assumed 2.75% per year increase in covered payroll.

## SECTION III – ASSETS

Note that we expect the contribution rates that will actually be paid for FY 2021 will be those developed under the risk-sharing contribution methodology, which are modified versions of the actuarially determined rates rather than the actuarially determined rates themselves. We will continue to reflect the known adopted rates as they are developed, but at this time the unmodified actuarially determined contribution rates that are the basis of the risk-sharing contribution rates are the most reasonable to assume will be paid.

## SECTION IV – LIABILITIES

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

- Disclosure of the Plan's liabilities as of June 30, 2018 and June 30, 2019; and
- Statement of changes in these liabilities during the year.

## Disclosure

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

- Present Value of Future Benefits (PVB): Used for analyzing the overall financial obligations of the Plan, this represents the amount of money needed today to fully fund all future benefits of the Plan, assuming active members continue to earn salary increases and accrue benefits under their current Plan provisions and assuming all actuarial assumptions are exactly met, including the 6.75% per year investment return.

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

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

Table IV-1 on the following page discloses each of these liabilities for the current and prior years' valuations. With respect to the actuarial liability and the present value of accrued benefits, a subtraction of the appropriate value of the Plan's assets yields, for each respective type, a net surplus or an unfunded liability. For the PVB measure, it is compared to the market value of assets plus the expected future value of contributions to the Plan. The future member and PLD contributions are calculated as the expected rates for each year times the expected future payroll as of that date. The difference between the PVB and these anticipated resources indicates either an expected shortfall or an expected surplus representing either additional funding or excess funding and indicates the size of the Program's stored gains or losses that remain outside of the valuation process currently.

Note that since the methodology to allocate the actuarially determined contributions between the PLDs and members is still being phased in, we have assumed that the static member contribution rates that were in effect through the end of FY 2019 will be continued for all future years in determining the liabilities throughout this report. We anticipate that we will update the valuation methodology to reflect the expected contributions by specific Plan within the Plan in developing

## SECTION IV – LIABILITIES

liabilities related to refunds of contributions once the risk-sharing framework is largely phased-in. In aggregate, we expect that the total liabilities for the Plan will not be materially impacted by this assumption.

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

The liability measures are compared to appropriate measures of assets, along with the expected future value of member and PLD contributions where appropriate. The difference between the liability measure and the anticipated resources indicates either an expected shortfall or an expected surplus related to that liability measure. The surplus or shortfall on the present value of benefits (PVB) item indicates the size of the Plan's stored gains or losses that remain outside of the valuation process.

**Table IV-1**
**Disclosure of Liabilities**

| | June 30, 2018 | June 30, 2019 |
|---|---|---|
| **Present Value of Benefits (PVB)** | | |
| Active Member Benefits | $ 1,756,432,450 | $ 1,849,281,798 |
| Retired, Disabled, Survivor, and Beneficiary Benefits | 1,678,397,141 | 1,790,898,244 |
| Terminated (Vested & Nonvested) Benefits | 140,168,941 | 136,785,016 |
| **Total PVB** | **$ 3,574,998,532** | **$ 3,776,965,058** |
| | | |
| Market Value of Assets (MVA) | $ 2,816,179,855 | $ 2,953,156,096 |
| Future Member and PLD Contributions* | 758,818,677 | 345,999,764 |
| Projected (Surplus)/Shortfall | 0 | 0 |
| **Total Resources** | **$ 3,574,998,532** | **$ 3,776,965,058** |
| | | |
| **Actuarial Liability (AL)** | | |
| Present Value of Benefits (PVB) | $ 3,574,998,532 | $ 3,776,965,058 |
| Present Value of Future Normal Costs (PVFNC) | 485,141,312 | 518,145,453 |
| **Actuarial Liability (AL = PVB – PVFNC)** | **$ 3,089,857,220** | **$ 3,258,819,605** |
| Actuarial Value of Assets (AVA) | 2,764,807,391 | 2,918,585,814 |
| **Net (Surplus)/Unfunded (AL – AVA)** | **$ 325,049,829** | **$ 340,233,791** |
| | | |
| **Present Value of Accrued Benefits** | | |
| Present Value of Benefits (PVB) | $ 3,574,998,532 | $ 3,776,965,058 |
| Present Value of Future Benefit Accruals (PVFBA) | 774,968,900 | 820,636,276 |
| **Accrued Liability (PVAB = PVB – PVFBA)** | **$ 2,800,029,632** | **$ 2,956,328,782** |
| Market Value of Assets (MVA) | 2,816,179,855 | 2,953,156,096 |
| **Net (Surplus)/Unfunded (PVAB – MVA)** | **$ (16,150,223)** | **$ 3,172,686** |

* Future contributions assumed at the actuarially determined rates.

**SECTION IV – LIABILITIES**

## Changes in Liabilities

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

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

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

- PLD or member contributions being different than expected (including actual contributions developed under the risk-sharing framework deviating in aggregate from the actuarially determined contributions)
- Investment earnings being different than expected
- A change in the method used to measure Plan assets in developing the unfunded liability measure since the last valuation

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

**Table IV-2**

| | Present Value of Future Benefits | Actuarial Liability | Present Value of Accrued Benefits |
|---|---|---|---|
| Liability Measurement – June 30, 2018 | $ 3,574,998,532 | $ 3,089,857,220 | $ 2,800,029,632 |
| Liability Measurement – June 30, 2019 | 3,776,965,058 | 3,258,819,605 | 2,956,328,782 |
| Liability Measurement Increase/ (Decrease) Due to: | $ 201,966,526 | $ 168,962,385 | $ 156,299,150 |
| Plan Amendment | $ 0 | $ 0 | $ 0 |
| Assumption Change | 0 | 0 | 0 |
| Actuarial (Gain)/Loss | N/C | $ 47,684,163 | N/C |
| Benefits Accumulated and Other Sources | $ 201,966,526 | $ 121,278,222 | $ 156,299,150 |

N/C = Not calculated

# SECTION V – CONTRIBUTIONS

In this section, we present detailed information on PLD and member contribution rates as developed in this June 30, 2019 valuation for the Plan, including:

- Development of Actuarially Determined Plan Total Rate for the Plan as a whole, including Actuarially Determined Plan Normal Cost Rate and Actuarially Determined Plan UAL Amortization Rate;
- Summary of the Plan-Specific Normal Cost Rates by each Regular and Special Plan; and
- Description of risk-sharing framework and how resulting contribution rates are developed.

Note that the actual rates that will be paid in FY 2021 based on this June 30, 2019 valuation are specific to each individual Regular and Special Plan in the Plan and include a PLD rate for each Plan as well as a single member rate for each Special Plan and two member rates for each Regular Plan, where the Regular Plan member rates vary based on the applicable normal retirement age per each member of the Plan. These actual rates are developed in the risk-sharing framework process and are not contained within this report, but a general outline of this process is included as the last element of this section of this report.

In addition, any PLDs that have Initial Unpooled Unfunded Actuarial Liability (IUUAL) balances also make additional contributions to repay these balances in addition to their PLD contribution rates.

## Description of Rate Components

The rate components described here are the Actuarially Determined Plan Rates, based on the aggregation of all of the Regular and Special Plans in the Plan, and the Plan-Specific Normal Cost Rates that are anticipated to be the basis from which the risk-sharing contribution rates that will actually be paid by the PLDs and members in FY 2021 will be determined.

<u>Actuarially Determined Plan Total Rate</u>

The Actuarially Determined Plan Total Rate is developed based on the entirety of the Consolidated Plan and consists of two elements: the Actuarially Determined Plan Normal Cost Rate and the Actuarially Determined Plan UAL Amortization Rate.

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. 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. These individual amounts for each Regular and Special Plan are then added to get the total normal cost dollars for the Plan and then divided by the total payroll for the Plan to get the Actuarially Determined Plan Normal Cost Rate.

## SECTION V – CONTRIBUTIONS

The pooled UAL 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 contributions plus current assets. Under the Consolidated Plan, the Actuarially Determined Plan UAL Amortization Rate is calculated for the Consolidated Plan in total based on the pooled UAL being amortized over a 20-year period commencing with the June 30, 2015 valuation date and any layers of pooled UAL 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 the Actuarially Determined Plan UAL Amortization Rate.

As a reminder, these rates are not paid by any PLD or member and instead determine the level of the contributions in aggregate that needs to be paid into the Plan. The risk-sharing framework allocates this cost level, with some adjustments, based on the relative rates of the Plan-Specific Normal Cost Rates and determines the rates that are paid by every PLD and member in the Consolidated Plan based on each member's specific Plan.

Plan-Specific Normal Cost Rates

Following the procedure outlined above to develop the total normal cost dollars for each specific Regular and Special Plan, these Plan-Specific totals are then divided by the total payroll for each specific Plan to get the Plan-Specific Normal Cost Rate for that Plan. This procedure is followed for each Regular and Special Plan in the Consolidated Plan.

IUUAL Payments

PLDs that either enter the Consolidated Plan with liabilities in excess of their assets or make Plan changes resulting in individual liability amounts have additional contributions required. They make payments on their Individual Unpooled Unfunded Actuarial Liability (IUUAL), until their IUUAL is fully paid off. IUUAL payments are made as specific dollar amounts on a schedule rather than as a rate applied to payroll. The System now treats future IUUAL payments as receivable contributions that are already included in the asset values provided and so are not separately identified in the Section I summary tables.

**SECTION V – CONTRIBUTIONS**

## Contribution Calculations

Table V-1 below presents and compares the Actuarially Determined Plan Total Rate for the Plan in aggregate, as well as its two components, as developed in this valuation and the prior one.

**Table V-1**
**Actuarially Determined Plan Total Rates**

| Valuation Date | June 30, 2018 | June 30, 2019 |
|---|---|---|
| Actuarially Determined Plan Normal Cost Rate | 13.9% | 13.9% |
| Actuarially Determined Plan UAL Amortization Rate | 4.7% | 4.9% |
| Actuarially Determined Plan Total Rate | 18.6% | 18.8% |

The remainder of this section details the calculation of the above rates, including developing the Actuarially Determined Plan UAL Amortization Rate from its components and developing the Plan-Specific Normal Cost Rates for each Regular and Special Plan in the Consolidated Plan as well as the Actuarially Determined Plan Normal Cost Rate for the Plan in aggregate.

Table V-2 shows the development of the Plan-Specific Normal Cost Rates for each Regular and Special Plan as well as the Actuarially Determined Plan Normal Cost Rate.

**Table V-2**
**Development of Plan-Specific Normal Cost Rates and Actuarially Determined Plan Normal Cost Rate**

| | | | Plan-Specific | | |
|---|---|---|---|---|---|
| Specific Plan | Initial Normal Cost Dollars | Valuation Salary | Normal Cost Rate | Total Salary | Total Normal Cost Dollars |
| **Regular AC** | 42,901,870 | 324,807,356 | **13.2%** | 363,504,972 | 47,982,656 |
| **Regular AN** | 3,043,308 | 28,192,994 | **10.8%** | 31,360,773 | 3,386,963 |
| **Regular BC** | 158,582 | 2,138,308 | **7.4%** | 2,399,695 | 177,577 |
| **Special 1C** | 2,984,148 | 15,452,170 | **19.3%** | 16,559,592 | 3,196,001 |
| **Special 2C** | 13,367,702 | 90,880,505 | **14.7%** | 98,561,861 | 14,488,594 |
| **Special 3C** | 10,001,448 | 58,600,272 | **17.1%** | 63,278,941 | 10,820,699 |
| **Special 4C** | 787,541 | 5,649,589 | **13.9%** | 6,023,945 | 837,328 |
| **Special 1N** | 71,805 | 439,131 | **16.4%** | 464,347 | 76,153 |
| **Special 2N** | 269,253 | 2,314,724 | **11.6%** | 2,518,406 | 292,135 |
| **Special 3N** | 1,231,027 | 9,016,615 | **13.7%** | 9,606,377 | 1,316,074 |
| **Special 4N** | 75,426 | 759,235 | **9.9%** | 804,097 | 79,606 |
| Total for Plan in Aggregate | | | | 595,083,006 | 82,653,786 |
| **Actuarially Determined Plan Normal Cost Rate** | | | | | **13.9%** |

## SECTION V – CONTRIBUTIONS

Table V-3 below provides the development of the 4.9% UAL amortization payment rate as of June 30, 2019 that was shown in Table V-1 for the Consolidated Plan in aggregate.

**Table V-3**
**Derivation of Actuarially Determined Plan UAL Amortization Rate**

| | |
|---|---|
| 1. Actuarial Liability (AL) | $ 3,258,819,605 |
| 2. Actuarial Value of Assets (AVA) | 2,918,585,814 |
| 3. Unfunded Actuarial Liability (UAL) | $ 340,233,791 |
| 4.Remaining Balances of Prior Amortization Bases | |
| a. Original UAL Amount | $ 272,536,766 |
| b. 2016 (Gain)/Loss Base | 113,329,162 |
| c. 2017 (Gain)/Loss Base | 9,814,302 |
| d. 2018 (Gain)/Loss Base | (76,309,197) |
| e. 2019 (Gain)/Loss Base | 20,862,758 |
| f. Sum of the Bases | $ 340,233,791 |
| 5. UAL Amortizations | |
| a. Original UAL Amount 16 Years | $ 23,204,768 |
| b. 2016 (Gain)/Loss Base 17 Years | 9,238,312 |
| c. 2017 (Gain)/Loss Base 18 Years | 768,534 |
| d. 2018 (Gain)/Loss Base 19 Years | (5,757,365) |
| e. 2019 (Gain)/Loss Base 20 Years | 1,520,601 |
| f. Sum of Amortization Payments | $ 28,974,850 |
| 6. Covered Payroll | $ 595,083,006 |
| 7. UAL Amortization Rate | |
| a. Original UAL Amount 16 Years | 3.9% |
| b. 2016 (Gain)/Loss Base 17 Years | 1.6% |
| c. 2017 (Gain)/Loss Base 18 Years | 0.1% |
| d. 2018 (Gain)/Loss Base 19 Years | (1.0%) |
| d. 2019 (Gain)/Loss Base 20 Years | 0.3% |
| **e. Sum of UAL Amortization Rates** | **4.9%** |

**SECTION V – CONTRIBUTIONS**

The Actuarially Determined Plan Normal Cost Rate developed in Table V-2 is combined with the Actuarially Determined Plan UAL Amortization Rate developed in Table V-3 to determine the Actuarially Determined Plan Total Rate. This Actuarially Determined Plan Total Rate, along with the Plan-Specific Normal Cost Rates, will be used in the risk-sharing framework to develop the risk-sharing contribution rates that will actually be paid by the PLDs and members in FY 2021. Since they are developed in that process outside of the actuarial valuations, these actual rates are not included in this report, but for informational purposes, this section is concluded with a general outline of this methodology.

## Risk-Sharing Contribution Methodology

As mentioned previously, the actual FY 2021 rates will be developed based on the results of this June 30, 2019 valuation, reflecting application of the risk-sharing contribution methodology. Details of the application of this methodology will be determined by the Board, but we have provided a general description of this methodology to communicate how it operates. This basic information is thus useful for informational purposes as it can be provided in advance of the full rates that will be developed and provided under separate cover, but can only be done after the specifics of the methodology for this year are finalized and adopted by the Board.

Note that while this section provides a summary of the principles of the risk-sharing contribution methodology adopted by the Board, the specific details of the methodology to be used in developing the FY 2021 rates from the results of this June 30, 2019 actuarial valuation have not yet been finalized and thus any or all details of the methodology as outlined here may change prior to finalization and adoption.

Most of the local districts in the State of Maine participate in this Consolidated Plan for PLDs. The Plan offers a number of specific Plan options from which each PLD can choose, with each option having its own specific contributions associated with it to be paid by both the member and the PLD. Under the risk-sharing contribution methodology, both the member contributions and the PLD contributions will be paid as rates that are set annually based on the actuarial valuation process. The June 30, 2018 valuation setting the Fiscal Year 2020 contribution rates was the first valuation used to develop member and PLD contribution rates based on this risk-sharing methodology as prior to the 2018 valuation, the member rates were static and set by the Board while the PLD rates were established using the corridor funding methodology. This June 30, 2019 valuation will be used as the basis to determine the Fiscal Year 2021 contribution rates for members and PLDs that will be paid.

Under the Plan's risk-sharing contribution methodology, PLD and member rates are developed for each Regular and Special Plan within the Plan. First, Plan-Specific Normal Cost Rates are developed for each Plan and then combined to develop the Actuarially Determined Plan Normal Cost Rate, which is the aggregate normal cost rate for the Plan as a whole. These rates represent the cost of providing the next year's benefits. The Actuarially Determined Plan UAL Amortization Rate is also developed based on amortization of the aggregated UAL. The Actuarially Determined Plan Total Rate is then determined as the sum of the Actuarially

## SECTION V – CONTRIBUTIONS

Determined Plan Normal Cost Rate and the Actuarially Determined Plan UAL Amortization Rate. This Actuarially Determined Plan Total Rate is then allocated to each Regular and Special Plan relative to the Plan-Specific Normal Cost Rates. The resulting rate for each individual Regular and Special Plan is then allocated between the rate to be paid by the PLD and the rate to be paid by the members. In the case of the three Regular Plans, the process further develops distinct member rates based on whether a member is covered by the provisions with an age 60 normal retirement age or an age 65 normal retirement age.

The implementation of the risk-sharing framework to develop the contribution rates to be paid based on each valuation includes further refinements based on details adopted by the Board for the year in implementation, which include maximum rates and phasing-in of change in rates from prior years. The Board considers factors specific to the Plan in aggregate as well as the resulting rates in determining the refinements of the implementation for the year.

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

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

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

- Table VI-1: Accrued Benefits information

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

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

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

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

- Table VI-6: Analysis of Financial Experience
- Table VI-7: Schedule of Funded Liabilities by Type

The present value of accrued benefits, the total pension liability (GASB 67/68), and the actuarial liability (GAAFR) disclosures in this section are all determined assuming that the Plan is ongoing and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities as of June 30, 2019 are discounted at the assumed valuation interest rate of 6.75% per annum in all of these disclosures.

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

Table VI-1 below includes the relevant amounts as of June 30, 2018 and June 30, 2019 as well as a reconciliation between the two dates under FASB ASC Topic 960.

**Table VI-1**
**Accrued Benefits Information**

| | June 30, 2018 | June 30, 2019 |
|---|---|---|
| **FASB ASC Topic 960 Basis** | | |
| 1. Present Value of Benefits Accrued to Date (PVAB) | | |
| a. Members Currently Receiving Payments | $ 1,678,397,141 | $ 1,790,898,244 |
| b. Terminated Vested Members | 140,168,941 | 136,785,016 |
| c. Active Members | 981,463,550 | 1,028,645,522 |
| d. Total PVAB | $ 2,800,029,632 | $ 2,956,328,782 |
| 2. Assets at Market Value (MVA) | 2,816,179,855 | 2,953,156,096 |
| 3. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero | $ 0 | $ 3,172,686 |
| 4. Ratio of MVA to PVAB (2)/(1)(d) | 100.6% | 99.9% |
| **Change in Present Value of Benefits Accrued to Date during FY 2017** | | |
| Increase/(Decrease) during Year Attributable to: | | |
| Passage of Time | $ 183,510,910 | |
| Benefits Paid | (165,399,679) | |
| Assumption Changes | 0 | |
| Plan Changes | 0 | |
| Benefits Accrued, Other Gains/Losses | 138,187,919 | |
| Net Increase/(Decrease) | $ 156,299,150 | |

Table VI-2 that follows shows the changes in the total pension liability (TPL), the Plan's fiduciary net position (FNP) (i.e., fair value of the Plan's net assets), and the net pension liability (NPL) during the measurement year ending June 30, 2019 as well as related ratios calculated under the provisions of GASB Statement No. 67 for the Plan.

As of the June 30, 2019 valuation, the fiduciary net position for this Plan was projected to be available to make all projected future benefit payments for current Plan members. As such, the long-term expected rate of return on the Plan's investments was applied to all periods of projected benefit payments in determining the total pension liability under GASB Nos. 67 and 68. The projection of cash flows used to determine the discount rate assumed that the member and PLD contribution rates will be at the actuarially determined rates in aggregate.

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

| Table VI-2<br>Schedule of Changes in Net Pension Liability and Related Ratios<br>FY 2019 | |
|---|---|
| **Total Pension Liability (TPL)** | |
| Service Cost (SC) | $ 78,317,217 |
| Interest (Includes Interest on SC) | 208,360,684 |
| Changes of Benefit Terms | 0 |
| Differences Between Actual and Expected Experience | 47,684,163 |
| Changes of Assumptions | 0 |
| Benefit Payments, Including Refunds of Member Contributions | (165,399,679) |
| **Net Change in TPL** | **168,962,385** |
| **Beginning of Year (BOY) TPL** | **3,089,857,220** |
| **End of Year (EOY) TPL** | **$ 3,258,819,605** |
| **Plan Fiduciary Net Position (FNP)** | |
| PLD (Employer) Contributions | $ 61,487,037 |
| Member Contributions | 54,927,202 |
| Transfers | 48,552 |
| Net Investment Income | 188,620,106 |
| Benefit Payments, Including Refunds of Member Contributions | (165,399,679) |
| Administrative Expenses | (2,706,977) |
| Net Change in FNP | $ 136,976,241 |
| **BOY FNP** | **2,816,179,855** |
| **EOY FNP** | **$ 2,953,156,096** |
| **EOY Net Pension Liability (NPL)** | **$ 305,663,509** |
| FNP as a Percentage of TPL | 90.6% |
| Covered Payroll (Payroll)* | $ 593,884,355 |
| NPL as a Percentage of Payroll | 51.5% |

*For FY 2019

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

None.

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

A ten-year schedule of changes in NPL and related ratios is to be included within the CAFR for PERS. However, based on GASB guidance, this ten-year history can be built one year at a time following implementation. We have shown only the current year of this *Schedule of Changes in Net Pension Liability and Related Ratios* above and believe that you can accumulate the individual years in the MainePERS CAFR to build this schedule to show the full ten-year schedule over time. Notes to this schedule should be included for any factors significantly impacting the trends reported within the period shown in this schedule at that time. As of June 30, 2019, we have not included such a note in the Notes to Schedule of Changes in Net Pension Liability and Related Ratios above. However, it is our expectation that the System's staff will make the final determination regarding any notes needed for this schedule and are available to provide any information they may need for this purpose.

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

**Table VI-3**
**Sensitivity of Net Pension Liability to Changes in Discount Rate**
**FY 2019**

| | 1% Decrease 5.75% | Discount Rate 6.75% | 1% Increase 7.75% |
|---|---|---|---|
| Total Pension Liability (TPL) | $3,649,437,893 | $ 3,258,819,605 | $ 2,893,433,579 |
| Plan Fiduciary Net Position (FNP) | 2,953,156,096 | 2,953,156,096 | 2,953,156,096 |
| Net Pension Liability (NPL) | $ 696,281,797 | $ 305,663,509 | $ (59,722,517) |
| FNP as a Percentage of TPL | 80.9% | 90.6% | 102.1% |

A one percent decrease in the discount rate increases the TPL by approximately 12% and increases the NPL by approximately 128%. A one percent increase in the discount rate decreases the TPL by approximately 11% and decreases the NPL by approximately 120%.

Table VI-4 that follows provides information relating to the employer contributions for the Plan. Under GASB Statement No. 67, if an actuarially determined contribution (ADC) or a contractually or statutorily required contribution (CRC) is developed for a single employer or cost-sharing plan, the following schedule is required. For purposes of this schedule, an ADC is a contribution amount determined in accordance with Actuarial Standards of Practice and a CRC is based on statutory or contractual requirements. Both should exclude any amounts to finance specific liabilities of individual employers of the Plan. If an ADC is available, the schedule of employer contributions should be developed on that basis. If there is no ADC, but there is a

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

CRC, the schedule should be developed on that basis. Only if neither an ADC nor a CRC is developed can this schedule be omitted from the PERS's CAFR.

The Consolidated Plan's corridor rates, which are the basis on which the FY 2019 contribution rates were determined, meet the definition of an ADC, so for this Plan an additional year should be added to the schedule reflecting FY 2019 on that corridor rate basis. Based on GASB guidance, a full ten years of information should be shown in this schedule if it is available, but this ten-year history can be built one year at a time following implementation. We have shown only the current year of this *Schedule of Employer Contributions* below and believe that you can accumulate these in the MainePERS CAFR to build this schedule to show the full ten-year schedule over time.

Only the current year of the *Notes to Schedule of Employer Contributions* below needs to be included in the notes to this schedule. However, any factors that significantly affect trends in the Schedule of Employer Contributions at any point in the ten-year period should also be included in the notes to this schedule. We are not aware of any such note needed for the basis of the FY 2019 ADC, but it is our expectation that the System's staff will make the final determination regarding any notes needed for this schedule and are available to provide any additional information that they may need for this purpose.

**Table VI-4**
**Schedule of Employer Contributions**
**FY 2019**

| | |
|---|---|
| Actuarially Determined Contribution (ADC) | $ 61,170,089 |
| Contributions in Relation to the ADC | 61,170,089 |
| Contribution Deficiency/(Excess) | $ 0 |
| Covered Payroll (Payroll) | $ 593,884,355 |
| Contributions as a Percentage of Payroll | 10.30% |

Notes to Schedule of Employer Contributions

| | |
|---|---|
| Valuation Date: | June 30, 2017 |
| Timing: | June 30, 2019 ADC rates based on the corridor methodology calculated based on the 2017 actuarial valuation. |

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

Key Methods and Assumptions Used to Determine Contribution Rates

| | |
|---|---|
| Actuarial Cost Method: | Entry age normal |
| Asset Valuation Method: | Three-year smoothed market |
| Amortization Method: | Calculated rate uses level percentage of pay amortization over closed 20-year periods. When the funded ratio is less than 90%, the contribution rate is adjusted from its prior year level by 10% of the difference to reach the calculated rate. |
| Discount Rate: | 6.875% |
| Amortization Growth Rate: | 2.75% |
| Price Inflation: | 2.75% |
| Salary Increases: | 2.75% plus merit component based on employee's years of service |
| Mortality: | 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 MP_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 |

A complete description of the methods and assumptions used to determine contribution rates for the year ending June 30, 2019 can be found in the June 30, 2017 Actuarial Valuation Report.

Other Information

None.

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

Table VI-5 that follows is provided in this report at the request of MainePERS staff, showing the development of the average remaining service life for the Plan. GASB No. 68 requires some items be recognized by employers into pension expense over a period "equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period." For the current measurement year ending on June 30, 2019, these values are thus developed as of June 30, 2018. The development of this value is shown below, including reflection of the decision by MainePERS to round the resulting value to the nearest whole year.

**Table VI-5**
**Average Expected Remaining Service Lives**
**For Measurement Year Ending June 30, 2019**

| Status | Total Expected Future Service | Count | Average Remaining Service Lives |
|---|---|---|---|
| Active Members | 108,965 | 11,416 | 10 |
| In-Pay Members | 0 | 9,256 | 0 |
| Terminated Vested Members | 0 | 2,319 | 0 |
| Inactives Due Refunds | 0 | 7,779 | 0 |
| Total Membership | 108,965 | 30,770 | 4 |

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

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

**Table VI-6**
**Analysis of Financial Experience**
**Gain and Loss in Actuarial Liability During Fiscal Years Ended June 30**
**Resulting from Differences Between Assumed Experience and Actual Experience**

| Type of Activity | Gain (or Loss) For Fiscal Year Ended June 30, 2014 | Gain (or Loss) For Fiscal Year Ended June 30, 2015 | Gain (or Loss) For Fiscal Year Ended June 30, 2016 | Gain (or Loss) For Fiscal Year Ended June 30, 2017 | Gain (or Loss) For Fiscal Year Ended June 30, 2018 | Gain (or Loss) For Fiscal Year Ended June 30, 2019 |
|---|---|---|---|---|---|---|
| Investment Income | $ 110,262,333 | $(15,798,973) | $ (63,941,136) | $ (76,616) | $ 25,142,719 | $17,765,627 |
| Combined Liability Experience | (19,939,857) | 54,634,906 | 9,142,757 | 2,160,603 | (1,285,304) | (47,684,163) |
| Gain (or Loss) during Year from Financial Experience | $ 90,322,476 | $ 38,835,933 | $ (54,798,379) | $ 2,083,987 | $ 23,857,415 | $(29,918,536) |
| Non-Recurring Items | 0 | (37,593,598) | (50,884,219) | 0 | 59,683,826 | 0 |
| Composite Gain (or Loss) During Year | **$ 90,322,476** | **$ 1,242,335** | **$ (105,682,598)** | **$ 2,083,987** | **$ 83,541,241** | **$(29,918,536)** |

## SECTION VI – FINANCIAL DISCLOSURE INFORMATION

Table VI-7 below compares the Plan's assets as of each valuation date shown to the Plan's actuarial liability divided into three separate groups: liabilities for contributions on deposit for current active members, liabilities for future benefits for inactive members, and employer-financed liabilities for current active members. This Schedule of Funded Liabilities by Type is used to assess funding progress based on what percentage of the liabilities for each of these groups the Plan's assets are sufficient to cover. Per GFOA guidance, this schedule is to include this assessment for the ten most recent years and notes to this schedule should be provided to explain any factors that affect the comparability of the data. We do not believe such a note is needed for the measurement year ending June 30, 2019, but it is our expectation that the System's staff will make the final determination regarding any notes needed for this schedule.

**Table VI-7**
**Schedule of Funded Liabilities by Type**

| | Aggregate Actuarial Liabilities for: | | | | Portion of Actuarial Liabilities Covered by Reported Assets | | |
|---|---|---|---|---|---|---|---|
| Valuation Date June 30, | (1) Active Member Contributions | (2) Retirees Vested Terms, Beneficiaries | (3) Active Members (Employer Financed Portion) | Reported Assets* | (1) | (2) | (3) |
| 2019 | $ 521,610,261 | $ 1,927,683,260 | $ 809,526,084 | $2,918,585,814 | 100% | 100% | 58% |
| 2018 | 494,411,535 | 1818,566,082 | 776,879,603 | 2,764,807,391 | 100 | 100 | 58 |
| 2017 | 472,362,260 | 1,721,058,286 | 823,240,175 | 2,609,806,231 | 100 | 100 | 51 |
| 2016 | 452,446,198 | 1,654,981,662 | 782,312,774 | 2,489,157,281 | 100 | 100 | 49 |
| 2015 | 438,925,747 | 1,543,532,803 | 738,477,459 | 2,433,186,149 | 100 | 100 | 61 |
| 2014 | 423,097,001 | 1,462,031,828 | 724,529,016 | 2,379,733,634 | 100 | 100 | 68 |
| 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 | 347,801,024 | 1,083,097,662 | 654,598,374 | 2,011,019,138 | 100 | 100 | 89 |

* 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 liability of the Plan.

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Acton, Town of | 0361 | A | 2 | | No | 7/1/2016 | |
| Alfred, Town of | 0369 | A | | | Yes | 1/1/2019 | |
| Androscoggin County | 0067 | A[1] | 1[1] | 2[1] | Yes | 7/1/1994 | |
| Androscoggin Valley Council of Governments | 0231 | A | | | Yes | 7/1/1996 | |
| Anson-Madison Sanitary District | 0365 | A | | | Yes | 7/1/2017 | |
| Aroostook County | 0106 | A | | | Yes | 7/1/1994 | |
| Aroostook Waste Solutions | 0267 | A | | | Yes | 7/1/1996 | |
| Auburn Housing Authority | 0145 | A | | | Yes | 7/1/1994 | |
| Auburn Lewiston Airport | 0256 | A | | | Yes | 7/1/1996 | |
| Auburn Public Library | 0043 | A | | | FO | 7/1/1996 | 7/1/2001 |
| Auburn Water and Sewer District | 0052 | A | | | Yes | 7/1/1994 | |
| Auburn, City of | 0027 | A | 2 | 3[2] | Yes | 7/1/1994 | |
| Augusta, City of | 0023 | A | 2 | 3[3] | Yes | 7/1/1994 | |
| Augusta Housing Authority | 0351 | A | | | Yes | 4/1/2014 | |
| Baileyville, Town of | 0069 | A | 3 | | Yes | 7/1/1996 | |
| Bangor Housing Authority | 0288 | A | | | Yes | 7/1/1994 | |
| Bangor Public Library | 0022 | A | | | Yes | 7/1/1996 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Bangor Water District | 0059 | B[4] | | | Yes | 7/1/1996 | |
| Bangor, City of[5] | 0020 | A | 2 | | Yes | 7/1/1996 | |
| Bar Harbor, Town of | 0015 | A | 4 | | Yes | 7/1/1995 | |
| Bath Water District | 0019 | A | | | Yes | 7/1/1994 | |
| Bath, City of | 0073 | A | 2 | 3 | Yes | 7/1/1996 | |
| Baxter Academy of Technology And Sciences | 0348 | A | | | Yes | 7/1/2013 | |
| Belfast Water District | 0132 | A | | | Yes | 7/1/1995 | |
| Belfast, City of | 0035 | A | 2 | | Yes | 7/1/1996 | |
| Berwick Sewer District | 0207 | A | | | Yes | 7/1/1994 | |
| Berwick, Town of | 0108 | A | 1[6] | | FO | 7/1/1996 | 7/1/2008 |
| Bethel, Town of | 0246 | A | | | Yes | 7/1/1996 | |
| Biddeford Housing Authority | 0310 | A | | | Yes | 7/1/2007 | |
| Biddeford, City of | 0158 | A | 3[7] | | FO | 7/1/2010 | 7/1/2010 |
| Boothbay Harbor Sewer District | 0363 | A | | | Yes | 1/1/2017 | |
| Boothbay Harbor, Town of | 0146 | A | 2 | | Yes | 7/1/1996 | |
| Boothbay Region Water District | 0298 | A | 2 | | Yes | 1/1/2002 | |
| Bowdoinham Water District | 0319 | A | | | Yes | 1/1/2009 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Brewer Housing Authority | 0248 | A | | | Yes | 7/1/1994 | |
| Brewer, City of | 0063 | A[8] | 3[8] | | Yes | 7/1/1996 | |
| Brownville, Town of | 0177 | A | | | No | 7/1/2010 | |
| Brunswick Fire & Police | 0292 | A | 1[9] | 3[9] | FO | 7/1/1997 | 7/1/1997 |
| Brunswick Public Library Association | 0273 | A | | | FO | 7/1/1995 | 7/1/1995 |
| Brunswick Sewer District | 0072 | A | | | Yes | 7/1/1996 | |
| Brunswick, Town of | 0042 | A | | | FO | 7/1/1995 | 7/1/2000 |
| Buckfield, Town of | 0344 | A | | | No | 1/1/2013 | |
| Bucksport, Town of | 0130 | A | 4[10] | | No | 7/1/1995 | |
| Calais, City of | 0036 | A | | | FO | 7/1/1996 | 7/1/1996 |
| Camden, Town of | 0008 | A | 2[11] | | Yes | 7/1/1994 | |
| Cape Elizabeth Police | 0317 | A | 2 | | Yes | 7/1/2008 | |
| Caribou Fire & Police | 0208 | A | 1 | 2 | No | 7/1/1996 | |
| Carrabassett Valley, Town of | 0277 | A | | | FO | 7/1/1994 | 7/1/1994 |
| Chesterville, Town of | 0295 | A[12] | | | Yes | 7/1/1999 | |
| China, Town of | 0235 | A | | | FO | 7/1/1996 | 7/1/2008 |
| Coastal Counties Workforce | 0301 | A[13] | | | Yes | 7/1/2003 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Community School Dist. #912 | 0252 | A | | | Yes | 7/1/1996 | |
| Corinna, Town of | 0217 | A | | | Yes | 7/1/1996 | |
| Cornville Regional Charter School | 0345 | A | | | Yes | 7/1/2013 | |
| Cumberland County | 0005 | A | 2[14] | | Yes | 7/1/1996 | |
| Cumberland, Town of | 0216 | A | 2 | 3[15] | Yes | 7/1/1995 | |
| Damariscotta, Town of | 0191 | A | | | Yes | 7/1/2011 | |
| Danforth, Town of | 0367 | A | | | Yes | 7/1/2017 | |
| Dayton, Town of | 0355 | A | | | Yes | 7/1/2014 | |
| Dexter, Town of | 0097 | A | | | Yes | 7/1/1996 | |
| Dover-Foxcroft Water District | 0137 | A | | | Yes | 7/1/1994 | |
| Dover-Foxcroft, Town of | 0167 | A | | | No | 7/1/1995 | |
| Durham, Town of | 0234 | A | | | No | 7/1/1996 | |
| Eagle Lake Water & Sewer District | 0274 | A | | | Yes | 7/1/1996 | |
| East Millinocket, Town of | 0054 | A | 2 | | Yes | 7/1/1996 | |
| Easton, Town of | 0240 | A | | | Yes | 7/1/1994 | |
| Eliot, Town of | 0180 | A | 1[16] | | Yes | 7/1/1994 | |
| Ellsworth, City of | 0013 | A | 4 | | Yes | 7/1/1995 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Erskine Academy | 0249 | A | | | No | 7/1/1994 | |
| Fairfield, Town of | 0260 | A | 3 | | Yes | 7/1/1995 | |
| Falmouth Memorial Library | 0058 | A | | | Yes | 7/1/1996 | |
| Falmouth, Town of | 0087 | A | 2[17] | 3[17] | Yes | 7/1/1996 | |
| Farmington Village Corporation | 0118 | A | | | No | 7/1/1994 | |
| Farmington, Town of | 0100 | A | 1 | | Yes | 7/1/1995 | |
| Fort Fairfield Housing Authority | 0275 | A | | | FO | 7/1/2002 | 7/1/1994 |
| Fort Fairfield Utilities District | 0131 | A | | | Yes | 7/1/1996 | |
| Fort Fairfield, Town of | 0017 | A | | | Yes | 7/1/2000 | |
| Fort Kent, Town of | 0091 | A | 2[18] | | No | 7/1/2019 | |
| Franklin County | 0102 | A | 3[19] | | Yes | 7/1/2006 | |
| Freeport, Town of | 0142 | A | 2[13] | | Yes | 7/1/2003 | |
| Frenchville, Town of | 0098 | A | | | No | 7/1/1996 | |
| Fryeburg, Town of | 0149 | A | | | No | 1/1/2011 | |
| Gardiner Water District | 0221 | A | | | No | 7/1/1994 | |
| Gardiner, City of | 0024 | A | 3 | | FO | 7/1/1996 | 7/1/2009 |
| Glenburn, Town of | 0174 | A | | | Yes | 7/1/1994 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Good Will Home Association | 0347 | A | | | Yes | 7/1/2013 | |
| Gorham Fire and Police | 0334 | A | 3 | | Yes | 7/1/2009 | |
| Gorham, Town of | 0133 | A | | | Yes | 7/1/1996 | |
| Gould Academy | 0205 | A | | | No | 7/1/1996 | |
| Grand Isle, Town of | 0312 | B | | | Yes | 7/1/2008 | |
| Greater Augusta Utility District[20] | 0311 | A | | | Yes | 1/1/2008 | |
| Greenville, Town of | 0112 | A | 2[21] | | Yes | 7/1/1996 | |
| Hallowell, City of | 0160 | A | | | Yes | 7/1/1996 | |
| Hampden Water District | 0183 | A | | | Yes | 7/1/1996 | |
| Hampden, Town of | 0151 | A | 3[22] | | FO | 7/1/1996 | 7/1/2009 |
| Hancock County | 0056 | A | 4[23] | | Yes | 7/1/1994 | |
| Hancock, Town of | 0353 | A | | | Yes | 7/1/2014 | |
| Harpswell, Town of | 0270 | A | | | Yes | 7/1/1994 | |
| Harrison, Town of | 0280 | B[24] | | | Yes | 7/1/1994 | |
| Hartland, Town of | 0360 | A | | | Yes | 1/1/2016 | |
| Hermon, Town of | 0150 | A | | | No | 7/1/1996 | |
| Hodgdon, Town of | 0215 | A | | | FO | 7/1/1996 | 7/1/2007 |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Holden, Town of | 0338 | A | 4 | | Yes | 7/1/2011 | |
| Houlton Water Company | 0026 | A | | | Yes | 7/1/1995 | |
| Houlton, Town of | 0010 | A | 4[10] | | Yes | 7/1/1996 | |
| Jackman Utility District | 0294 | A | | | Yes | 7/1/1996 | |
| Jay, Town of | 0045 | A | 2[25] | | Yes | 7/1/1994 | |
| Kennebec County | 0047 | A | 2[26] | | Yes | 7/1/1995 | |
| Kennebec Sanitary Treatment District | 0220 | A | | | FO | 7/1/1995 | 7/1/1995 |
| Kennebec Water District | 0031 | A | | | Yes | 7/1/1996 | |
| Kennebunk Light & Power District | 0062 | A | | | Yes | 7/1/1994 | |
| Kennebunk Sewer District | 0201 | A | | | FO | 7/1/1994 | 7/1/2000 |
| Kennebunk, Kennebunkport & Wells Water District | 0255 | A | | | FO | 7/1/1996 | 7/1/1999 |
| Kennebunk, Town of | 0084 | A | 2[27] | | Yes | 7/1/1996 | |
| Kennebunkport, Town of | 0188 | A | 1 | | FO | 7/1/1996 | 7/1/2006 |
| Kittery Water District | 0012 | A | | | Yes | 7/1/1994 | |
| Kittery, Town of | 0014 | A | 1[28] | | Yes | 7/1/1995 | |
| Knox County Sheriff's Office | 0359 | A | 3[29] | | No | 1/1/2016 | |
| Lebanon, Town of | 0181 | A | | | Yes | 7/1/1996 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Levant, Town of | 0339 | A | | | Yes | 7/1/2011 | |
| Lewiston Housing Authority | 0154 | A | | | Yes | 7/1/1994 | |
| Lewiston, City of | 0048 | A | 1 | 2 | Yes | 7/1/1996 | |
| Lewiston/Auburn 9-1-1 | 0291 | A | | | Yes | 7/1/1994 | |
| Lewiston-Auburn Water Pollution Control Authority | 0163 | A | | | FO | 7/1/1996 | 7/1/1996 |
| Limestone, Town of | 0245 | A | | | Yes | 7/1/2006 | |
| Lincoln & Sagadahoc Multi-County Jail Authority | 0304 | A | 2 | | Yes | 7/1/2004 | |
| Lincoln Academy | 0134 | A | | | Yes | 7/1/1994 | |
| Lincoln County | 0095 | A | | | Yes | 7/1/2004 | |
| Lincoln County Sheriff's Office | 0302 | A | 2[13] | | Yes | 7/1/2003 | |
| Lincoln Sanitary District | 0219 | A | | | Yes | 7/1/1994 | |
| Lincoln Water District | 0092 | A | | | Yes | 7/1/1994 | |
| Lincoln, Town of | 0076 | A | 3 | | No | 7/1/1996 | |
| Linneus, Town of | 0214 | A | | | No | 7/1/1996 | |
| Lisbon Water Department | 0243 | A | | | FO | 7/1/1996 | 7/1/2007 |
| Lisbon, Town of | 0103 | A | 2 | | Yes | 7/1/1996 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Livermore Falls Water District | 0032 | A | | | Yes | 7/1/1994 | |
| Livermore Falls, Town of | 0109 | A | | | No | 7/1/1996 | |
| Lovell, Town of | 0276 | A | | | Yes | 7/1/1996 | |
| Lubec Water District | 0088 | A | | | Yes | 7/1/1996 | |
| Lubec, Town of | 0228 | A | | | No | 7/1/1996 | |
| M.A.D.S.E.C. | 0297 | A | | | Yes | 7/1/1999 | |
| Madawaska Water District | 0236 | A | | | Yes | 7/1/1994 | |
| Madawaska, Town of | 0082 | A | | | Yes | 7/1/1996 | |
| Maine Academy of Natural Sciences | 0346 | A | | | Yes | 7/1/2013 | |
| Maine County Commissioners Association | 0225 | A | | | No | 7/1/1996 | |
| Maine Maritime Academy | 0038 | A | 2 | | Yes | 7/1/1996 | |
| Maine Municipal Association | 0055 | A | | | Yes | 7/1/2009 | |
| Maine Municipal Bond Bank | 0093 | A | | | Yes | 7/1/1995 | |
| Maine Principals' Association | 0105 | A | | | Yes | 7/1/1994 | |
| Maine Public Employees Retirement System | 0290 | A | | | Yes | 7/1/1994 | |
| Maine School Management Association | 0239 | A | | | Yes | 7/1/1994 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Maine School of Science and Mathematics | 0352 | A | | | Yes | 7/1/2014 | |
| Maine State Housing Authority | 0169 | A | | | Yes | 7/1/2005 | |
| Maine Turnpike Authority | 0049 | A | | | Yes | 7/1/1994 | |
| Maine Veterans' Homes | 0271 | A | | | Yes | 7/1/1994 | |
| Maine Virtual Academy | 0357 | A | | | Yes | 7/1/2015 | |
| Mapleton, Castle Hill, & Chapman, Town of | 0265 | A | | | Yes | 7/1/1996 | |
| Mars Hill Utility District | 0283 | A | | | Yes | 7/1/1994 | |
| Mars Hill, Town of | 0227 | A | | | Yes | 7/1/1996 | |
| Mechanic Falls Sanitary District | 0282 | A | | | FO | 7/1/1994 | 7/1/2002 |
| Mechanic Falls, Town of | 0114 | A | | | Yes | 7/1/1994 | |
| Medway, Town of | 0194 | A | | | Yes | 7/1/1996 | |
| Midcoast Council of Governments | 0343 | A | | | Yes | 7/1/2012 | |
| Milford, Town of | 0186 | A | | | No | 7/1/1996 | |
| Millinocket, Town of | 0003 | A | 3 | 4 | Yes | 7/1/1996 | |
| Milo Water District | 0238 | A | | | No | 7/1/1996 | |
| Monmouth, Town of | 0316 | A | 3 | | Yes | 7/1/2008 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Monson, Town of | 0184 | A | | | No | 7/1/1996 | |
| Mount Desert Island Regional School District | 0120 | A | | | Yes | 7/1/1996 | |
| Mount Desert Water District | 0300 | A[13] | | | Yes | 7/1/2003 | |
| Mount Desert, Town of | 0016 | A | 3[30] | | Yes | 7/1/1996 | |
| New Gloucester, Town of | 0210 | A | | | FO | 7/1/1995 | 7/1/2007 |
| Newport Water District | 0313 | A | | | Yes | 7/1/2008 | |
| Newport, Town of | 0314 | A | 2 | | Yes | 7/1/2008 | |
| North Berwick Water District | 0308 | A | | | Yes | 7/1/2006 | |
| North Berwick, Town of | 0254 | A | 1 | | No | 7/1/1996 | |
| Northern Oxford Regional Solid Waste Board | 0354 | A | | | Yes | 7/1/2014 | |
| Norway Water District | 0136 | A | | | FO | 7/1/1995 | 7/1/2000 |
| Norway, Town of | 0125 | A | | | FO | 7/1/1996 | 7/1/2000 |
| Ogunquit, Town of | 0303 | A | 1 | | Yes | 7/1/2004 | |
| Old Orchard Beach, Town of | 0140 | A | 2 | 3/1[31] | Yes | 7/1/2003 | |
| Old Town Housing Authority | 0262 | A | | | FO | 7/1/1994 | 7/1/1994 |
| Old Town Water District | 0079 | A | | | No | 7/1/1994 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Old Town, City of | 0111 | A | 2[32] | 3[32] | No | 7/1/1995 | |
| Orland, Town of | 0166 | A | | | No | 7/1/1996 | |
| Orono, Town of | 0061 | A | 2[33] | | FO | 7/1/1996 | 7/1/2002 |
| Orrington, Town of | 0209 | A | 3 | | No | 7/1/1995 | |
| Otis, Town of | 0364 | A | | | Yes | 7/1/2017 | |
| Otisfield, Town of | 0193 | A | | | FO | 7/1/1996 | 7/1/1996 |
| Oxford County | 0057 | A[13] | 2 | | Yes | 7/1/1994 | |
| Oxford, Town of | 0200 | A | | | No | 7/1/1996 | |
| Paris Utility District | 0159 | A | | | Yes | 7/1/1995 | |
| Paris, Town of | 0127 | A | | | Yes | 7/1/1996 | |
| Penobscot County | 0011 | A | 2[34] | | Yes | 7/1/1994 | |
| Penquis | 0237 | A | | | No | 7/1/1995 | |
| Phippsburg, Town of | 0202 | A | 3[35] | | Yes | 7/1/1996 | |
| Piscataquis County | 0121 | A | | | Yes | 7/1/1994 | |
| Pittsfield, Town of | 0110 | A | | | No | 7/1/1996 | |
| Pleasant Point Passamaquoddy Reservation Housing Authority | 0165 | A | | | Yes | 7/1/1996 | |
| Poland, Town of | 0336 | A | 1 | | No | 7/1/2010 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Portland Housing Authority | 0185 | A | | | Yes | 7/1/1994 | |
| Portland Public Library | 0041 | A | | | Yes | 7/1/1995 | |
| Portland, City of | 0002 | A | 1 | 2 | Yes | 7/1/1995 | |
| Princeton, Town of | 0258 | A | | | No | 7/1/1996 | |
| Regional School Unit #01 | 0315 | A | 2 | | Yes | 7/1/2008 | |
| Regional School Unit #02 | 0323 | A | | | FO | 7/1/2009 | 7/1/2009 |
| Regional School Unit #04 | 0324 | A | | | Yes | 7/1/2009 | |
| Regional School Unit #05 | 0325 | A | | | Yes | 7/1/2009 | |
| Regional School Unit #09 | 0119 | A | | | Yes | 7/1/1995 | |
| Regional School Unit #10 | 0326 | A | | | Yes | 7/1/2009 | |
| Regional School Unit #16 | 0327 | A | | | Yes | 7/1/2009 | |
| Regional School Unit #20 | 0328 | A | | | Yes | 7/1/2009 | |
| Regional School Unit #21 | 0322 | A | | | FO | 7/1/2009 | 7/1/2009 |
| Regional School Unit #23 | 0329 | A | | | Yes | 7/1/2009 | |
| Regional School Unit #24 | 0320 | A | | | Yes | 7/1/2009 | |
| Regional School Unit #25 | 0321 | A[36] | | | No | 7/1/2009 | |
| Regional School Unit #26 | 0330 | A | | | Yes | 7/1/2009 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Regional School Unit #29 | 0168 | A | | | Yes | 7/1/1996 | |
| Regional School Unit #34 | 0331 | A | | | No | 7/1/2009 | |
| Regional School Unit #49 | 0189 | A | | | No | 7/1/1995 | |
| Regional School Unit #51 | 0198 | A | | | No | 7/1/1996 | |
| Regional School Unit #54 | 0115 | A | | | Yes | 7/1/1996 | |
| Regional School Unit #56 | 0366 | A | | | Yes | 7/1/2017 | |
| Regional School Unit #60 | 0187 | A | | | No | 7/1/1994 | |
| Regional School Unit #67 | 0126 | A | | | Yes | 7/1/2016 | |
| Regional School Unit #71 | 0358 | A | | | Yes | 7/1/2015 | |
| Regional School Unit #73 | 0340 | A | | | Yes | 7/1/2011 | |
| Richmond Utilities District | 0242 | A | | | No | 7/1/1994 | |
| Richmond, Town of | 0213 | A | | | Yes | 7/1/2007 | |
| Rockland, City of | 0018 | A | 3 | | Yes | 7/1/1995 | |
| Rockport, Town of | 0161 | A | | | No | 7/1/1996 | |
| Rumford Fire & Police | 0060 | A | 2[37] | 4 | Yes | 7/1/1995 | |
| Rumford Mexico Sewerage District | 0247 | A | | | Yes | 7/1/1996 | |
| Rumford Water District | 0065 | A | | | Yes | 7/1/1995 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Rumford, Town of | 0090 | A | | | Yes | 7/1/1995 | |
| Sabattus, Town of | 0175 | A | 3[38] | | FO | 7/1/1996 | 7/1/2006 |
| Saco, City of | 0192 | A | 2[39] | 3[39] | No[39] | 7/1/1995 | |
| Sagadahoc County | 0096 | A | 2 | 3[40] | Yes | 7/1/2002 | |
| Sanford Housing Authority | 0152 | A | | | Yes | 7/1/1996 | |
| Sanford Sewerage District | 0089 | A | | | FO | 7/1/1994 | 1/1/2009 |
| Sanford Water District | 0170 | A | | | FO | 7/1/1996 | 7/1/2009 |
| Sanford, City of | 0083 | A | 1/3[41] | 2[41] | FO | 7/1/1995 | 7/1/2002 |
| Scarborough, Town of | 0147 | A | 3[42] | 1[42] | Yes | 7/1/1996 | |
| School Administrative District No. 13 Bingham | 0223 | A | | | Yes | 7/1/1996 | |
| School Administrative District No. 31 Howland | 0050 | A | | | FO | 7/1/1994 | 7/1/1994 |
| School Administrative District No. 41 Milo | 0143 | A | | | Yes | 7/1/1996 | |
| School Administrative District No. 53 Pittsfield | 0129 | A | | | No | 7/1/1996 | |
| Searsport Water District | 0124 | A | | | No | 7/1/1996 | |
| Searsport, Town of | 0117 | A | | | No | 7/1/1996 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Skowhegan, Town of | 0080 | A | 3 | | Yes | 7/1/1996 | |
| Somerset County | 0101 | A | 3[43] | | Yes | 7/1/2005 | |
| South Berwick Sewer District | 0299 | A[13] | | | Yes | 7/1/2003 | |
| South Berwick Water District | 0171 | A | 2 | | Yes | 7/1/1996 | |
| South Berwick, Town of | 0141 | A | 1 | | FO | 7/1/1996 | 7/1/1996 |
| South Portland Housing Authority | 0206 | A | | | Yes | 7/1/1996 | |
| South Portland, City of | 0009 | A | 3[44] | | Yes | 7/1/1995 | |
| Southwest Harbor, Town of | 0368 | A | 2 | | | | |
| St. Agatha, Town of | 0030 | A | | | Yes | 7/1/1996 | |
| Thomaston, Town of | 0164 | A | 2 | | Yes | 1/1/2010 | 1/1/2010 |
| Thompson Free Library | 0318 | A | | | Yes | 1/1/2009 | |
| Topsham Sewer District | 0307 | A[45] | | | Yes | 7/1/2005 | |
| Topsham, Town of | 0081 | A | 2 | 3 | Yes | 7/1/1996 | |
| Trenton, Town of | 0341 | A | | | Yes | 7/1/2011 | |
| Union, Town of | 0342 | A | | | No | 7/1/2012 | |
| United Technologies Center, Region 4 | 0269 | A | | | FO | 7/1/1996 | 7/1/2009 |
| Van Buren Housing Authority | 0229 | A | | | Yes | 7/1/1994 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Van Buren, Town of | 0182 | A | | | Yes | 7/1/1995 | |
| Vassalboro, Town of | 0153 | A | | | Yes | 7/1/1996 | |
| Veazie Fire & Police | 0305 | A | 3[46] | | Yes | 7/1/2004 | |
| Waldo County | 0046 | A | 2[47] | | Yes | 7/1/1994 | |
| Waldo County Technical Center | 0224 | A | | | No | 7/1/1996 | |
| Waldoboro, Town of | 0195 | A | 3 | | Yes | 7/1/1995 | |
| Washburn Water and Sewer District | 0335 | A | | | No | 7/1/2009 | |
| Washburn, Town of | 0230 | A | | | No | 7/1/1994 | |
| Washington County | 0040 | A | 2[48] | | Yes | 7/1/1996 | |
| Waterboro, Town of | 0356 | A | | | No | 1/1/2015 | |
| Waterville Fire & Police | 0066 | A | 3 | | No | 7/1/1996 | |
| Waterville Sewerage District | 0222 | A | | | Yes | 7/1/1994 | |
| Wells Fire and Police | 0349 | A | 2 | | Yes | 7/1/2013 | |
| Wells Ogunquit Community School District #918 | 0266 | A | | | FO | 7/1/1995 | 7/1/1995 |
| Wells, Town of[49] | 0107 | A | | | No | 1/1/2018 | |
| West Bath, Town of | 0333 | A | | | Yes | 7/1/2009 | |
| Westbrook Fire & Police | 0070 | A | 1 | 3 | Yes | 7/1/2006 | |

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

| PLD Name | PLD # | Regular Plan | Special Plan | Special Plan | COLA | Entry Date | FO COLA Date |
|---|---|---|---|---|---|---|---|
| Westbrook, City of | 0122 | A | | | Yes | 7/1/2006 | |
| Wilton, Town of | 0086 | A | 2 | | FO | 1/1/2009 | 1/1/2009 |
| Windham, Town of | 0309 | A | 4 | 3[50] | Yes | 7/1/2006 | |
| Winslow Police, Fire and Public Works | 0362 | A | 2[51] | | Yes | 1/1/2017 | |
| Winter Harbor Utility District | 0250 | A | | | Yes | 7/1/1994 | |
| Winterport Water & Sewer Districts | 0306 | A[45] | | | Yes | 7/1/2005 | |
| Winthrop Utilities District | 0337 | A | | | Yes | 1/1/2011 | |
| Winthrop, Town of | 0179 | A | 2[52] | | FO | 7/1/1994 | 7/1/2003 |
| Wiscasset, Town of | 0417 | A | | | No | 1/1/2012 | |
| Yarmouth Water District | 0278 | A | | | Yes | 7/1/1994 | |
| Yarmouth, Town of | 0116 | A | 1[53] | | Yes | 7/1/1996 | |
| York County | 0037 | A | 2[54] | 1[54] | Yes | 7/1/1996 | |
| York Sewer District | 0139 | A | | | FO | 7/1/1994 | 7/1/2006 |
| York Water District | 0039 | A | | | Yes | 7/1/1996 | |
| York, Town of | 0028 | A | 2[55] | 3[55] | Yes | 7/1/1994 | |

**Notes to Appendix A:**

FO = Future Service COLA only, that is, the benefits attributable to service rendered after the Future Service COLA date.

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

**Footnote Text**

[1] Employees hired prior to July 1, 1997 who are members of the Plan are covered under Plan 1. Corrections Officers and Law Enforcement Officers hired on or after July 1, 1997 are covered under Plan 2. All other employees hired on or after July 1, 1997 will be covered under Regular Plan A.

[2] Plan 3 applicable for future service only from January 1, 2014 for Firefighters hired after July 1, 1989 and from January 1, 2015 for Law Enforcement Officers hired after December 31, 1989.

[3] Plan 3 is applicable for future service only rendered by the City's Firefighters hired after December 31, 1989, effective January 1, 2015.

[4] Plan B applicable to all new hires on or after July 1, 1996. All members in the PLD at July 1, 1996 elected to remain in the 1/50 Plan under Regular Plan A.

[5] Rejoined July 1, 2018, adopting Plan 2 for for future service only rendered by the City's Firefighters and Police Officers.

[6] Plan 1 applicable for future service only for Police Officers from July 1, 2008 and for future service only for Firefighters from July 1, 2010.

[7] Applicable for future service only rendered by Law Enforcement Officers from July 1, 2003. Applicable for future service only rendered by Firefighters from July 1, 2007.

[8] Brewer Water District (P0068) ceased to exist as a separate entity on January 15, 2003 and became part of the City of Brewer (P0063). All Brewer Water District Regular Plan AN members became members of the Regular Plan AC for future service only as of that date.
Plan 3 applicable for future service only rendered by City's Law Enforcement Officers from January 1, 2018.

[9] Plan 1 applicable to Police Officers for future service only after January 1, 2010 and Plan 3 applicable to Firefighters for future service only after January 1, 2010. Some grandparented Police Officers and Firefighters receive all service in Plan 1.

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[10] Plan 4 applicable for future service only rendered by the Town's Firefighters and Police Officers from July 1, 2001.

[11] Plan 2 applicable for future service only rendered by the Town's Police Officers from January 1, 2017.

[12] Applicable for future service only from July 1, 2000.

[13] Applicable for future service only from July 1, 2003.

[14] Plan 2 applicable for future service only rendered by the County's Police Officers from July 1, 2008. Plan 2 applicable for future service only rendered by the County's Corrections employees from January 1, 2019.

[15] Plan 3 is applicable for future service only rendered by the Town's Law Enforcement Officers, effective January 1, 2015.

[16] Plan 1 applicable for future service only of Police Officers, effective July 1, 2006.

[17] Plan 2 applicable for future service only of Police Officers, effective July 1, 2006. Plan 3 applicable for future service only of Police Officers, effective January 1, 2016. Plan 3 applicable for future service only of Firefighters and EMS effective July 1, 2019.

[18] Plan 2 applicable for future service only for all employees who are not seasonal/temporary or part-time, effective July 1, 2019. Covered employees permitted to purchase prior service by paying the full cost.

[19] Plan 3 applicable for future service only for Police Officers from January 1, 2014. Plan 2 applicable for future service only for Corrections employees from January 1, 2019.

[20] Greater Augusta Utility District (P0311) was formed by the merger of the Augusta Water District (former P0034) and the Augusta Sanitary District (former P0064).

[21] Plan 2 applicable for future service only for the Town's Police Officers from July 1, 2016.

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[22] Plan 3 applicable for future service only for the Town's Firefighters and Police Officers, effective July 1, 2009.

[23] Plan 4 applicable for future service only rendered by the County's Law Enforcement Officers from January 1, 2018.

[24] Applicable to all new hires on or after July 1, 1994. All members in the PLD at July 1, 1994 elected to remain in the 1/50 Plan under Regular Plan A.

[25] Plan 2 applicable for future service only for the Town's Police Officers, effective January 1, 2012.

[26] Plan 2 applicable for all service for the County's Police Officers and for future service only of Corrections Officers rendered from January 1, 2018.

[27] Plan 2 applicable to all service for Police Officers and for future service only of Firefighters rendered from July 1, 2008.

[28] Plan 1 applicable for future service only of Police Officers, effective July 1, 2007.

[29] Coverage under Plan 3 for full-time Corrections Employees working 35 or more hours per week for future service only added effective July 1, 2019, with Corrections Employees permitted to purchase prior service by paying the full cost.

[30] Plan 3 applicable to all service for Police Officers and Firefighters, effective July 1, 2017.

[31] Plan 3 for future service only after January 1, 2010 for Police Officers hired on or after October 12, 1992. Plan 1 for future service only after January 1, 2010 for Police Officers hired prior to October 1, 1992.

[32] Plan 3 applicable for future service only for Firefighters and Police Officers effective January 1, 2014.

[33] Plan 2 applicable to future service only rendered by the Town's Firefighters and Police Officers from July 1, 2005. Prior service was credited under Plan 4.

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[34] Plan 2 applicable for future service only rendered by the County's Law Enforcement Officers from July 1, 2017.

[35] Plan 3 applicable for future service only rendered by the Town's Police Officers from July 1, 2007.

[36] Coverage for employees who were members with either P0130a or P0166a immediately prior to being employed by RSU #25 for future service was effective July 1, 2009. Coverage expanded to include Director of Technology and Central Office Bookkeeper positions for future service only effective July 1, 2019, with members in these positions permitted to purchase prior service by paying the full cost.

[37] Plan 2 applicable for future service only for Firefighters from January 1, 2014. As of July 1, 2017, Plan 2 also applicable for service rendered prior to January 1, 2014.

[38] Plan 3 is applicable for future service only rendered by the Town''s Police Officers, effective July 1, 2017.

[39] Plan 3 is applicable for future service only rendered by the City's Police Officers, effective July 1, 2015. Service for the City's Police Officers prior to July 1, 2015 under Plan 2. Plan 3 is applicable for future service only rendered by the City's Firefighters , effective July 1, 2016. Effective July 1, 2019, future service only for the City's Police Officers is under Plan 3C. Prior service remains under 2N and 3N respectively for service prior to July 1, 2015 and service between July 1, 2015 and June 30, 2019. Service rendered by the City's Firefighters remains without COLA, under Plan 2N for service prior to July 1, 2016 and Plan 3N for service on or after July 1, 2016.

[40] Plan 3 applicable for future service only rendered by Law Enforcement Officers from July 1, 2002. Service for Law Enforcement Officers prior to July 1, 2002 under Plan 2.

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[41] Plan 1 is applicable for future service only rendered by Firefighters from July 1, 2002 and Police Officers from July 1, 2004. Plan 2 is applicable for Police Officers hired on or after July 1, 2014 and for Firefighters hired after December 31, 2014. Existing Firefighters as of December 31, 2014 elected either to remain under Plan 1 or move to Plan 3 for service rendered after December 31, 2014. Existing Police as of July 1, 2014 remained under Plan 1 for future service January 1, 2015. Beginning January 1, 2017, Plan 3 is applicable for future service only rendered by the City's Firefighters. Plan 3 also applicable for future service only rendered by the City's Police Officers beginning January 1, 2017 except all officers under Plan 1 at that time elected either to remain under Plan 1 or move to Plan 3. All Police Officers under Plan 2 were required to move to Plan 3 for future service applicable January 1, 2017.

[42] Plan 3 is applicable for future service only rendered by the Town's Firefighters from July 1, 2014. Firefighters who were covered under Plan 1, for future service rendered after July 1, 2008, could make an irrevocable election to remain in Plan 1. Firefighters hired after June 30, 2014 in Plan 3. Plan 1 is applicable to the Town's Police Officers for future service rendered effective July 1, 2009. Plan 3 is applicable to the Town's Law Enforcement Officers for future service rendered effective July 1, 2018.

[43] Plan 3 applicable for future service only for Law Enforcement Officers, effective January 1, 2019.

[44] Plan 3 applicable for future service only of Police Officers, effective July 1, 2009, and for future service only of Firefighters, effective July 1, 2010. Prior service credited under Special Plan 2. Police hired on or after July 1, 2014 covered by Plan 2.

[45] Applicable for future service only from July 1, 2005.

[46] Plan 3 applicable for future service only rendered by the Town's Firefighters from July 1, 2005.

[47] Plan 2 applicable for all service for the County's Correctional Officers as of July 1, 2017.

[48] Plan 2 applicable for future service only rendered by the County's Law Enforcement Officers from January 1, 2018.

## APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[49] Town rejoined as of January 1, 2018 with all eligible employees, excluding Fire and Police that are in PLD 349, under Plan AN. One employee remains under Plan AC from the Town's prior participation.

[50] Plan 3 applicable for future service only rendered by the Town's Law Enforcement Officers from January 1, 2018.

[51] Plan 2 applicable for future service only rendered by the Town's Police Officers from January 1, 2017 and for future service only rendered by the Town's Firefighters from July 1, 2018.

[52] Plan 2 adopted for all service rendered by the Town's Police Officers effective January 1, 2017, including post service for those Officers who were members of the Town's plan on January 1, 2017.

[53] Applicable for future service rendered by Police Officers after January 1, 2010.

[54] Plan 1 applicable for all future service rendered by the Town's Firefighters/EMS and Police Officers from July 1, 2010. Previous service credited under Plan 2. Police Officers hired on or after July 1, 2014 covered by Plan 2.

[55] Plan 2 applicable for future service only from July 1, 2005. Plan 3 applicable for future service only rendered by the Town's Law Enforcement Officers from January 1, 2018.

## APPENDIX B – MEMBERSHIP INFORMATION

| Active Member Data as of June 30, 2019 | |
|---|---|
| **Regular Plan Members** | |
| Count | 8,646 |
| Average Current Age | 47.4 |
| Average Benefit Service | 8.5 |
| Average Vesting Service | 8.7 |
| Average Valuation Pay | $ 45,948 |
| **Special Plan Members** | |
| Count | 3,085 |
| Average Current Age | 40.4 |
| Average Benefit Service | 10.4 |
| Average Vesting Service | 11.0 |
| Average Valuation Pay | $ 64,122 |
| **All Plan Members** | |
| Count | 11,731 |
| Average Current Age | 45.6 |
| Average Benefit Service | 9.0 |
| Average Vesting Service | 9.3 |
| Average Valuation Pay | $ 50,727 |

**Participating Local Districts of the Maine Public Employees Retirement System**
**Inactive Member Data as of June 30, 2019**
**Regular Plans**

| | Count | Average Age | Total Annual Benefit | Average Annual Benefit |
|---|---|---|---|---|
| Retired | 5,440 | 73.1 | $ 79,834,502 | $ 14,675 |
| Retired - Concurrent Beneficiary | 362 | 71.5 | 1,314,565 | 3,631 |
| Disability - Section 1122 | 26 | 76.1 | 328,137 | 12,621 |
| Disability – Sections 3 and 3A | 261 | 66.3 | 5,468,020 | 20,950 |
| Beneficiary of Above | 1,010 | 73.9 | 10,415,446 | 10,312 |
| Pre-Retirement Death Beneficiary | 145 | 70.7 | 915,685 | 6,315 |
| Terminated Vested | 2,060 | 53.7 | 10,511,836 | 5,103 |
| Inactive Due Refund | 8,135 | NA | NA | NA |

## APPENDIX B – MEMBERSHIP INFORMATION

**Participating Local Districts of the Maine Public Employees Retirement System**
**Inactive Member Data as of June 30, 2019**
**Special Plans**

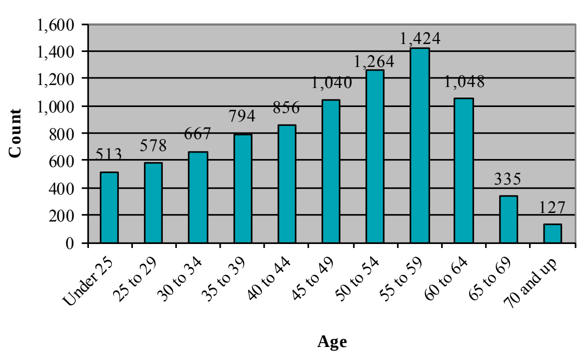
| | Count | Average Age | Total Annual Benefit | Average Annual Benefit |
|---|---|---|---|---|
| Retired | 1,526 | 67.9 | $ 51,170,640 | $ 33,533 |
| Retired - Concurrent Beneficiary | 362 | 67.1 | 2,387,507 | 6,595 |
| Disability - Section 1122 | 18 | 73.3 | 396,801 | 22,044 |
| Disability – Sections 3 and 3A | 74 | 61.2 | 2,319,830 | 31,349 |
| Beneficiary of Above | 284 | 73.2 | 5,083,065 | 17,898 |
| Pre-Retirement Death Beneficiary | 26 | 64.3 | 182,742 | 7,029 |
| Terminated Vested | 290 | 47.3 | 2,463,952 | 8,496 |
| Inactive Due Refund | 138 | NA | NA | NA |

**Distribution of Active Members**
**As of June 30, 2019**

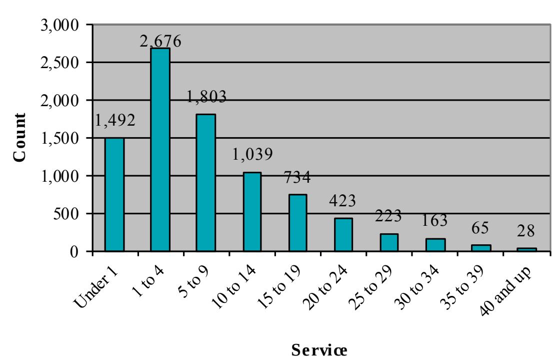
**Regular Plan Participants**

| | Years of Service | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Under 1 | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 and up | Totals |
| Under 25 | 309 | 201 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 513 |
| 25 to 29 | 179 | 323 | 72 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 578 |
| 30 to 34 | 162 | 305 | 159 | 40 | 1 | 0 | 0 | 0 | 0 | 0 | 667 |
| 35 to 39 | 169 | 298 | 210 | 87 | 29 | 1 | 0 | 0 | 0 | 0 | 794 |
| 40 to 44 | 146 | 316 | 210 | 105 | 59 | 20 | 0 | 0 | 0 | 0 | 856 |
| 45 to 49 | 149 | 340 | 231 | 146 | 110 | 46 | 15 | 3 | 0 | 0 | 1,040 |
| 50 to 54 | 151 | 323 | 289 | 199 | 127 | 103 | 44 | 26 | 2 | 0 | 1,264 |
| 55 to 59 | 126 | 307 | 328 | 222 | 175 | 106 | 68 | 63 | 27 | 2 | 1,424 |
| 60 to 64 | 66 | 175 | 204 | 170 | 171 | 100 | 67 | 52 | 28 | 15 | 1,048 |
| 65 to 69 | 26 | 65 | 70 | 50 | 43 | 35 | 17 | 16 | 6 | 7 | 335 |
| 70 and up | 9 | 23 | 27 | 16 | 19 | 12 | 12 | 3 | 2 | 4 | 127 |
| Total | 1,492 | 2,676 | 1,803 | 1,039 | 734 | 423 | 223 | 163 | 65 | 28 | 8,646 |

**Age Distribution**




**Service Distribution**



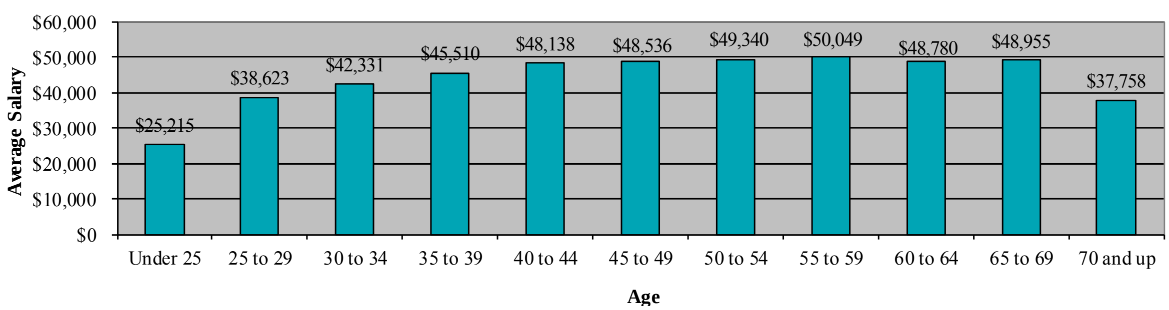
# APPENDIX B – MEMBERSHIP INFORMATION

**Distribution of Active Members**
**As of June 30, 2019**

**Regular Plan Participants**

| | verage Salary | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Years of Service | | | | | | | | | | |
| | Under 1 | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 and up | Average |
| Under 25 | $ 19,785 | $ 33,211 | $ 48,740 | $ 0 | $ 0 | $ 0 | $ 0 | $ 0 | $ 0 | $ 0 | $ 25,215 |
| 25 to 29 | 31,461 | 39,755 | 50,754 | 49,337 | 0 | 0 | 0 | 0 | 0 | 0 | 38,623 |
| 30 to 34 | 32,688 | 41,529 | 51,131 | 52,383 | 47,665 | 0 | 0 | 0 | 0 | 0 | 42,331 |
| 35 to 39 | 33,028 | 44,963 | 52,183 | 53,601 | 50,437 | 69,738 | 0 | 0 | 0 | 0 | 45,510 |
| 40 to 44 | 35,845 | 44,462 | 54,230 | 56,645 | 58,296 | 57,378 | 0 | 0 | 0 | 0 | 48,138 |
| 45 to 49 | 35,544 | 42,328 | 53,579 | 55,530 | 59,375 | 58,528 | 59,059 | 65,494 | 0 | 0 | 48,536 |
| 50 to 54 | 35,599 | 44,054 | 51,112 | 52,204 | 53,999 | 61,063 | 61,143 | 62,974 | 62,826 | 0 | 49,340 |
| 55 to 59 | 37,556 | 42,181 | 52,786 | 53,241 | 52,357 | 54,705 | 58,137 | 62,038 | 56,903 | 48,057 | 50,049 |
| 60 to 64 | 27,375 | 38,057 | 50,812 | 51,284 | 49,822 | 52,183 | 56,049 | 65,052 | 63,609 | 60,900 | 48,780 |
| 65 to 69 | 23,894 | 35,573 | 51,324 | 58,697 | 51,417 | 58,836 | 61,742 | 48,376 | 71,270 | 59,649 | 48,955 |
| 70 and up | 17,210 | 27,664 | 33,429 | 46,138 | 44,243 | 52,463 | 37,992 | 40,381 | 57,099 | 50,468 | 37,758 |
| Average | $ 30,725 | $ 41,409 | $ 51,914 | $ 53,523 | $ 53,232 | $ 56,513 | $ 57,356 | $ 61,473 | $ 61,306 | $ 58,179 | $ 45,948 |

**Average Salary Distribution**



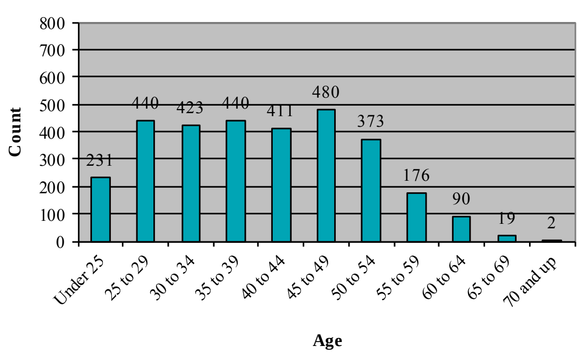
# APPENDIX B – MEMBERSHIP INFORMATION

**Distribution of Active Members**
**As of June 30, 2019**

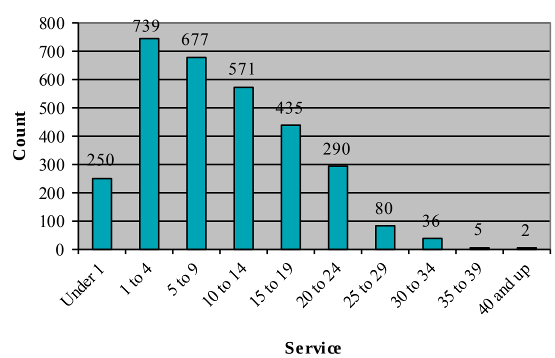
**Special Plan Participants**

| | Years of Service | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Under 1 | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 and up | Totals |
| Under 25 | 87 | 143 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 231 |
| 25 to 29 | 69 | 268 | 103 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 440 |
| 30 to 34 | 37 | 129 | 185 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 423 |
| 35 to 39 | 22 | 79 | 135 | 161 | 43 | 0 | 0 | 0 | 0 | 0 | 440 |
| 40 to 44 | 12 | 54 | 95 | 96 | 121 | 32 | 1 | 0 | 0 | 0 | 411 |
| 45 to 49 | 9 | 29 | 71 | 97 | 123 | 131 | 20 | 0 | 0 | 0 | 480 |
| 50 to 54 | 10 | 20 | 50 | 73 | 90 | 86 | 31 | 13 | 0 | 0 | 373 |
| 55 to 59 | 4 | 5 | 12 | 54 | 38 | 31 | 14 | 16 | 2 | 0 | 176 |
| 60 to 64 | 0 | 9 | 22 | 15 | 19 | 9 | 10 | 2 | 3 | 1 | 90 |
| 65 to 69 | 0 | 3 | 3 | 3 | 1 | 1 | 4 | 3 | 0 | 1 | 19 |
| 70 and up | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Total | 250 | 739 | 677 | 571 | 435 | 290 | 80 | 36 | 5 | 2 | 3,085 |

**Age Distribution**




**Service Distribution**



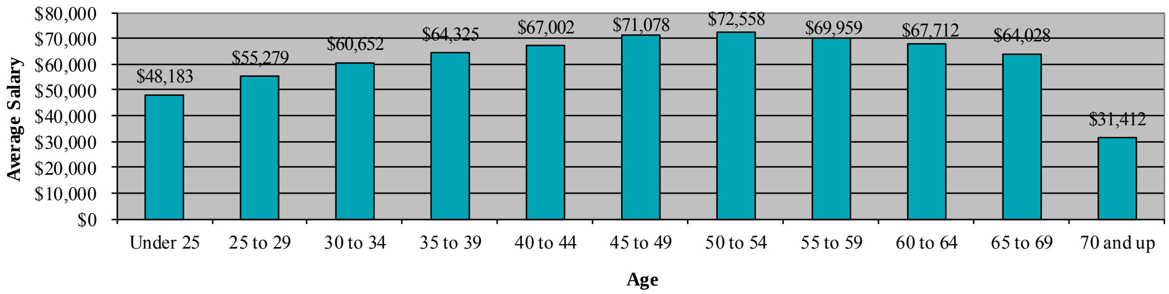
# APPENDIX B – MEMBERSHIP INFORMATION

**Distribution of Active Members**
**As of June 30, 2019**

**Special Plan Participants**

| | Average Salary Years of Service | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Under 1 | 1 to 4 | 5 to 9 | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 29 | 30 to 34 | 35 to 39 | 40 and up | Average |
| Under 25 | $ 41,132 | $ 52,328 | $ 68,970 | $ 0 | $ 0 | $ 0 | $ 0 | $ 0 | $ 0 | $ 0 | $ 48,183 |
| 25 to 29 | 41,590 | 56,208 | 62,032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55,279 |
| 30 to 34 | 44,441 | 54,759 | 64,723 | 69,082 | 0 | 0 | 0 | 0 | 0 | 0 | 60,652 |
| 35 to 39 | 43,254 | 58,340 | 63,082 | 68,277 | 75,213 | 0 | 0 | 0 | 0 | 0 | 64,325 |
| 40 to 44 | 40,099 | 55,081 | 63,910 | 67,331 | 74,072 | 78,192 | 82,077 | 0 | 0 | 0 | 67,002 |
| 45 to 49 | 40,066 | 58,182 | 65,358 | 68,277 | 72,150 | 78,666 | 81,332 | 0 | 0 | 0 | 71,078 |
| 50 to 54 | 47,273 | 52,830 | 64,351 | 68,693 | 77,231 | 77,466 | 85,202 | 80,656 | 0 | 0 | 72,558 |
| 55 to 59 | 75,003 | 40,593 | 58,843 | 68,824 | 71,142 | 69,065 | 81,928 | 79,092 | 65,109 | 0 | 69,959 |
| 60 to 64 | 0 | 57,809 | 65,123 | 68,829 | 73,090 | 65,305 | 66,971 | 67,827 | 88,520 | 61,288 | 67,712 |
| 65 to 69 | 0 | 40,490 | 70,850 | 56,914 | 97,885 | 24,698 | 72,086 | 60,874 | 0 | 118,220 | 64,028 |
| 70 and up | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31,412 | 0 | 0 | 31,412 |
| Average | $ 42,635 | $ 55,186 | $ 63,853 | $ 68,279 | $ 74,051 | $ 76,631 | $ 80,688 | $ 74,864 | $ 79,155 | $ 89,754 | $ 64,122 |

**Average Salary Distribution**

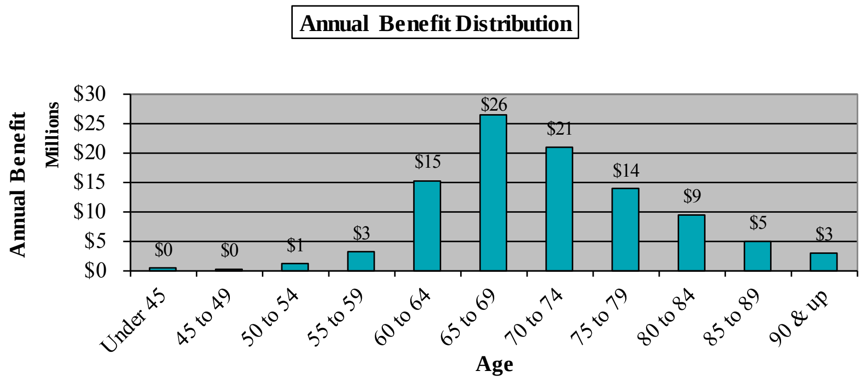


# APPENDIX B – MEMBERSHIP INFORMATION

**Distribution of Retirees, Disabled Members, Beneficiaries, and Survivors As of June 30, 2019**

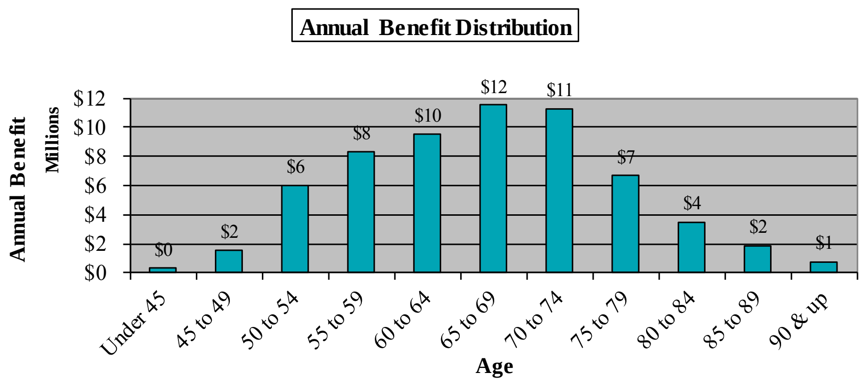
**Regular Plan Participants**

| Age | Count | Annual Benefit |
|---|---|---|
| Under 45 | 54 | $ 305,767 |
| 45 to 49 | 28 | 229,894 |
| 50 to 54 | 77 | 1,095,710 |
| 55 to 59 | 192 | 3,143,971 |
| 60 to 64 | 930 | 15,243,984 |
| 65 to 69 | 1,755 | 26,302,126 |
| 70 to 74 | 1,483 | 20,868,461 |
| 75 to 79 | 1,101 | 13,794,567 |
| 80 to 84 | 787 | 9,371,747 |
| 85 to 89 | 489 | 4,931,628 |
| 90 & up | 348 | 2,988,499 |
| Total | 7,244 | $ 98,276,355 |




**Special Plan Participants**

| Age | Count | Annual Benefit |
|---|---|---|
| Under 45 | 18 | $ 318,598 |
| 45 to 49 | 56 | 1,574,162 |
| 50 to 54 | 196 | 6,028,632 |
| 55 to 59 | 281 | 8,339,638 |
| 60 to 64 | 310 | 9,557,847 |
| 65 to 69 | 399 | 11,519,165 |
| 70 to 74 | 439 | 11,294,666 |
| 75 to 79 | 277 | 6,689,796 |
| 80 to 84 | 173 | 3,511,635 |
| 85 to 89 | 94 | 1,909,278 |
| 90 & up | 47 | 797,167 |
| Total | 2,290 | $ 61,540,584 |



## APPENDIX B – MEMBERSHIP INFORMATION

| | Active Members | Retired Members | Beneficiaries of Retired Members | Survivors of Deceased Members | Disabled Members[1] | Terminated Vested Members[2] |
|---|---|---|---|---|---|---|
| **As of June 30, 2018** | **11,416** | **6,672** | **2,019** | **172** | **393** | **2,319** |
| New hires | 1,581 | | | | | |
| Rehires | 152 | | | | | (68) |
| New PLDs | 30 | | | | | |
| Movement between plans | - | | | | | (3) |
| New retirees | (313) | 481 | | | | (168) |
| New disabled retirees | (7) | | | | 12 | (4) |
| New beneficiaries due to retirements | | | 36 | | | |
| New deferred vested members | (328) | | | | | 367 |
| Non-vested terminations | (593) | | | | | |
| Refunds | (192) | | | | | (68) |
| Deaths, no future benefits | (7) | (166) | (89) | (4) | (9) | (2) |
| Deaths with a survivor or beneficiary | (8) | (29) | 51 | 5 | (9) | (9) |
| Benefits expired | | | | (1) | | |
| Benefits restarted | | | | - | | |
| Records combined / split | | | | | | (14) |
| Data correction | - | 8 | 1 | (1) | (8) | - |
| **As of June 30, 2019** | **11,731** | **6,966** | **2,018** | **171** | **379** | **2,350** |

1. Former disabled retirees who have changed to service retirement as mandated by the Plan are still included as disabled members.
2. Deferred vested members includes those indicated to us in the data who have terminated and are eligible for a future annuity.

**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

## 1. Member Contributions

Prior to FY 2020, 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 |

Beginning with FY 2020, the contribution rates for members are determined annually based on the risk-sharing framework adopted by the Board of Trustees. The rates for members of Regular Plans (AC, AN, and BC) also vary based on whether the member joined the Plan prior to July 1, 2014 and thus has a normal retirement age of 60 or joined on or after this date and has a normal retirement age of 65.

Member contributions earn annual interest at the rate adopted by the Board of Trustees each February.

## 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 is 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:

## APPENDIX C – SUMMARY OF PLAN PROVISIONS

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 2¼% 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 AN***

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

## APPENDIX C – SUMMARY OF PLAN PROVISIONS

***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 2¼% 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.

## APPENDIX C – SUMMARY OF PLAN PROVISIONS

***Regular Plan Notes***

1. 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.

2. 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.

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.

## APPENDIX C – SUMMARY OF PLAN PROVISIONS

***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 2¼% 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.

## APPENDIX C – SUMMARY OF PLAN PROVISIONS

***Special Plan 4N***

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

***Special Plan Notes***

1. 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.

2. Service in all Special Plans counts, on a percentage basis, toward meeting the benefit eligibility requirements of any Special Plan.

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

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

Form of Payment: Payment begins 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.

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 66⅔% 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.

## 6. 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.

## 7. Pre-Retirement Ordinary Death Benefits

Eligibility: Death while active, inactive eligible to retire, or disabled not resulting from an injury received in the line-of-duty.

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.

## 8. 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.

**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

- 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."

## 9. 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.

## 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.

## APPENDIX C – SUMMARY OF PLAN PROVISIONS

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.

### 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.*

**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

Option 8: Option 4 with pop-up*.

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

## 13. Plan Changes since Prior Valuation

- None

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

## APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

# A. Actuarial Assumptions

### 1. Annual Rate of Investment Return

| | |
|---|---|
| PLDs | 6.75% |

Rate is net of both administrative and investment expense.

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

| | |
|---|---|
| PLDs | 1.91% |

### 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.

## APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

**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.

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

| | (Showing values in 2019) | |
|---|---|---|
| Age | Male | Female |
| 50 | 40 | 31 |
| 55 | 57 | 42 |
| 60 | 77 | 62 |
| 65 | 110 | 94 |
| 70 | 170 | 152 |
| 75 | 277 | 249 |
| 80 | 467 | 421 |
| 85 | 815 | 747 |
| 90 | 1,447 | 1,345 |
| 95 | 2,299 | 2,228 |

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

## APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

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

| | (Showing values in 2019) | |
|---|---|---|
| **Age** | **Male** | **Female** |
| 20 | 4 | 2 |
| 25 | 4 | 2 |
| 30 | 4 | 2 |
| 35 | 5 | 3 |
| 40 | 6 | 5 |
| 45 | 9 | 7 |
| 50 | 17 | 12 |
| 55 | 28 | 20 |
| 60 | 47 | 29 |
| 65 | 83 | 43 |

* 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.

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

| | (Showing values in 2019) | |
|---|---|---|
| **Age** | **Male** | **Female** |
| 25 | 81 | 24 |
| 30 | 78 | 30 |
| 35 | 92 | 42 |
| 40 | 110 | 57 |
| 45 | 171 | 90 |
| 50 | 209 | 118 |
| 55 | 242 | 148 |
| 60 | 275 | 176 |
| 65 | 329 | 214 |
| 70 | 425 | 291 |

## APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

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*

| Service | 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.

## APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

**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 |

* 10% 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: 5% assumed for all future years

COLA Timing: September 1

Member Contribution Rates: For purposes of developing liability amounts, the member contribution rates in effect for FY 2019 are assumed to continue for all periods in the future instead of the rates developed annually beginning with FY 2020 based on the risk-sharing framework.

## APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

**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:**

None.

**14. Rationale for Change in Actuarial Assumptions:**

N/A.

## B. Actuarial Methods

**1. Funding Method**

The entry age normal actuarial funding method is used to determine costs and the actuarially determined contributions needed to fund the Plan. The actuarially determined contributions are then used to develop the specific rates for both members and PLDs for each specific Regular and Special Plan within the Plan. Under this funding method, the Actuarially Determined Plan Total Rate consists of two elements: the Actuarially Determined Plan Normal Cost Rate and the Actuarially Determined Plan UAL Amortization Rate.

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. 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. These individual amounts for each Regular and Special Plan are then added to get the total normal cost dollars for the Plan and then divided by the total payroll for the Plan to get the Actuarially Determined Plan Normal Cost Rate.

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, the Actuarially Determined Plan UAL Amortization Rate is calculated for the Consolidated Plan in total based on the pooled

## APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

UAL being amortized over a 20-year period commencing with the June 30, 2015 valuation date and any layers of pooled UAL 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 the Actuarially Determined Plan UAL Amortization Rate.

The risk-sharing framework adopted by the Board of Trustees is then used to develop individual PLD and member rates for each Regular and Special Plan within the Plan based on the Actuarially Determined Plan Total Rate. The allocation to each specific Plan from the Total Rate is based on the normal cost rate for each specific Plan relative to the Plan in total. For the three Regular Plans, member rates are developed separately for members under the provisions with an age 60 normal retirement age and for members under the provisions with an age 65 normal retirement age.

In addition to the development of rates for each Plan, 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. 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

None.

## APPENDIX E – GLOSSARY OF GASB TERMS

### 1. Actuarially Determined Contribution

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

### 2. Actuarial Valuation Date

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

### 3. Deferred Inflow of Resources

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

### 4. Deferred Outflow of Resources

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

### 5. Entry Age Actuarial Cost Method

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

### 6. Measurement Date

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

## APPENDIX E – GLOSSARY OF GASB TERMS

### 7. Net Pension Liability

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

### 8. Plan Fiduciary Net Position

The fair or market value of assets.

### 9. Reporting Date

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

### 10. Service Cost

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

### 11. Total Pension Liability

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

CHEIRON

*Classic Values, Innovative Advice*