Maine Public Employees Retirement System

Consolidated Plan for Participating Local Districts

Actuarial Valuation Report as of June 30, 2021

Produced by Cheiron
October 2021

TABLE OF CONTENTS

Section		Page
Letter of Transmittal		i
Foreword		iii
Section I	Board Summary	1
Section II	Risk Assessment and Disclosure	11
Section III	Assets	22
Section IV	Liabilities	28
Section V	Contributions	31
Section VI	Financial Disclosure Information	37

Appendices

Appendix A	Participating Local District Plan Elections	45
Appendix B	Membership Information	74
Appendix C	Summary of Plan Provisions	82
Appendix D	Actuarial Assumptions and Methods	91
Appendix E	Glossary of GASB Terms	101

October 14, 2021

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, 2021 Actuarial Valuation Report for the Consolidated Plan for Participating Local Districts (Plan) of the Maine Public Employees Retirement System (MainePERS or System).

The purpose of this report is to present the annual actuarial valuation of the State Employee and Teacher Retirement Program (Program) of the Maine Public Employees Retirement System. This report is for the sole use of the MainePERS Board and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report contains information on assets, liabilities, and contributions of the Program, as well as required accounting statement disclosures under the Governmental Accounting Standards Board (GASB) Statement No. 67.

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

Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

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

This actuarial report was prepared exclusively for MainePERS for the purposes described herein and for the use by the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

This report does not contain any adjustments for potential impact of COVID-19 on either economic or demographic assumptions. We anticipate that the virus may have implications in both the short and long term, but the net impact of these is not determinable at this time.

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, 2021. The purpose of this report is to:

1) Measure and disclose, as of the valuation date, the financial condition of the Plan,
2) Examine 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 informational purposes for the Participating Local Districts (PLDs) and members for Fiscal Year (FY) 2023 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 2023 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 tracks 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 assesses and discloses various actuarial risk measures of the Plan.

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 2023. (The actual rates paid for each specific Regular and Special Plan within the Plan are developed consistent with the risk-sharing framework 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, 2021 valuation setting the Fiscal Year (FY) 2023 contribution rates will be the fourth 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, 2021 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 2023. 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, 2021 valuation will also be used for accounting disclosures.

Experience from July 1, 2020 through June 30, 2021 (FY 2021)

The Actuarially Determined Plan Total Rate produced by the June 30, 2020 valuation reflecting all Plans within the Consolidated Plan for Participating Local Districts was 18.8%. The equivalent rate produced in this June 30, 2021 valuation is 18.7%. The specific rates for each PLD and members of each Regular and Special Plan within the Plan for FY 2022 that were developed as a result of the June 30, 2020 valuation were provided in a letter titled "Fiscal Year 2021 PLD Contribution Rates" dated November 30, 2020. Similarly, the specific rates for each PLD and members of each Regular and Special Plan within the Plan for FY 2023 will be provided under separate cover.

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 that 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 the June 30, 2021 valuation, the Plan has an unfunded actuarial liability (UAL) of $330.3 million based on the actuarial value of assets (AVA). This represents a decrease of $15.7 million from the $346.0 million AVA UAL measured as of June 30, 2020. 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 2021 as well as their combined effect on the UAL.

Table I-1
(Amounts in Millions)

	Liabilities	Assets*	UAL
Value as of June 30, 2020	$3,409.7	$3,063.7	$346.0
Expected Change	134.1	143.9	(9.8)
Impact of Plan Changes	0.0	0.0	0.0
Impact of Assumption Changes	161.9	0.0	161.9
Recognized Investment Gain	0.0	181.1	(181.1)
Recognized Liability Loss	13.3	0.0	13.3
Value as of June 30, 2021	$3,719.0	$3,388.7	$330.3

* 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

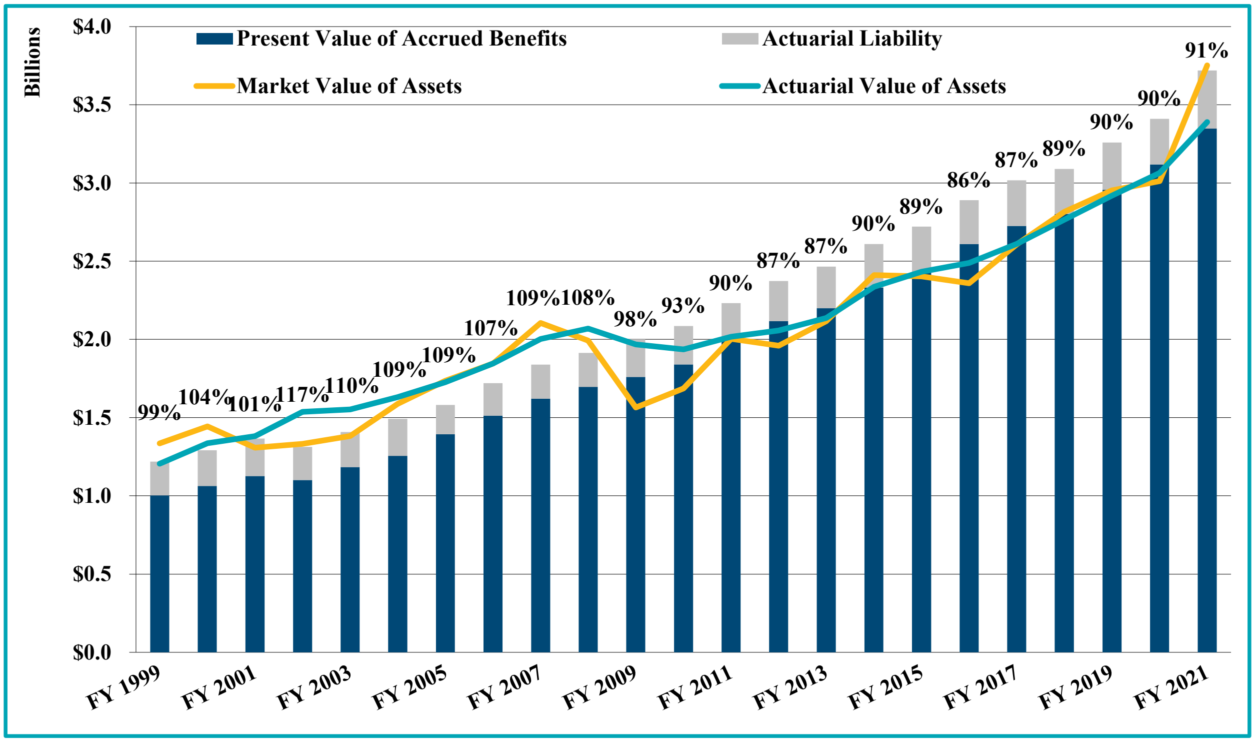
It is important to take a step back from the latest results and view them in the context of the Plan's history. On the next few pages, we present a series of graphs that display key historical trends relating to the Plan's condition. In addition to considering the past, examining future possible trajectories 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.

<u>Assets and Liabilities</u>

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). These liability measures are discussed further in Section IV. 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. The values of this metric as of each valuation date are shown as the percentages in the graph labels.

SECTION I – BOARD SUMMARY



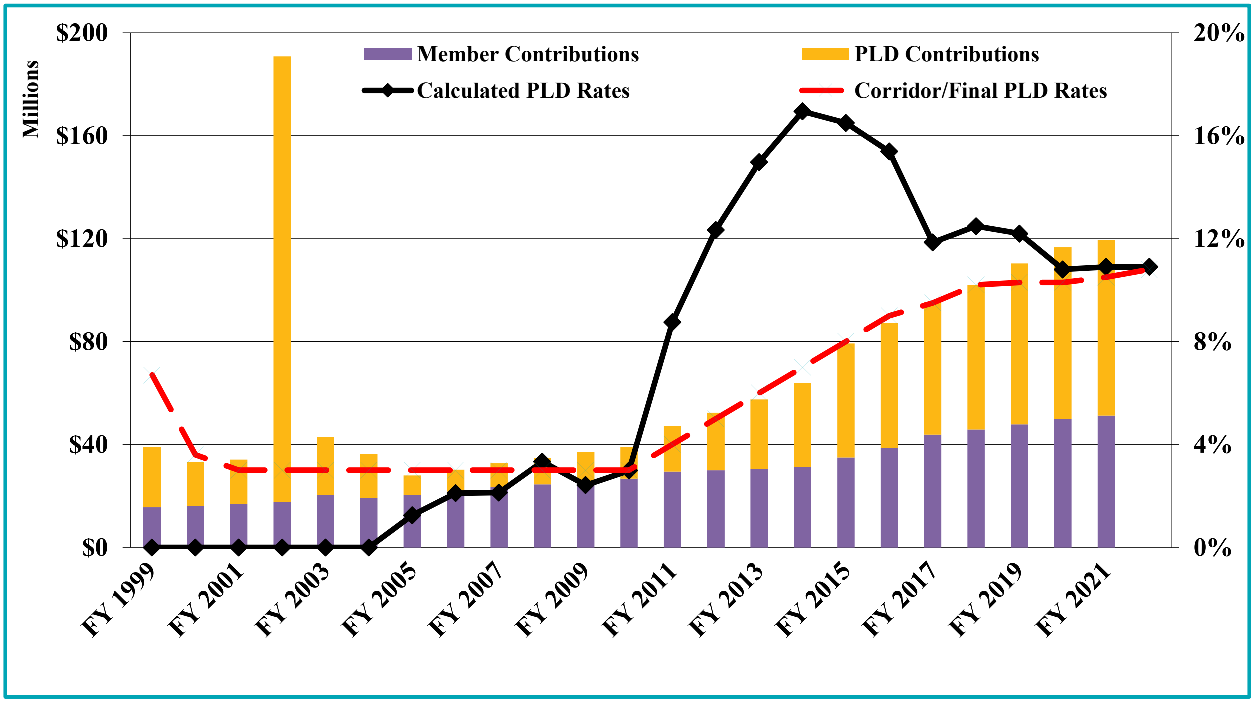
This graph shows that the Plan had its highest AVA funded ratio (117%) over the period shown at June 30, 2002, which was just after several PLDs paid off their Initial Unpooled Unfunded Actuarial Liabilities (IUUALs). After that, the funded ratio was relatively stable around 107-110% until the financial market events of 2008-2009 resulted in the ratio dropping below 100%. Following that drop, the ratio stabilized again beginning June 30, 2011 and has stayed in the range of 86-91% 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 101% with this valuation. In addition, note that the prior year's liabilities were measured at a 6.75% discount rate where this year's are measured at a more conservative 6.50%.

<u>Contributions</u>

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 under the risk-sharing framework. 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

SECTION I – BOARD SUMMARY

to the Actuarially Determined PLD rate from the risk-sharing framework, beginning with FY 2020. For both of these rates, which are read using the right-hand axis, we are showing the rates through FY 2022, since the Aggregate Final PLD rate, which corresponds with the rates that will actually be paid, for FY 2023 that will be produced by this valuation is not yet available. Note that both the red and black line represent the rates that apply to the PLDs and does not include the member rate.



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. Initially, this calculated rate, shown by the black line, was slightly above the actual final rates being paid, shown as the red line, as the risk-sharing framework was phased in, but as of the most recent FY 2022 rates, these two rates have converged. Note, however, that while the total rates have converged, the allocation of the rate between PLDs and members is still being phased in, but we anticipate these will also converge as the risk-sharing framework is fully phased in.

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 previous 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.

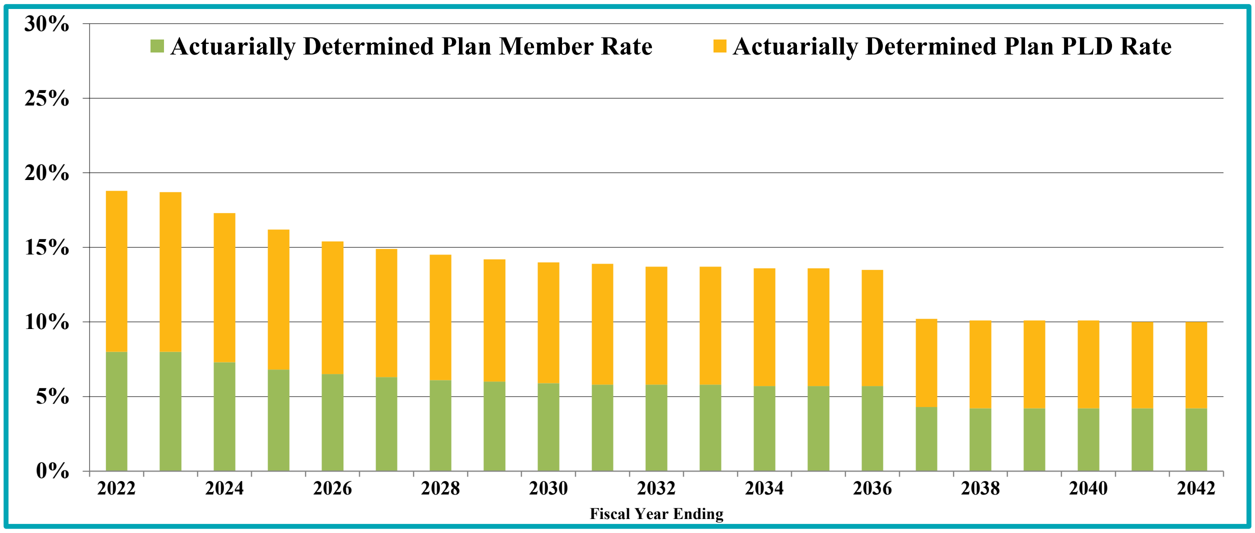
Through FY 2019, the member contribution rates were fixed values, ranging from 4.5% to 9.5%, as set by statute and the Board, specific to the Regular or Special Plan in which each member participates. Beginning with FY 2020, the member contribution rates are determined under the risk-sharing framework adopted by the Board as described in the General Comments section of this Board Summary. The Final PLD Member Rate in effect for FY 2022 is 8.0% with those participating in Regular Plans with an Age 65 NRA contributing at a lower rate than those in the NRA 60 plans. See the description of these items in Section V for additional information. The specific rates by Plan for FY 2022, the most recent year currently developed, range from a low of 3.85% for the Age 65 Plan Member Rate under Plan BC to a high of 9.7% 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 aggregate actuarially determined PLD contributions. Here we present a baseline projection of these metrics based on all actuarial assumptions being exactly met during the projection period, including the assumed 6.50% 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 averaging similar to the assumed but deviating in each of the 20 years from the assumed rate.

Note that in these projections, we have assumed that the PLD and member 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. However, as the risk-sharing framework has been largely phased in at this point, with the total rates having fully converged and the only differences between the actual and calculated contributions being in the allocations between the PLDs and the members, no significant variation is anticipated as a result of this assumption.

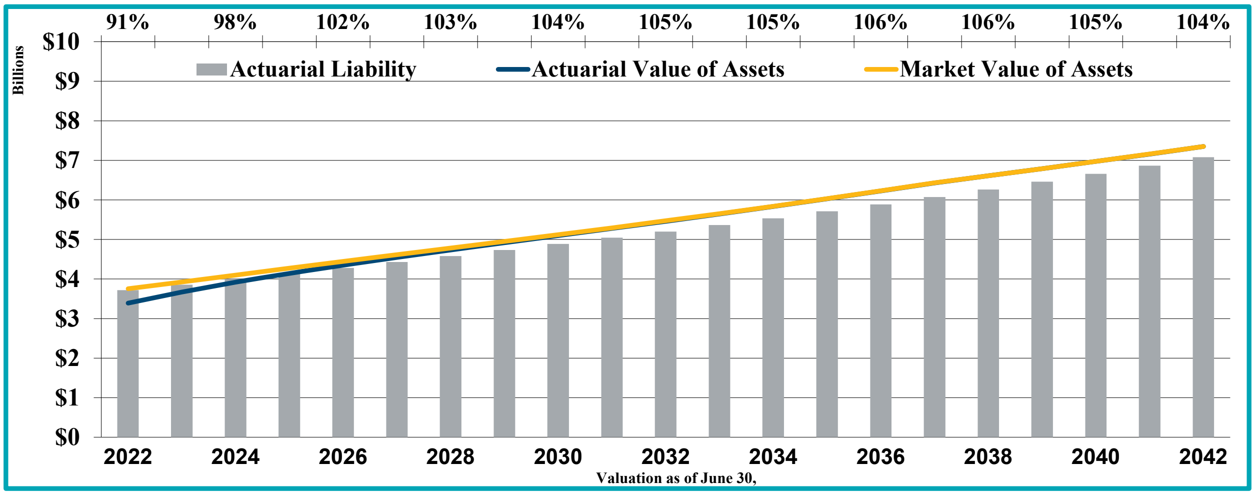
In addition, in these baseline projections, as well as the varying return projection scenarios in the next section, we have assumed that minimum contributions to the Plan in aggregate are equal to 75% of the total normal cost at that time, allocated 58% to the PLDs and 42% to the members. For example, based on the 14.10% total normal cost produced in this June 30, 2021 valuation, this currently results in a minimum contribution of 6.1% for the PLDs and 4.5% for the members. In developing these projections, we have reflected the anticipated decline in the normal cost over time as members under the newer tier, which has a lower normal cost, replace current members in the older tier. Actual minimums have not yet been adopted by the Board, but it is our understanding that the Board's intent is to have a minimum similar to this. If the actual rules differ at such time that the otherwise determined contributions would go below this assumed minimum contribution level, the resulting projections would vary.



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 6.50% on their *market value* as well as all other current assumptions being exactly met each year of the projection. In addition, these projected contribution rates also reflect any prior years' actual investment gains or losses that have not been fully recognized in this valuation. The green bars represent the Actuarially Determined Plan Member Rate, while the yellow bars represent the Actuarially Determined Plan PLD Rate. The combined bars thus represent the Actuarially Determined Plan Total Rates. 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. However, as previously noted, these rates have now converged when considered in total for the members and PLDs.

Assuming all assumptions are exactly met, it is projected that the contributions will generally decline through FY 2036 and then reach the assumed minimum contributions of approximately seventy-five percent of normal cost beginning in FY 2037. 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 as well as possible additional layers reflecting changes such as assumption or Plan changes. This concept is explored further in the risk section of this report.

SECTION I – BOARD SUMMARY



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 AVA funded ratio is projected to improve from the starting level of 91% as of FY 2021 to 104% funding in FY 2042. 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 as well as the assumed minimum contributions to the Plan. Note that if these ratios used market value of assets (MVA), the funded ratios would be different.

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, 2020	Valuation as of June 30, 2021	% Change
Member Counts			
Active Members	11,838	11,704	(1.1%)
Retired Members	7,222	7,434	2.9%
Beneficiaries of Retired Members	2,086	2,096	0.5%
Survivors of Deceased Members	162	162	0.0%
Disabled Members	390	401	2.8%
Terminated Vested Members	2,402	2,563	6.7%
Inactives Due Refunds	8,766	9,479	8.1%
Total Membership	32,866	33,839	3.0%
Annual Payroll of Active Members	$ 623,587,639	$ 663,770,560	6.4%
Annual Payments to Benefit Recipients	$ 169,508,194	$ 177,787,099	4.9%
Assets and Liabilities			
Actuarial Liability (AL)	$ 3,409,741,367	$ 3,719,016,414	9.1%
Actuarial Value of Assets (AVA)	3,063,710,040	3,388,697,748	10.6%
Unfunded Actuarial Liability (UAL)	$ 346,031,327	$ 330,318,666	(4.5%)
Individual Portion (IUUAL)	NA	NA	
Pooled Portion (PUAL)	$ 346,031,327	$ 330,318,666	(4.5%)
AVA Funded Ratio (AVA/AL)	89.9%	91.1%	
MVA Funded Ratio (MVA/AL)	88.3%	100.9%	
Accrued Benefit Liability (PVAB)	$ 3,118,058,186	$ 3,347,379,580	7.4%
Market Value of Assets (MVA)	3,012,428,367	3,751,152,623	24.5%
Unfunded PVAB	$ 105,629,819	$ (403,773,043)	(482.3%)
Accrued Benefit Funded Ratio	96.6%	112.1%	
Plan Total Contribution Rates*	**FY 2022**	**FY 2023**	
Actuarially Determined Plan Normal Cost Rate	13.9%	14.1%	
Actuarially Determined Plan UAL Amortization Rate	4.9%	4.6%	
Actuarially Determined Plan Total Rate	18.8%	18.7%	

* 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, 2020	Valuation as of June 30, 2021	% Change
Member Counts			
Active Members	8,600	8,392	(2.4%)
Retired Members	5,648	5,827	3.2%
Beneficiaries of Retired Members	1,409	1,420	0.8%
Survivors of Deceased Members	136	141	3.7%
Disabled Members	291	292	0.3%
Terminated Vested Members	2,074	2,200	6.1%
Inactives Due Refunds	8,606	8,904	3.5%
Total Membership	26,764	27,176	1.5%
Annual Payroll of Active Members	$ 410,610,143	$ 434,898,072	5.9%
Annual Payments to Benefit Recipients	$ 104,555,480	$ 109,631,991	4.9%
Assets and Liabilities			
Actuarial Liability (AL)	$ 2,000,211,143	$ 2,159,391,347	8.0%
Actuarial Value of Assets (AVA)	1,788,373,698	1,959,246,027	9.6%
Unfunded Actuarial Liability (UAL)	$ 211,837,445	$ 200,145,320	(5.5%)
Individual Portion (IUUAL)	NA	NA	
Pooled Portion (PUAL)	$ 211,837,445	$ 200,145,320	(5.5%)
AVA Funded Ratio (AVA/AL)	89.4%	90.7%	
MVA Funded Ratio (MVA/AL)	87.9%	100.4%	
Accrued Benefit Liability (PVAB)	$ 1,854,233,546	$ 1,962,483,864	5.8%
Market Value of Assets (MVA)	1,758,439,144	2,168,806,846	23.3%
Unfunded PVAB	$ 95,794,402	$ (206,322,982)	(315.4%)
Accrued Benefit Funded Ratio	94.8%	110.5%	
Regular Plan Total Contribution Rates*	**FY 2022**	**FY 2023**	
Actuarially Determined Regular Plans Normal Cost Rate	13.0%	13.1%	
Actuarially Determined Regular Plans UAL Amortization Rate	4.5%	4.3%	
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 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, 2020	Valuation as of June 30, 2021	% Change
Member Counts			
Active Members	3,238	3,312	2.3%
Retired Members	1,574	1,607	2.1%
Beneficiaries of Retired Members	677	676	(0.1%)
Survivors of Deceased Members	26	21	(19.2%)
Disabled Members	99	109	10.1%
Terminated Vested Members	328	363	10.7%
Inactives Due Refunds	160	575	259.4%
Total Membership	6,102	6,663	9.2%
Annual Payroll of Active Members	$ 212,977,496	$ 228,872,488	7.5%
Annual Payments to Benefit Recipients	$ 64,952,714	$ 68,155,108	4.9%
Assets and Liabilities			
Actuarial Liability (AL)	$ 1,409,530,224	$ 1,559,625,067	10.6%
Actuarial Value of Assets (AVA)	1,275,336,342	1,429,451,721	12.1%
Unfunded Actuarial Liability (UAL)	$ 134,193,882	$ 130,173,346	(3.0%)
Individual Portion (IUUAL)	NA	NA	
Pooled Portion (PUAL)	$ 134,193,882	$ 130,173,346	(3.0%)
AVA Funded Ratio (AVA/AL)	90.5%	91.7%	
MVA Funded Ratio (MVA/AL)	89.0%	101.5%	
Accrued Benefit Liability (PVAB)	$ 1,263,824,640	$ 1,384,895,716	9.6%
Market Value of Assets (MVA)	1,253,989,223	1,582,345,777	26.2%
Unfunded PVAB	$ 9,835,417	$ (197,450,061)	(2,107.5%)
Accrued Benefit Funded Ratio	99.2%	114.3%	
Special Plan Total Contribution Rates*	**FY 2022**	**FY 2023**	
Actuarially Determined Special Plans Normal Cost Rate	15.8%	16.1%	
Actuarially Determined Special Plans UAL Amortization Rate	5.6%	5.2%	
Actuarially Determined Special Plans Total Rate	21.4%	21.3%	

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

SECTION II – RISK ASSESSMENT AND DISCLOSURE

Introduction

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 the assets, the liabilities, and the annually determined contributions. While there are several factors that could lead to these results being different, we believe the primary risks for this Plan are:

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

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

SECTION II – RISK ASSESSMENT AND DISCLOSURE

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 other 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 in individual years, with the magnitude of the gains and losses from investment experience often significantly larger than the gains and losses from liability experience. In addition, during the past ten years, the offsetting effects of the longevity and other demographic risk gains and losses have been such that the cumulative effect of this longevity and other demographic risk as seen in the liability gains and losses has been significantly less than the investment gains and losses.

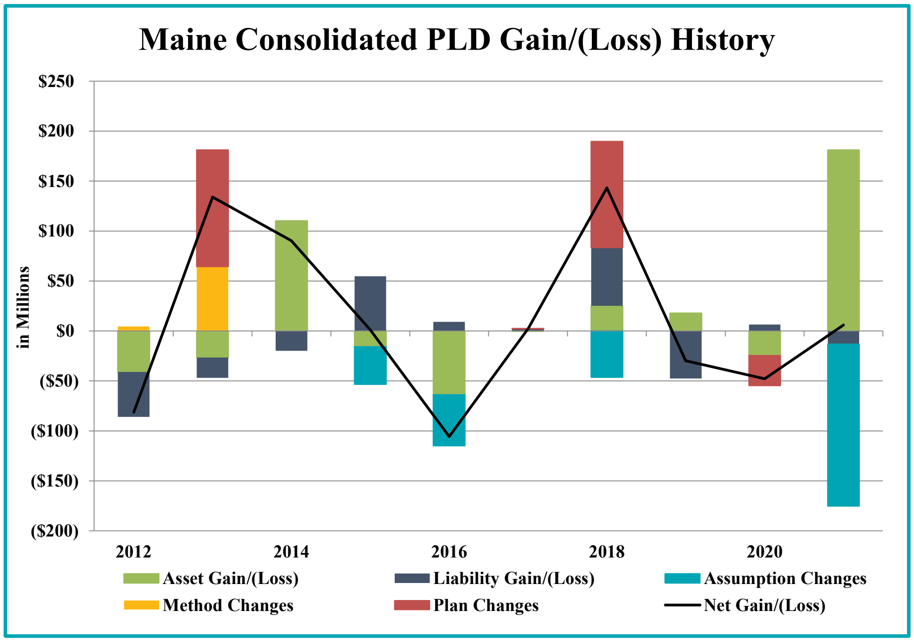
Plan Change Risk is the potential for the provisions of the Plan to be changed such that the funding or benefits are changed materially. In addition to the actual payments to and from the Plan being changed, future valuation measurements can also be impacted, with Plan changes leading to deviations between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

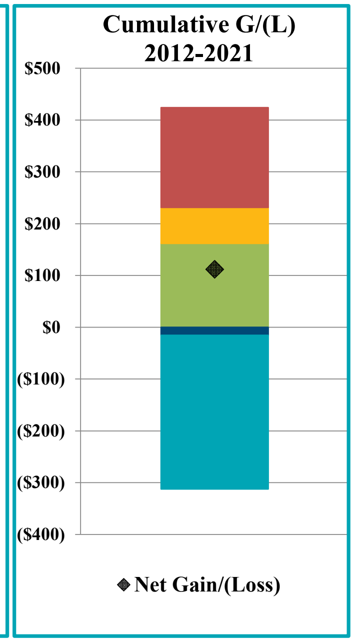
Assumption Change Risk is the potential for the environment to change such that future valuation assumptions are adjusted to be different than the current assumptions. For example, declines in interest rates over time may result in a change in the assumed rates of return used in the valuation. A healthier 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 resulting in the current assumption no longer being reasonable. The historical review section will show that assumption change risk has been a significant risk for this Plan. In addition to changes in individual assumptions, changes to the methods used in valuing the Plan can have a significant impact on the valuation results as can be seen based on the method change items in the Plan's historical experience. Over the period shown, method changes have also been a contributor to deviations in the Plan's actual status from expected.

SECTION II – RISK ASSESSMENT AND DISCLOSURE

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, assumption and plan changes have been the most significant risks for the Plan over this ten-year period. The next two most significant causes of experience deviations are asset gains/(losses) and method changes. In addition, we note again that while the cumulative effect of the liability gains and losses have been largely offsetting for the last ten years, they have been significant in individual years, which we expect to remain true for future years.

Plan Maturity Measures

As pension plans become more mature, the primary risks of adverse investments, demographic deviations, plan changes, and assumption and method changes become of more significant concern as the resulting impacts on the Plan's condition are more pronounced. 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, making it harder for a plan to recover from losses since contributions are generally made only on the basis of the active payroll.

SECTION II – RISK ASSESSMENT AND DISCLOSURE

One of the main reasons risks are more amplified with a mature plan is that 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 five percent of assets are especially vulnerable to asset losses.

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, which represents the percentage of payroll that would need to be contributed to make up a given change in the plan's assets. As a plan matures, its assets increase, and a greater proportion of the assets are paid out in benefit payments to members. The greater the plan's assets are relative to payroll, the more vulnerable the plan is to investment volatility in terms of the resulting contribution requirement changes.

As an example, here are two plans that both experience a 10% investment loss equaling $500 million on their existing assets of five billion dollars. 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. As seen in the chart below, this results in the percentage of payroll that Plan A would have to have contributed to make up the loss being double what would be required for Plan B.

	($ in millions)	
	Plan A	**Plan B**
Plan Assets	**$ 5,000**	**$ 5,000**
Payroll	**$ 500**	**$ 1,000**
Asset Leverage Ratio	**10.0**	**5.0**
10% Loss	**$ 500**	**$ 500**
10% Loss as % of Payroll	**100%**	**50%**

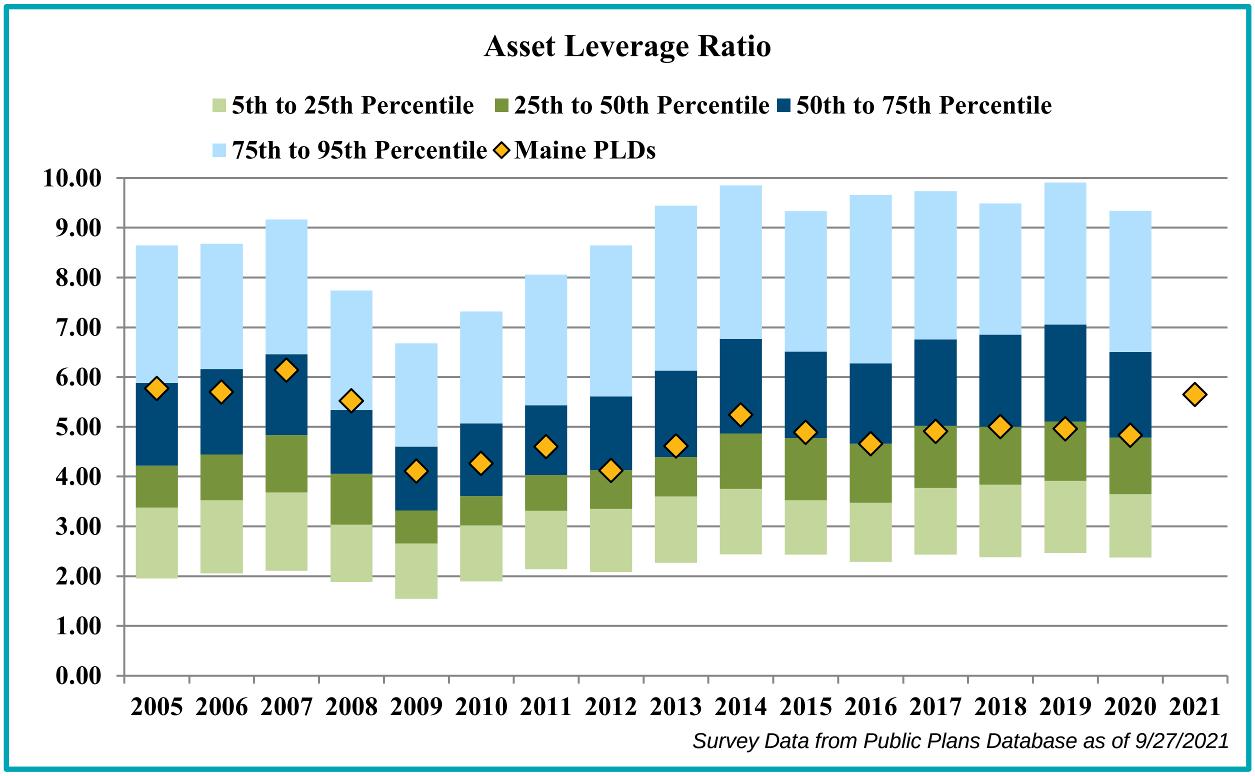
The Boston College's Center for Retirement Research, NASRA, and the Center for State and Local Government Excellence maintain the Public Plan Database that contains almost all state plans as well as many large municipal plans, covering over 95% of the membership in public plans as well as over 95% of the assets held by public pension plans.

The chart that follows shows the asset leverage ratios for all plans in this database since 2005. 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 gold diamonds. This chart shows that the Plan's asset leverage ratio has varied over this period but had remained steady at or just under five times salary in the most recent six years prior to 2021. In 2021, with the significant increase in the market value of assets for this year, it increased to 565%, or 5.65

SECTION II – RISK ASSESSMENT AND DISCLOSURE

times salary. Based on recent years, the Plan has been very close to the median of the universe of public plans on this metric.

Note that all of the charts showing the Plan versus this universe of plans in this section show one more year for the Plan than the universe as the 2021 numbers are not yet available for the database. When these numbers are available, we anticipate that the universe of public plans will also show a similar increase in this ratio given the significant increase in the market value of assets that most of these plans experienced for 2021.

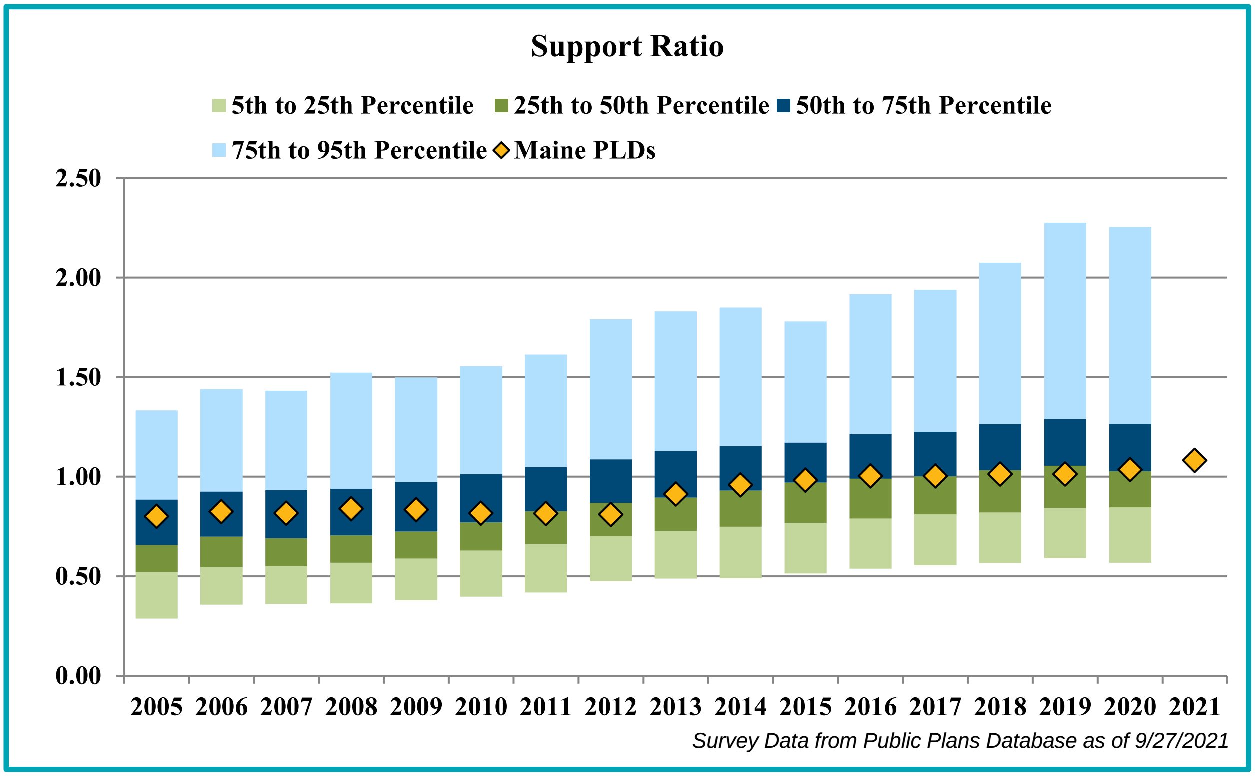


SECTION II – RISK ASSESSMENT AND DISCLOSURE

Support Ratios

Another 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 mature a plan is considered, with the proportion of the plan's liability represented by actives generally declining.

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



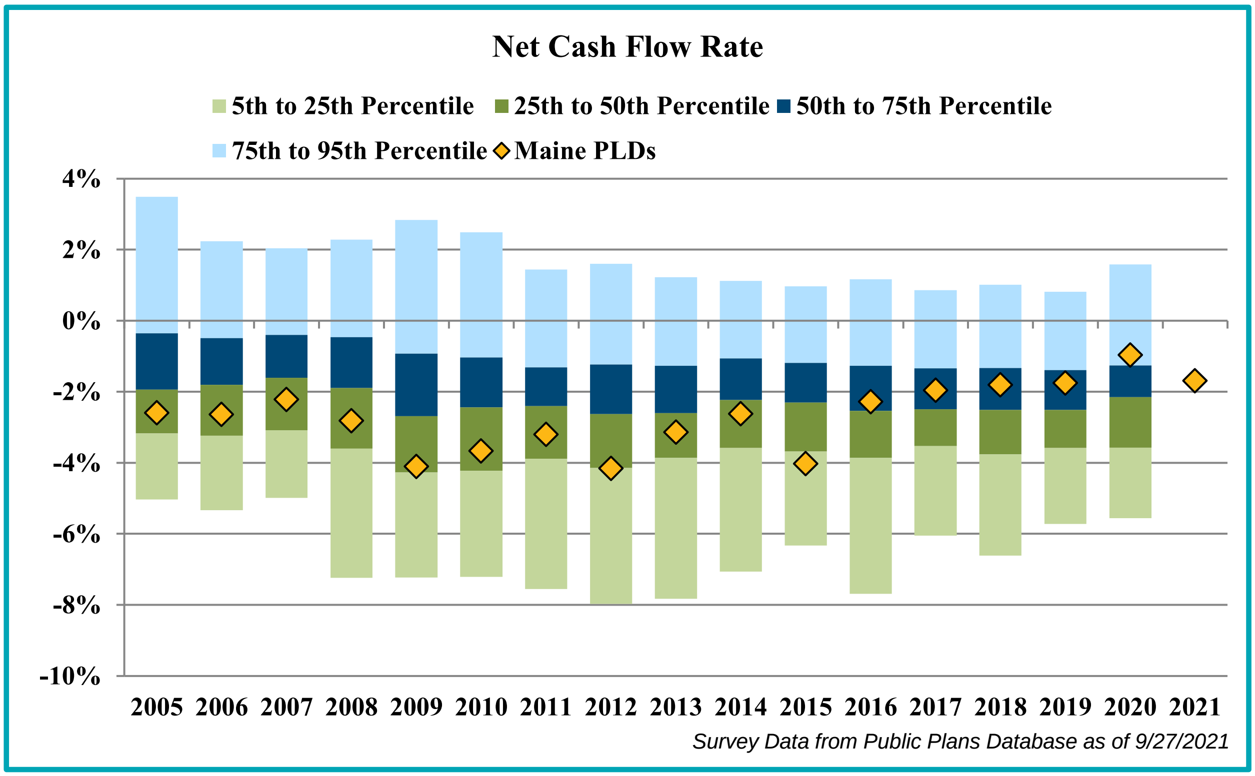
The gold diamonds in this graph shows that the Plan's support ratio was relatively stable through 2012, after which it increased from 81% to just over 100% as of 2016. It then was again relatively stable through 2019, after which it began increasing again, through the current level of 108%. However, relative to the universe of public plans, the Plan's support ratio has dropped from around the 65th percentile in 2005 to just above the 50th percentile in 2020. Given that this Plan has been close to the 50th percentile, or median of the universe, in recent years, this metric indicates that the Plan has been maturing at a rate similar to the universe of plans.

SECTION II – RISK ASSESSMENT AND DISCLOSURE

Net Cash Flow Ratio

Another measure of plan maturity is the ratio of the net cash flow (excluding investment returns) for a plan – contributions less benefits and expenses – divided by the market value of plan assets. The more negative this ratio, the more vulnerable a plan's funded status is to market declines.

This chart shows that the Plan's net cash flow ratio has varied over this period, but generally trending towards less negative rates in recent years, dropping as low as -1.0% in 2020. 2021 had a rate of -1.7%, which while more negative than the prior year, remains significantly less negative than earlier periods. Further, note that 2020 was an unusual year for contributions to the Plan with a number of PLDs entering the Consolidated Plan resulting in the unusually low value for that year on this metric. 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 may be 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 5-7 have additional detail on the baseline projection produced from this valuation. 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 discussed in the plan maturity section, as plans become more mature, it typically becomes more difficult for them to recover from market declines even when the average investment return over a long period is equal to the expected return. As a demonstration of this, on the following pages we show two scenarios that are based on assuming varying returns in the future. For both of these scenarios, we based these varying return scenarios on assuming the returns for the next 20 years would equal what a portfolio invested 75% in the SP-500 index and 25% in the Lehman Brothers bond index would have earned for historical 20-year periods.

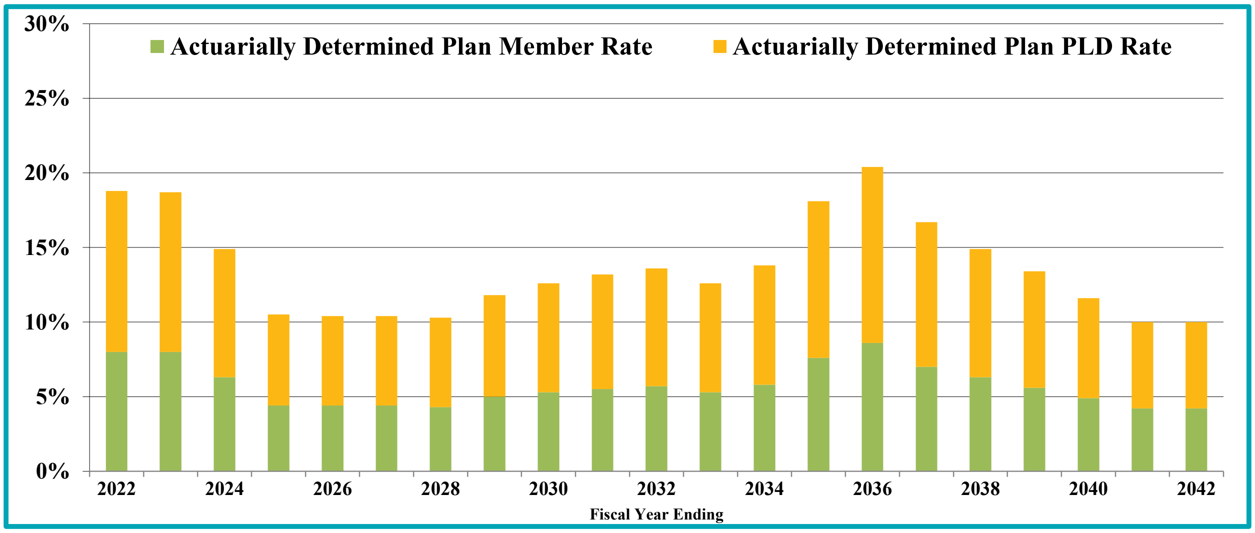
Note that these scenarios reflect illustrative examples and are not intended to reflect future expectations regarding the volatility of the returns. They are instead provided to demonstrate the magnitude and range of possible volatility in returns and funded ratios as a result of volatility in investment returns.

The first of these two scenarios is based on the 20-year period July 1, 1998 through June 30, 2018. This period produces an arithmetic average return of 7.63% for this hypothetical portfolio and a geometric average return of 6.98%. Both of these averages are slightly higher than the assumed 6.50% annually reflected in the baseline scenario. The rates assumed for each year of this scenario are shown below.

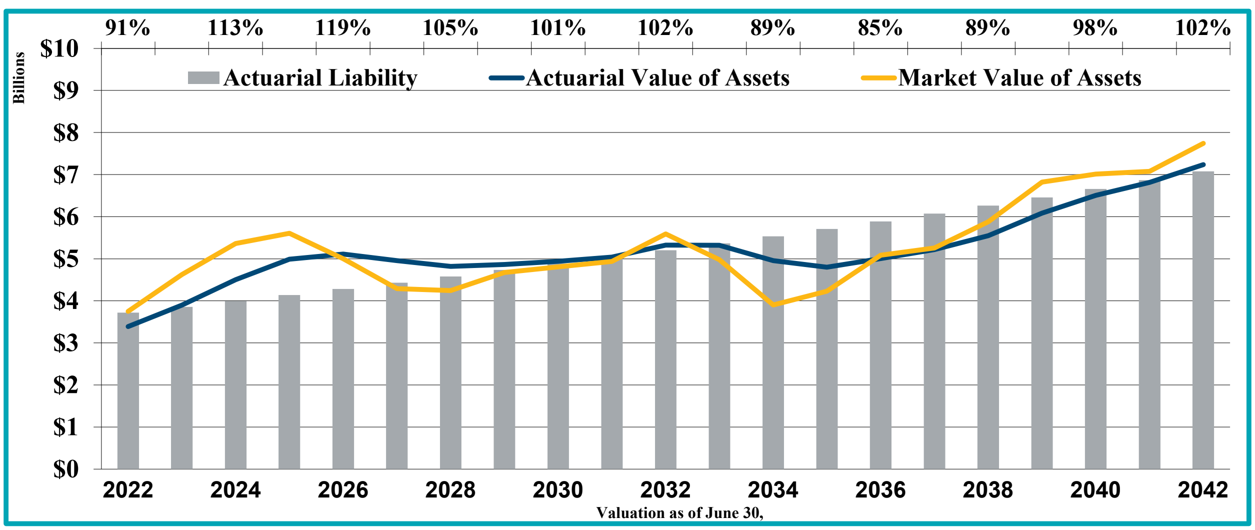
FY	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Return	25.3%	17.9%	6.6%	-8.3%	-11.3%	2.8%	14.4%	6.4%	6.3%	17.0%
FY	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Return	-8.1%	-18.1%	13.2%	24.0%	6.0%	15.3%	19.6%	6.0%	4.5%	13.3%

With varying annual earnings, it can be seen in the following chart that the volatility in the contributions is greater than in the baseline scenario. Note that similar to the baseline scenario, this first varying returns scenario produces a number of years where the contributions are subject to the assumed minimums. Also note that in this scenario, the maximum contributions of 12.5% for PLDs and 9% for employees are not reached in any year, and there are thus no reductions in COLA benefits.

SECTION II – RISK ASSESSMENT AND DISCLOSURE



The funded ratio of the Plan is also more volatile in this scenario than in the baseline, as seen in the following graph based on this first illustrative varying returns scenario. Also note that while the average returns in this scenario are slightly greater than the assumed rate reflected in the baseline, on average the Plan has a slightly lower funded ratio over the projection period under this scenario than in the baseline. This is due to the negative cash flows of the Plan previously discussed in this section. Note also that timing of contribution development and payment, as well as the combination of the amortization layers and the assumed minimum contributions, results in the Plan being funded over 100% at times, similar to what is seen in the baseline projection. These funded ratios are based on the actuarial values of assets and would vary were they based on market values of assets.

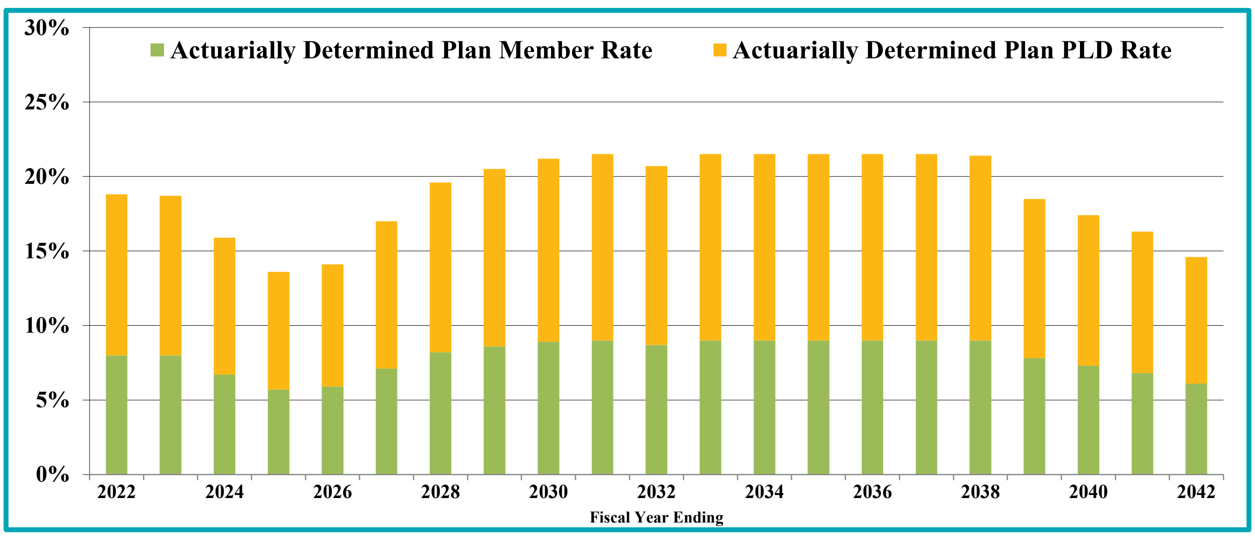


SECTION II – RISK ASSESSMENT AND DISCLOSURE

The second of these two scenarios is based on the 20-year period July 1, 1999 through June 30, 2019. This period produces an arithmetic average return of 6.90% for this hypothetical portfolio and a geometric average return of 6.32%. The arithmetic return under this scenario is thus slightly greater than the assumed 6.50% annually reflected in the baseline scenario while the geometric return for this scenario is slightly less than this assumed rate. The rates assumed for each year of this scenario are shown below.

FY	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Return	17.9%	6.6%	-8.3%	-11.3%	2.8%	14.4%	6.4%	6.3%	17.0%	-8.1%
FY	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Return	-18.1%	13.2%	24.0%	6.0%	15.3%	19.6%	6.0%	4.5%	13.3%	10.7%

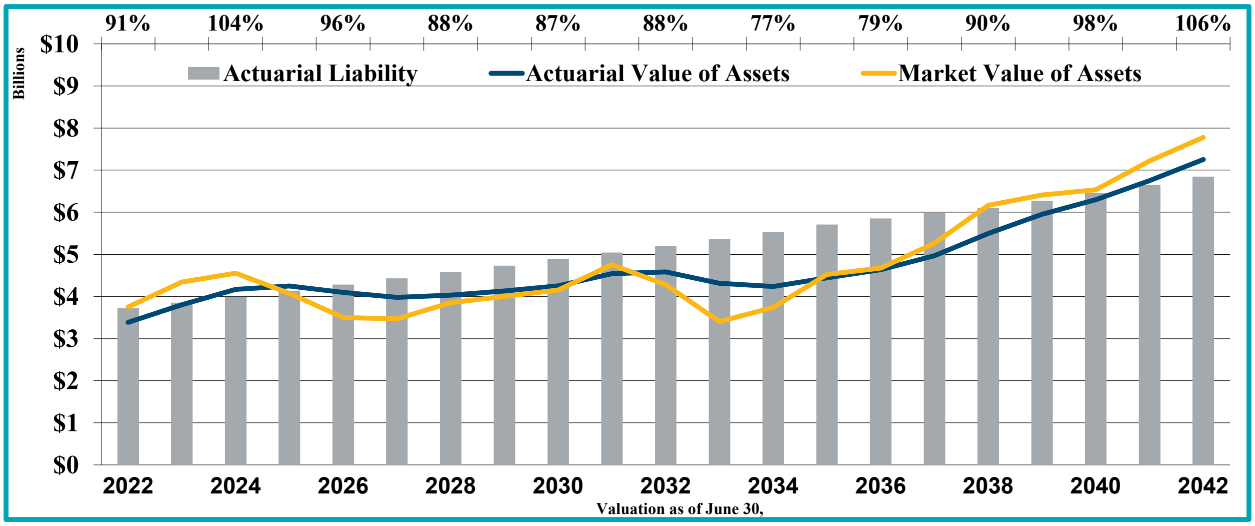
This second varying returns scenario produces greater contribution volatility than in the baseline scenario in absolute terms of the contributions paid as well as a significantly higher average total contribution for the projection period than the other two scenarios, with an average total rate of 18.9% compared to an average 13.9% rate of the last scenario and 13.6% in the baseline scenario. In addition, unlike the previous two scenarios, this scenario does not produce years where the contributions are subject to the minimums and does result in five years in which the maximum contributions of 12.5% for PLDs and 9% for employees would apply and thus there would be reductions in COLA benefits for these years to ensure the adequate funding of the Plan.



The funded ratio of the Plan is also more volatile in this second scenario than in the baseline, as seen in the following graph based on this second illustrative varying returns scenario. Similar to what is seen in the previous two projections, this scenario results in the Plan being funded over 100% at times due to the timing of contribution development and payment as well as the combination of the amortization layers and the COLA cuts that are projected to occur. These

SECTION II – RISK ASSESSMENT AND DISCLOSURE

funded ratios are based on the actuarial values of assets and would vary were they based on market values of assets.



In addition to demonstrating the volatility of these key valuation results of actuarially determined contributions and funded ratios, these varying return scenarios also illustrate that the magnitude of these results can also vary depending on the pattern of returns.

SECTION III – ASSETS

Pension plan assets play a key role in the financial operation of plans and the decisions that 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 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, 2020 and June 30, 2021,
- 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 of assets is developed for use in the valuation process and for evaluating the Plan's ongoing ability to meet its obligations. The actuarial value of the Plan's assets is developed by allocating the actuarial value of the total MainePERS DB assets to each Plan. This section discloses the market and actuarial values of the MainePERS DB assets both in total and for each Plan.

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 2021.

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

Market Value of Total MainePERS DB Assets – June 30, 2020		**$ 15,152,648,971**
Additions		
Contributions:		
Employer Contributions	$ 487,886,863	
Member Contributions	213,983,849	
Transfers	(226,654)	
Total Contributions	$ 701,644,058	
Investment Income:		
Net Appreciation (Depreciation) in Fair Value of Investments	$4,142,724,692	
Interest on Bank Balances	185,277	
Total Investment Income	$4,142,909,969	
Investment Activity Expenses:		
Management Fees	$ (118,561,261)	
Investment Related Expense	(4,948,779)	
Banking Fees	(32,554)	
Total Investment Activity Expenses	$ (123,542,594)	
Net Income from Investing Activities	$4,019,367,375	
Total Additions		$ 4,721,011,433
Deductions		
Retirement Benefits	$(1,016,546,293)	
Disability Benefits	(28,922,911)	
Survivor Benefits	(24,933,925)	
Refunds	(21,209,236)	
Administrative Expenses	(13,950,085)	
Total Deductions		$ (1,105,562,450)
Total		
Net Increase (Decrease)		$ 3,615,448,983
Market Value of Total MainePERS DB Assets – June 30, 2021		**$ 18,768,097,954**

SECTION III – ASSETS

Table III-2 that follows develops the actuarial value of assets for the total MainePERS DB assets as of June 30, 2021 using the adopted actuarial valuation methodology.

Table III-2
Development of Actuarial Value of Total MainePERS Defined Benefit (DB) Assets as of June 30, 2021

1.	Actuarial Value of Total MainePERS DB Assets at June 30, 2020	$ 15,410,598,072
2.	Amount in (1) with Interest to June 30, 2021	16,450,813,442
3.	Employer and Member Contributions for FY 2021	701,644,058
4.	Interest on Contributions in (3), Assuming Received Uniformly throughout FY 2021	23,293,822
5.	Total Disbursements without Administrative Expenses for FY 2021	(1,091,612,365)
6.	Interest on Disbursements in (5), Assuming Payments made Uniformly throughout FY 2021	(36,240,347)
7.	Expected Value of Total MainePERS DB Assets at June 30, 2021 = (2) + (3) + (4) + (5) + (6)	$ 16,047,898,610
8.	Actual Market Value of Total MainePERS DB Assets at June 30, 2021	18,768,097,954
9.	Excess of (8) Over (7)	2,720,199,344
10.	Actuarial Value of Total MainePERS DB Assets at June 30, 2021 = (7) + [33⅓% of (9)]	$ 16,954,631,725

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. The 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, 2021.

SECTION III – ASSETS

Allocation of Actuarial Value of Assets to the Plan

The assets for the defined benefit (DB) Programs administered by MainePERS are commingled for investment purposes with the actuarial value of assets for the total assets allocated to the individual Programs on the basis of the market value of assets for each Program. An asset ratio (total MainePERS actuarial value of assets divided by total MainePERS market value of assets) is 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, 2021 valuation, as shown in Table III-2 above, is 0.903375 ($16,954,631,725 ÷ $18,768,097,954). 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, 2021

Program	Market Value	Actuarial Value
Teachers	$ 9,890,613,635	$ 8,934,933,743
State (Regular & Special)	5,010,030,385	4,525,936,529
Judicial	89,893,506	81,207,552
Legislative	16,659,121	15,049,435
Participating Local Districts (Consolidated & Non-Consolidated)	3,760,901,307	3,397,504,466
Total	$ 18,768,097,954	$ 16,954,631,725

Investment Performance

The market value of assets for the total MainePERS DB assets returned a positive 26.76% during FY 2021. This is greater than the assumed return of 6.75% for FY 2021. The equivalent market value returns for the total MainePERS DB assets for FY 2020 and FY 2019 were positive 2.89% and positive 6.62%, respectively.

On an actuarial value of assets basis, the return for FY 2021 was a positive 12.71% for the total MainePERS DB assets. This return is less than the return on a market value basis but is greater than the 6.75% assumption in effect for FY 2021. Therefore, this return gave rise to an investment gain on the total MainePERS DB 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
2022	$ 196,407,000	$ 126,493,000
2023	204,944,000	129,280,000
2024	213,767,000	132,835,000
2025	222,699,000	118,241,000
2026	231,765,000	114,743,000
2027	241,470,000	114,046,000
2028	251,580,000	114,015,000
2029	261,828,000	114,710,000
2030	271,800,000	116,192,000
2031	282,070,000	117,670,000

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 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 2022 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 2023 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, 2020 and June 30, 2021, 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 no new members, that active members continue to earn salary increases and accrue benefits under their current Plan provisions, and that all actuarial assumptions are exactly met, including the 6.50% 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 DB Programs, the method used is referred to as the entry age normal (EAN) funding method, which is the only permitted 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 required or excess funding and indicates the size of the Plan's stored gains or losses that remain outside of the valuation process currently.

Note that this year we have updated the assumption for the future member contribution rates to assume the adopted member contribution rates for FY 2022 and that these rates remain in effect for future years. We will continue to monitor this assumption and make additional adjustments as warranted. This assumption is important in developing liabilities related to refunds of contributions. In aggregate, we expect that the total liabilities for the Plan will not be materially impacted by this assumption.

SECTION IV – LIABILITIES

We note that none of the liabilities presented in this report are 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, 2020	June 30, 2021
Present Value of Benefits (PVB)		
Active Member Benefits	$ 1,947,102,882	$ 2,175,896,100
Retired, Disabled, Survivor, and Beneficiary Benefits	1,890,540,773	2,057,835,136
Terminated Vested Benefits	123,463,433	147,239,959
Terminated Nonvested Benefits	22,854,605	25,622,333
Total PVB	**$ 3,983,961,693**	**$ 4,406,593,528**
Market Value of Assets (MVA)	$ 3,012,428,367	$ 3,751,152,623
Future Member and PLD Contributions*	971,533,326	655,440,905
Projected (Surplus)/Shortfall	0	0
Total Resources	**$ 3,983,961,693**	**$ 4,406,593,528**
Actuarial Liability (AL)		
Present Value of Benefits (PVB)	$ 3,983,961,693	$ 4,406,593,528
Present Value of Future Normal Costs (PVFNC)	574,220,326	687,577,114
Actuarial Liability (AL = PVB – PVFNC)	**$ 3,409,741,367**	**$ 3,719,016,414**
Actuarial Value of Assets (AVA)	3,063,710,040	3,388,697,748
Net (Surplus)/Unfunded (AL – AVA)	**$ 346,031,327**	**$ 330,318,666**
Present Value of Accrued Benefits		
Present Value of Benefits (PVB)	$ 3,983,961,693	$ 4,406,593,528
Present Value of Future Benefit Accruals (PVFBA)	865,903,507	1,059,213,948
Accrued Liability (PVAB = PVB – PVFBA)	**$ 3,118,058,186**	**$ 3,347,379,580**
Market Value of Assets (MVA)	3,012,428,367	3,751,152,623
Net (Surplus)/Unfunded (PVAB – MVA)	**$ 105,629,819**	**$ (403,773,043)**

* 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 the Plan's 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, 2020	$ 3,983,961,693	$ 3,409,741,367	$ 3,118,058,186
Liability Measurement – June 30, 2021	4,406,593,528	3,719,016,414	3,347,379,580
Liability Measurement Increase/ (Decrease) Due to:	$ 422,631,835	$ 309,275,047	$ 229,321,394
Plan Amendment	$ 0	$ 0	$ 0
Assumption Change	248,427,882	161,866,111	89,634,117
Actuarial (Gain)/Loss	N/C	$ 13,300,796	N/C
Benefits Accumulated and Other Sources	$ 174,203,953	$ 134,108,140	$ 139,687,277

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, 2021 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 2023 based on this June 30, 2021 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 for informational purposes.

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 2023 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.

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, 2020	June 30, 2021
Actuarially Determined Plan Normal Cost Rate	13.9%	14.1%
Actuarially Determined Plan UAL Amortization Rate	4.9%	4.6%
Actuarially Determined Plan Total Rate	18.8%	18.7%

SECTION V – CONTRIBUTIONS

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	48,545,486	367,138,702	**13.2%**	399,948,161	52,793,157
Regular AN	3,506,669	30,066,866	**11.7%**	32,442,990	3,795,830
Regular BC	158,285	2,272,185	**7.0%**	2,506,921	175,484
Special 1C	3,235,784	17,020,733	**19.0%**	18,017,516	3,423,328
Special 2C	14,356,231	96,681,231	**14.8%**	103,026,142	15,247,869
Special 3C	15,205,431	87,205,414	**17.4%**	92,295,269	16,059,377
Special 4C	603,758	4,173,089	**14.5%**	4,404,688	638,680
Special 1N	70,715	435,405	**16.2%**	460,512	74,603
Special 2N	251,801	2,044,707	**12.3%**	2,149,447	264,382
Special 3N	1,029,332	7,052,392	**14.6%**	7,428,261	1,084,526
Special 4N	119,911	1,035,152	**11.6%**	1,090,653	126,516
Total for Plan in Aggregate				663,770,560	93,683,752
Actuarially Determined Plan Normal Cost Rate					**14.1%**

SECTION V – CONTRIBUTIONS

Table V-3 below provides the development of the 4.6% UAL Amortization Rate as of June 30, 2021 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)	$ 3,719,016,414
2. Actuarial Value of Assets (AVA)	3,388,697,748
3. Unfunded Actuarial Liability (UAL)	$ 330,318,666
4. Remaining Balances of Prior Amortization Bases	
a. Original UAL Amount	$ 260,620,102
b. 2016 (Gain)/Loss Base	109,258,449
c. 2017 (Gain)/Loss Base	9,529,594
d. 2018 (Gain)/Loss Base	(74,565,246)
e. 2019 (Gain)/Loss Base	20,501,022
f. 2020 (Gain)/Loss Base	12,510,269
g. 2021 (Gain)/Loss Base	(7,535,524)
h. Sum of the Bases	$ 330,318,666
5. UAL Amortizations	
a. Original UAL Amount 14 Years	$ 24,000,520
b. 2016 (Gain)/Loss Base 15 Years	9,545,906
c. 2017 (Gain)/Loss Base 16 Years	793,368
d. 2018 (Gain)/Loss Base 17 Years	(5,937,843)
e. 2019 (Gain)/Loss Base 18 Years	1,566,822
f. 2020 (Gain)/Loss Base 19 Years	920,364
f. 2021 (Gain)/Loss Base 20 Years	(535,074)
g. Sum of Amortization Payments	$ 30,354,063
6. Covered Payroll	$ 663,770,560
7. UAL Amortization Rate	
a. Original UAL Amount 14 Years	3.7%
b. 2016 (Gain)/Loss Base 15 Years	1.5%
c. 2017 (Gain)/Loss Base 16 Years	0.1%
d. 2018 (Gain)/Loss Base 17 Years	(0.9%)
e. 2019 (Gain)/Loss Base 18 Years	0.2%
f. 2020 (Gain)/Loss Base 19 Years	0.1%
f. 2021 (Gain)/Loss Base 20 Years	(0.1%)
g. Sum of UAL Amortization Rates	**4.6%**

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 2023. 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 2023 rates will be developed based on the results of this June 30, 2021 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 2023 rates from the results of this June 30, 2021 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, 2021 valuation will be used as the basis to determine the Fiscal Year 2023 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 the 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 Annual Financial Reports (AFR) 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, 2021 are discounted at the assumed valuation interest rate of 6.50% per annum in all of these disclosures.

SECTION VI – FINANCIAL DISCLOSURE INFORMATION

Table VI-1 below includes the relevant amounts as of June 30, 2020 and June 30, 2021 as well as a reconciliation between the two dates under FASB ASC Topic 960.

Table VI-1
Accrued Benefits Information

	June 30, 2020	June 30, 2021
FASB ASC Topic 960 Basis		
1. Present Value of Benefits Accrued to Date (PVAB)		
a. Members Currently Receiving Payments	$ 1,890,540,773	$ 2,057,835,136
b. Terminated Vested Members	123,463,433	147,239,959
c. Terminated Nonvested Members	22,854,605	25,622,333
d. Active Members	1,081,199,375	1,116,682,152
e. Total PVAB	$ 3,118,058,186	$ 3,347,379,580
2. Assets at Market Value (MVA)	3,012,428,367	3,751,152,623
3. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero	$ 105,629,819	$ 0
4. Ratio of MVA to PVAB (2)/(1)(d)	96.6%	112.1%
Change in Present Value of Benefits Accrued to Date during FY 2021		
Increase/(Decrease) during Year Attributable to:		
Passage of Time	$ 210,454,056	
Benefits Paid	(182,691,917)	
Assumption Changes	89,634,117	
Plan Changes	0	
Benefits Accrued, Other Gains/Losses	111,925,138	
Net Increase/(Decrease)	$ 229,321,394	

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, 2021, as well as related ratios calculated under the provisions of GASB Statement No. 67 for the Plan.

As of the June 30, 2021 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 Schedule of Changes in Net Pension Liability and Related Ratios FY 2021	
Total Pension Liability (TPL)	
Service Cost (SC)	$ 86,845,610
Interest (Includes Interest on SC)	229,954,447
Changes of Benefit Terms	0
Differences Between Actual and Expected Experience	13,300,796
Changes of Assumptions	161,866,111
Benefit Payments, Including Refunds of Member Contributions	(182,691,917)
Net Change in TPL	**309,275,047**
Beginning of Year (BOY) TPL	**3,409,741,367**
End of Year (EOY) TPL	**$3,719,016,414**
Plan Fiduciary Net Position (FNP)	
PLD (Employer) Contributions	$ 68,506,485
Member Contributions	53,621,126
Transfers	(306,895)
Net Investment Income	802,368,797
Benefit Payments, Including Refunds of Member Contributions	(182,691,917)
Administrative Expenses	(2,773,340)
Net Change in FNP	$ 738,724,256
BOY FNP	**3,012,428,367**
EOY FNP	**$3,751,152,623**
EOY Net Pension Liability (NPL)	**$ (32,136,209)**
FNP as a Percentage of TPL	100.9%
Covered Payroll (Payroll)*	$ 646,287,594
NPL as a Percentage of Payroll	(5.0%)

* For FY 2021

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

Demographic assumptions were changed based on recommendations from the July 1, 2015 to June 30, 2020 experience study as well as the actuarial audit completed of the June 30, 2020 actuarial valuation, first effective with the development of the NPL as of June 30, 2021. The annual rate of investment return was also reduced from 6.75% to 6.50% effective as of this same date. The impact of these changes is included in the TPL reconciliation as changes of assumptions.

SECTION VI – FINANCIAL DISCLOSURE INFORMATION

A ten-year schedule of changes in NPL and related ratios is to be included within the AFR 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 AFRs 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, 2021, we have included suggested information for 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 we 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 2021

	1% Decrease 5.50%	Discount Rate 6.50%	1% Increase 7.50%
Total Pension Liability (TPL)	$4,208,469,435	$ 3,719,016,414	$ 3,314,174,255
Plan Fiduciary Net Position (FNP)	3,751,152,623	3,751,152,623	3,751,152,623
Net Pension Liability (NPL)	$ 457,316,812	$ (32,136,209)	$ (436,978,368)
FNP as a Percentage of TPL	89.1%	100.9%	113.2%

A one percent decrease in the discount rate increases the TPL by approximately 13% and increases the NPL by approximately -1523%. A one percent increase in the discount rate decreases the TPL by approximately 11% and decreases the NPL by approximately 1260%.

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 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 AFR.

SECTION VI – FINANCIAL DISCLOSURE INFORMATION

The Consolidated Plan's risk-sharing contribution rates, which are the basis on which the FY 2020 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 2020 on that risk-sharing 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 AFR 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. It is our expectation that the System's staff will make the determination regarding any notes needed for this schedule for the FY 2021 ADC and we are available to provide any additional information that they may need for this purpose.

Table VI-4
Schedule of Employer Contributions
FY 2021

Actuarially Determined Contribution (ADC)	$ 68,506,485
Contributions in Relation to the ADC	68,506,485
Contribution Deficiency/(Excess)	$ 0
Covered Payroll (Payroll)	$ 646,287,594
Contributions as a Percentage of Payroll	10.6%

Notes to Schedule of Employer Contributions

Valuation Date: June 30, 2019

Timing: June 30, 2021 rates based on the risk-sharing methodology calculated based on the 2019 actuarial valuation.

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 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.

Discount Rate: 6.75%

SECTION VI – FINANCIAL DISCLOSURE INFORMATION

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 the 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, 2021 can be found in the June 30, 2019 Actuarial Valuation Report.

Other Information

None

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, 2021, these values are thus developed as of June 30, 2020. Note that the decision was made to use these averages based on rounding to the nearest whole year, so the values are thus shown as such.

Table VI-5
Average Expected Remaining Service Lives
For Measurement Year Ending June 30, 2021

Status	Total Expected Future Service	Count	Average Remaining Service Lives
Active Members	111,178	11,838	9
In-Pay Members	0	9,860	0
Terminated Vested Members	0	2,402	0
Inactives Due Refunds	0	8,766	0
Total Membership	111,178	32,866	3

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, 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	Gain (or Loss) For Fiscal Year Ended June 30, 2020	Gain (or Loss) For Fiscal Year Ended June 30, 2021
Investment Income	$ (63,941,136)	$ (76,616)	$25,142,719	$ 17,765,627	$ (24,747,551)	$181,079,340
Combined Liability Experience	9,142,757	2,160,603	(1,285,304)	(47,684,163)	6,552,650	(13,300,796)
Gain (or Loss) during Year from Financial Experience	$ (54,798,379)	$ 2,083,987	$ 23,857,415	$ (29,918,536)	$ (18,194,901)	$ 167,778,544
Non-Recurring Items	(50,884,219)	0	59,683,826	0	(2,936,139)	(161,866,111)
Composite Gain (or Loss) During Year	**$ (105,682,598)**	**$ 2,083,987**	**$ 83,541,241**	**$ (29,918,536)**	**$ (21,131,040)**	**$5,912,433**

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, 2021, 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)
2021	$ 561,690,222	$ 2,230,697,428	$ 926,628,764	$3,388,697,748	100%	100%	64%
2020	556,727,111	2,036,858,811	816,155,445	3,063,710,040	100	100	58
2019	521,610,261	1,927,683,260	809,526,084	2,918,585,814	100	100	58
2018	494,411,535	1,818,566,082	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

* Reported assets are measured at actuarial value. Results would be different if the 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	3[2]		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[3]	Yes	7/1/1994	
Augusta, City of	0023	A	2	3[4]	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[5]			Yes	7/1/1996	
Bangor, City of[6]	0020	A	2[6]	3[6]	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	3[7]	Yes	7/1/1996	
Berwick Sewer District	0207	A			Yes	7/1/1994	
Berwick, Town of	0108	A	1[8]		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[9]		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[10]	3[10]		Yes	7/1/1996	
Bridgton, Town of	0176	A	3[11]		Yes	1/1/2020	1/1/2020
Brownville, Town of	0177	A			No	7/1/2010	
Brunswick Fire & Police	0292	A	1[12]	3[12]	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[13]		No	7/1/1995	
Buxton, City of	0370	A	2[14]		Yes	9/1/2020	
Calais, City of	0036	A			FO	7/1/1996	7/1/1996
Camden, Town of	0008	A	2[15]		Yes	7/1/1994	
Cape Elizabeth Police	0317	A	3[16]		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[17]			Yes	7/1/1999	
China, Town of	0235	A			FO	7/1/1996	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
Coastal Counties Workforce	0301	A[18]			Yes	7/1/2003	
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[19]		Yes	7/1/1996	
Cumberland, Town of	0216	A	2	3[20]	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	2[21]		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	
Eastport, City of	0007	A			Yes	7/1/2020	
Ecology Learning Center	0025	A			Yes	7/1/2020	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
Eddington, Town of	0372	A	3		Yes	10/1/2020	
Eliot, Town of	0180	A	1[22]		Yes	7/1/1994	
Ellsworth, City of	0013	A	4		Yes	7/1/1995	
Enfield, Town of	0001	A			Yes	1/1/2020	
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[23]	3[23]	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	3[24]		Yes	7/1/2000	
Fort Kent, Town of	0091	A	2[25]	1[25]	No	7/1/2019	
Franklin County	0102	A	3[26]		Yes	7/1/2006	
Freeport, Town of	0142	A	2[27]	3[27]	Yes	7/1/2003	
Frenchville, Town of	0098	A			No	7/1/1996	
Fryeburg, Town of	0149	A			No	1/1/2011	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
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	
Good Will Home Association	0347	A			Yes	7/1/2013	
Gorham Fire and Police	0334	A	3[28]		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[29]	0311	A			Yes	1/1/2008	
Greenville, Town of	0112	A	2[30]		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[31]		FO	7/1/1996	7/1/2009
Hancock County	0056	A	4[32]	2[32]	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[33]			Yes	7/1/1994	
Hartland, Town of	0360	A			Yes	1/1/2016	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
Hermon, Town of	0150	A			No	7/1/1996	
Hodgdon, Town of	0215	A			FO	7/1/1996	7/1/2007
Holden, Town of	0338	A	4[34]	3[34]	Yes	7/1/2011	
Houlton Water Company	0026	A			Yes	7/1/1995	
Houlton, Town of	0010	A	4[35]	2[35]	Yes	7/1/1996	
Jackman Utility District	0294	A			Yes	7/1/1996	
Jay, Town of	0045	A	2[36]		Yes	7/1/1994	
Kennebec County	0047	A	2[37]		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[38]		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[39]		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
Knox County Sheriffs	0359	A	3[40]		No	1/1/2016	
Lebanon, Town of	0181	A			Yes	7/1/1996	
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[18]		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	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
Lisbon Water Department	0243	A			FO	7/1/1996	7/1/2007
Lisbon, Town of	0103	A	2		Yes	7/1/1996	
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	
Lyman, Town of	0373	A			Yes	12/1/2020	
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	3[41]		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	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
Maine Public Employees Retirement System	0290	A			Yes	7/1/1994	
Maine School Management Association	0239	A			Yes	7/1/1994	
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' Home	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	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
Monmouth, Town of	0316	A	3		Yes	7/1/2008	
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[18]			Yes	7/1/2003	
Mount Desert, Town of	0016	A	3[42]		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	
Northern Aroostook Regional Airport Authority	0374	A	2		Yes	7/1/2021	
North Berwick Water District	0308	A			Yes	7/1/2006	
North Berwick, Town of	0254	A	3[43]	1[43]	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	2[44]		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[45]	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
Old Town Housing Authority	0262	A			FO	7/1/1994	7/1/1994
Old Town Water District	0079	A			No	7/1/1994	
Old Town, City of	0111	A	2[46]	3[46]	No	7/1/1995	
Orland, Town of	0166	A			No	7/1/1996	
Orono, Town of	0061	A	2[47]		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	2[48]	4[48]	Yes	7/1/1994	
Oxford, Town of	0200	A	1[49]		No	7/1/1996	
Paris Utility District	0159	A			Yes	7/1/1995	
Paris, Town of	0127	A	2[50]		Yes	7/1/1996	
Penobscot County	0011	A	2[51]		Yes	7/1/1994	
Penquis	0237	A			No	7/1/1995	
Phippsburg, Town of	0202	A	3[52]		Yes	7/1/1996	
Piscataquis County	0121	A			Yes	7/1/1994	
Pittsfield, Town of	0110	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
Pleasant Point Passamaquoddy Reservation Housing Authority	0165	A			Yes	7/1/1996	
Poland, Town of	0336	A	1		Yes[53]	7/1/2010	
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	
Presque Isle, City of	0004	A	3[54]		Yes	1/1/2020	
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[55]			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	

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 #24	0320	A			Yes	7/1/2009	
Regional School Unit #25	0321	A[56]			No	7/1/2009	
Regional School Unit #26	0330	A			Yes	7/1/2009	
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	2[57]		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
Rumford Fire & Police	0060	A	2[58]	4	Yes	7/1/1995	
Rumford Mexico Sewerage District	0247	A			Yes	7/1/1996	
Rumford Water District	0065	A			Yes	7/1/1995	
Rumford, Town of	0090	A			Yes	7/1/1995	
Sabattus, Town of	0175	A	3[59]		FO	7/1/1996	7/1/2006
Saco, City of	0192	A	2[60]	3[60]	No[60]	7/1/1995	Varies[60]
Sagadahoc County	0096	A	2[61]	3[61]	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[62]	2[62]	FO	7/1/1995	7/1/2002
Scarborough, Town of	0147	A	3[63]	1[63]	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	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
Searsport Water District	0124	A			No	7/1/1996	
Searsport, Town of	0117	A			No	7/1/1996	
Skowhegan, Town of	0080	A	3		Yes	7/1/1996	
Somerset County	0101	A	3[64]	2[64]	Yes	7/1/2005	
South Berwick Sewer District	0299	A[18]			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[65]		Yes	7/1/1995	
Southwest Harbor, Town of	0368	A	2				
St. Agatha, Town of	0030	A			Yes	7/1/1996	
Standish, Town of	0371	A	2		No	1/1/2021	
Thomaston, Town of	0164	A	2	3[66]	Yes	1/1/2010	1/1/2010
Thompson Free Library	0318	A			Yes	1/1/2009	
Topsham Sewer District	0307	A[67]			Yes	7/1/2005	
Topsham, Town of	0081	A	2	3	Yes	7/1/1996	
Trenton, Town of	0341	A			Yes	7/1/2011	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
Union, Town of	0342	A			No	7/1/2012	
United Technologies Center, Region 4, S Penobscot	0269	A			FO	7/1/1996	7/1/2009
Van Buren Housing Authority	0229	A			Yes	7/1/1994	
Van Buren, Town of	0182	A	3[68]		Yes	7/1/1995	
Vassalboro, Town of	0153	A			Yes	7/1/1996	
Veazie Fire & Police	0305	A	3[69]		Yes	7/1/2004	
Waldo County	0046	A	2[70]	3[70]	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[71]		Yes	7/1/1996	
Waterboro, Town of	0356	A	3[72]		No	1/1/2015	
Waterville Fire & Police	0066	A	3		No[73]	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

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
Wells, Town of[74]	0107	A	2[74]		No[74]	1/1/2018	
West Bath, Town of	0333	A	3[75]		Yes	7/1/2009	
Westbrook Fire & Police	0070	A	1	3	Yes	7/1/2006	
Westbrook, City of	0122	A			Yes	7/1/2006	
Wilton, Town of	0086	A	2	3[76]	FO	1/1/2009	1/1/2009
Windham, Town of	0309	A	4	3[77]	Yes	7/1/2006	
Winslow Police	0362	A	2[78]		Yes	1/1/2017	
Winter Harbor Utility District	0250	A			Yes	7/1/1994	
Winterport Water & Sewer Districts	0306	A[67]			Yes	7/1/2005	
Winthrop Utilities District	0337	A			Yes	1/1/2011	
Winthrop, Town of	0179	A	2[79]		FO	7/1/1994	7/1/2003
Wiscasset, Town of	0417	A	2[44]		No	1/1/2012	
Yarmouth Water District	0278	A			Yes	7/1/1994	
Yarmouth, Town of	0116	A	1[80]		Yes	7/1/1996	
York County	0037	A	2[81]	1[81]	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	

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

PLD Name	PLD#	Regular Plan	Special Plan	Special Plan	COLA	Entry Date	FO COLA Date
York, Town of	0028	A	2[82]	3[82]	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 for law enforcement officers from January 1, 2020

[3] 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.

[4] Plan 3 is applicable for future service only rendered by the City's Firefighters hired after December 31, 1989, effective January 1, 2015 and for the City's Police Officers for future service only from January 1, 2020.

[5] 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.

[6] Rejoined July 1, 2018, adopting Plan 2 for future service only rendered by the City's Firefighters and Police Officers. Plan 3 applicable for future service only rendered by the City's full-time Firefighters and Emergency Medical Services employees, effective July 1, 2021.

[7] Plan 3 is applicable for future service only rendered by the City's Police Officers from July 1, 2020.

[8] 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.

[9] 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.

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[10] 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.

[11] Rejoined effective January 1, 2020 with only full-time Police Officers covered under Plan 3 on an ongoing basis. Police Officers employed on January 1, 2020 can purchase prior service under Plan 3 with COLA.

[12] 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.

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

[14] Plan 2 applicable for all full-time Police Officers, Firefighters, Emergency Services Employees, and Dispatchers effective September 1, 2020.

[15] 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 and EMS employees from July 1, 2020.

[16] Plan 3 applicable for future service only rendered by Police Officers, effective July 1, 2021.

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

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

[19] 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.

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

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

[21] Plan 2 applicable for future service only rendered by the Town's Firefighters and EMS employees from August 1, 2020.

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

[23] 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. Plan 3 applicable for future service only rendered by the Town's Dispatchers, effective July 1, 2021.

[24] Plan 3 applicable for future service only rendered by the Town's Police Officers, Firefighters, and Emergency Medical Services employees, effective November 1, 2020.

[25] 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. Plan 1 applicable for future service only rendered by the Town's Police Officers, effective July 1, 2021. Plan 2 applicable for future service only rendered by the Town's general government employees and appointed officials, effective July 1, 2021. Plan 2 applicable for future service only rendered by the Town's town councilors, effective July 1, 2021.

[26] 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.

[27] Plan 2 applicable for future service only for service rendered by the Town's Firefighters, Police Officers, and general government employees from July 1, 2003. Plan 3 applicable for future service only rendered by the Town's Freeport Police Benevolent Association (FPBA) Police Officers, effective August 1, 2021.

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[28] Rejoined effective July 1, 2020 with only full-time Police Officers covered on an ongoing basis. Other employees who were participating when the PLD withdrew on August 31, 2012 also covered.

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

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

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

[32] Plan 4 applicable for future service only rendered by the County's Law Enforcement Officers from January 1, 2018 through June 30, 2020. Plan 2 is applicable for future service only rendered by the County's Law Enforcement Officers from July 1, 2020.

[33] 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.

[34] Plan 4 is applicable for service rendered by the Town's Police Officers and Firefighters prior to July 1, 2020. Plan 3 is applicable for future service only rendered by the Town's Police Officers and Firefighters from July 1, 2020.

[35] Plan 4 applicable for future service only rendered by the Town's Firefighters and Police Officers from July 1, 2001. Plan 2 applicable for future service only rendered by the Town's Police Officers and Dispatchers, effective July 1, 2021.

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

[37] 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.

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

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

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

[40] 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.

[41] Plan 3 applicable for future service only rendered by the Town's Police Officers, effective November 1, 2020.

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

[43] Plan 3 is applicable to all police officers employed on or hired after July 1, 2020. All police officers in the PLD on July 1, 2020 elected to move their prior service from Plan 1 to Plan 3.

[44] Plan 2 is applicable for future service only rendered by the Town's Police Officers from July 1, 2020.

[45] 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.

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

[47] 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.

[48] Plan 2 applicable for future service only for service rendered by Police Officers from July 1, 2003. Plan 4 applicable for future service only rendered by certain Corrections Employees of the County, effective January 1, 2021.

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[49] Plan 1 is applicable for future service only rendered by the Town's Police Officers from July 1, 2020.

[50] Plan 2 applicable for future service only rendered by the Town's union Police Officers, effective July 1, 2021.

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

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

[53] COLA adopted for Firefighters for future service only after July 1, 2020. COLA adopted for full-time general government workers, effective July 1, 2021.

[54] Rejoined under consolidated plan effective January 1, 2020 for employees who work at least 20 hours per week, excluding City Council members. Police Officers and Firefighters are covered under plan 3 from January 1, 2020. Police Officers and Firefighters who were MainePERS members on December 31, 2019 are eligible to retire with 25 years of combined pre and post consolidated special plan service with age-reduction from age 55 applied to pre-consolidated plan benefit. General Government employees who were MainePERS members on December 31, 2019 retain a Normal Retirement Age of 60 and are considered to have had 20 years of consolidated plan service as of 7/1/2019 so "old" age-reduction factors apply to retirement before age 60. Employees hired on/after date of district's previous withdrawal effective June 30, 1996 can purchase past service under plan A or 3, whichever applies. Plan 3 applicable for future service only rendered by the City's Dispatchers, effective January 1, 2021.

[55] Coverage expanded to include Food Service Director effective January 1, 2021, with the member in this position permitted to purchase prior service by paying the full cost.

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[56] Coverage for employees who were members with either P0130a or P0166a immediately prior to being employed by RSU #25 was effective July 1, 2009. Coverage expanded to include Director of Technology and Central Office Bookkeeper positions effective July 1, 2019, with members in these positions permitted to purchase prior service by paying the full cost. Coverage was further expanded to include the position of Human Resources Director effective July 1, 2020, with the member in this position permitted to purchase prior service by paying the full cost.

[57] Plan 2 applicable for future service only rendered by the Town's Police Officers, effective January 1, 2021.

[58] 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 by Firefighters prior to January 1, 2014. Plan 2 applicable for future service only for Police Officers from January 1, 2020.

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

[60] POLICE: Plan 3 without COLA (3N) is applicable to the City's Police Officers for service from July 1, 2015 through June 30, 2019. Service for the City's Police Officers prior to July 1, 2015 remains under Plan 2 without COLA (2N). Plan 3 with COLA (3C) for future service only is applicable to the City's Police Officers from July 1, 2019. FIRE: Plan 3 without COLA (3N) is to the City's Firefighters for service from July 1, 2016 through June 30, 2020. Service for the City's Firefighters prior to July 1, 2016 remains under Plan 2 without COLA (2N). Plan 3 with COLA (3C) for future service only is applicable to the City's Firefighter from July 1, 2020.

[61] 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. Plan 2 applicable for future service only rendered by the County's communications department employees, effective July 1, 2021.

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[62] 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.

[63] 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. Plan 3 applicable for future service only rendered by the Town's Dispatchers, effective August 1, 2021.

[64] Plan 3 applicable for future service only for Law Enforcement Officers from January 1, 2019. Plan 2 is applicable for future service for the County's Communications Bargaining Unit employees (dispatchers) from July 1, 2020.

[65] 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.

[66] Plan 3 applicable for future service only rendered by the Town's Police Officers, effective July 1, 2021.

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

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[68] Plan 3 is applicable for future service only rendered by the Town's Police Officers from January 1, 2020.

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

[70] Plan 2 is applicable for all service for the County's Correctional Officers as of July 1, 2017. Plan 3 is applicable for future service only rendered by the County's Law Enforcement Officers from January 1, 2020. Service before January 1, 2020 remains under plan 2 for the County's Law Enforcement Officers.

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

[72] Plan 3 applicable for future service only rendered by the Town's Firefighters, effective August 1, 2021.

[73] COLA applicable for Firefighters and Emergency Medical Services for future service only effective January 1, 2021.

[74] Town rejoined as of January 1, 2018 with all eligible employees, excluding Fire and Police that are in PLD 349, under Plan AN with one employee remaining under Plan AC from the Town's prior participation. Effective July 1, 2020, future service only rendered by the Town's Police Dispatchers is under Plan 2 with COLA (2C).

[75] Plan 3 is applicable for future service only rendered by the Town's Firefighters from August 1, 2021.

[76] Plan 3 is applicable for future service only rendered by the Town's Police Officers from July 1, 2020.

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

APPENDIX A – PARTICIPATING LOCAL DISTRICT PLAN ELECTIONS

[78] 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.

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

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

[81] 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.

[82] 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, 2021	
Regular Plan Members	
Count	8,392
Average Current Age	47.6
Average Benefit Service	8.6
Average Vesting Service	8.9
Average Valuation Pay	$ 51,823
Special Plan Members	
Count	3,312
Average Current Age	40.0
Average Benefit Service	10.2
Average Vesting Service	10.8
Average Valuation Pay	$ 69,104
All Plan Members	
Count	11,704
Average Current Age	45.5
Average Benefit Service	9.0
Average Vesting Service	9.4
Average Valuation Pay	$ 56,713

Participating Local Districts of the Maine Public Employees Retirement System
Inactive Member Data as of June 30, 2021
Regular Plans

	Count	Average Age	Total Annual Benefit	Average Annual Benefit
Retired	5,827	73.3	$ 89,934,482	$ 15,434
Retired - Concurrent Beneficiary	380	71.9	1,460,098	3,842
Disability - Section 1122	24	77.5	320,721	13,363
Disability – Sections 3 and 3A	268	67.1	5,879,079	21,937
Beneficiary of Above	1,040	73.9	11,122,785	10,695
Pre-Retirement Death Beneficiary	141	71.8	914,826	6,488
Terminated Vested	2,200	53.2	12,283,489	5,583
Inactive Due Refund	8,904	NA	NA	NA

APPENDIX B – MEMBERSHIP INFORMATION

Participating Local Districts of the Maine Public Employees Retirement System Inactive Member Data as of June 30, 2021 Special Plans				
	Count	**Average Age**	**Total Annual Benefit**	**Average Annual Benefit**
Retired	1,607	68.2	$ 56,422,404	$ 35,110
Retired - Concurrent Beneficiary	376	67.9	2,544,250	6,767
Disability - Section 1122	15	74.3	345,234	23,016
Disability – Sections 3 and 3A	94	61.5	2,998,995	31,904
Beneficiary of Above	300	73.4	5,692,688	18,976
Pre-Retirement Death Beneficiary	21	62.4	151,537	7,216
Terminated Vested	363	47.5	3,497,254	9,634
Inactive Due Refund	575	NA	NA	NA

In preparing this report, we relied on data provided by MainePERS as modified following the procedures outlined in the State of Maine Data Processing Notebook. Adjustments to the data are made based on this processing notebook. Accuracy of the results is dependent on the completeness of the underlying information. The plan sponsor is responsible for the validity and completeness of the information provided. We believe the data provided as modified as documented in the Processing Notebook is sufficient for the actuarial analysis performed.

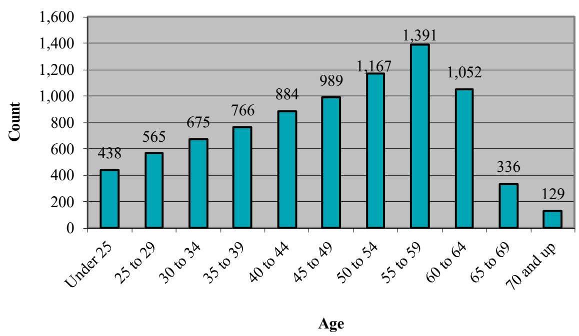
APPENDIX B – MEMBERSHIP INFORMATION

Distribution of Active Members
As of June 30, 2021

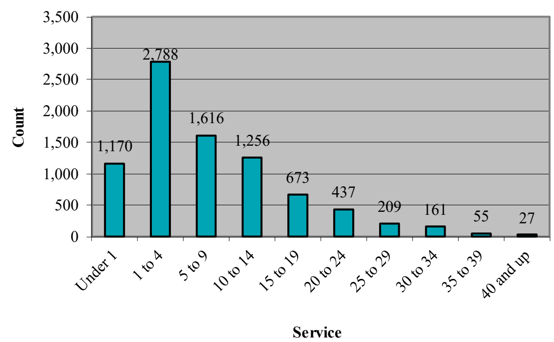
Regular Plan Participants

	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	246	189	3	0	0	0	0	0	0	0	438
25 to 29	149	329	85	2	0	0	0	0	0	0	565
30 to 34	136	342	153	43	1	0	0	0	0	0	675
35 to 39	123	322	178	112	29	2	0	0	0	0	766
40 to 44	115	333	209	140	62	24	1	0	0	0	884
45 to 49	125	347	220	147	91	52	7	0	0	0	989
50 to 54	93	334	227	233	127	83	44	26	0	0	1,167
55 to 59	104	320	269	259	166	131	64	57	18	3	1,391
60 to 64	55	193	181	224	150	96	54	60	28	11	1,052
65 to 69	15	53	68	70	34	37	24	18	7	10	336
70 and up	9	26	23	26	13	12	15	0	2	3	129
Total	1,170	2,788	1,616	1,256	673	437	209	161	55	27	8,392

Age Distribution



Service Distribution



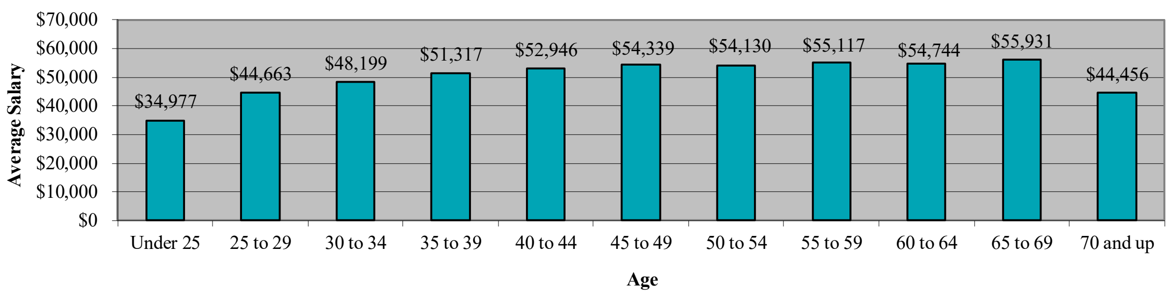
APPENDIX B – MEMBERSHIP INFORMATION

Distribution of Active Members
As of June 30, 2021

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	$ 32,219	$ 38,565	$ 35,026	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 34,977
25 to 29	38,546	45,283	52,782	53,462	0	0	0	0	0	0	44,663
30 to 34	42,833	46,126	54,695	58,356	56,032	0	0	0	0	0	48,199
35 to 39	41,434	47,779	56,033	63,274	56,668	62,064	0	0	0	0	51,317
40 to 44	41,855	48,232	54,972	64,668	62,320	61,032	58,246	0	0	0	52,946
45 to 49	42,320	49,048	56,268	64,180	62,510	64,995	78,582	0	0	0	54,339
50 to 54	41,621	46,375	52,884	60,549	59,801	65,297	65,436	69,356	0	0	54,130
55 to 59	42,422	47,165	55,462	58,392	56,993	60,299	69,535	68,053	68,784	64,144	55,117
60 to 64	44,646	46,069	51,794	60,420	57,063	56,060	57,785	61,508	65,151	69,003	54,744
65 to 69	37,674	45,903	50,561	64,138	56,835	55,064	67,625	68,054	59,011	63,612	55,931
70 and up	34,159	37,125	37,855	48,555	46,975	66,812	42,908	0	59,805	51,138	44,456
Average	$ 39,577	$ 46,377	$ 54,090	$ 61,074	$ 58,558	$ 60,660	$ 63,755	$ 65,824	$ 65,364	$ 64,481	$ 51,823

Average Salary Distribution



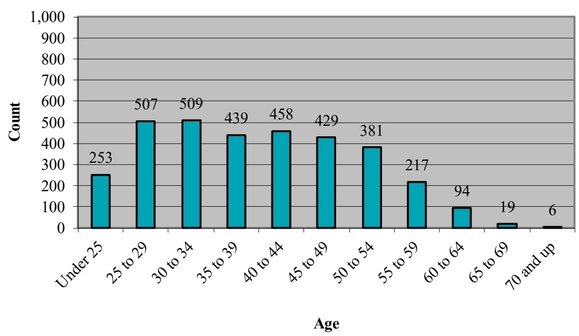
APPENDIX B – MEMBERSHIP INFORMATION

Distribution of Active Members
As of June 30, 2021

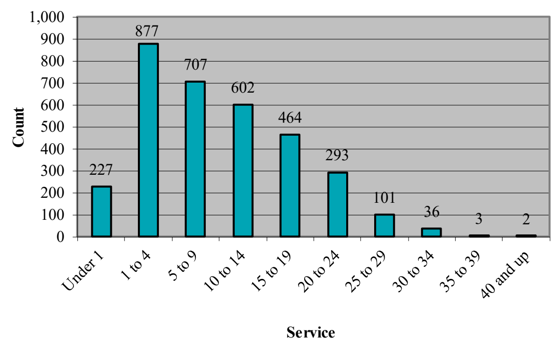
Special Plan Participants

	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	85	166	2	0	0	0	0	0	0	0	253
25 to 29	56	309	142	0	0	0	0	0	0	0	507
30 to 34	38	170	220	81	0	0	0	0	0	0	509
35 to 39	15	81	138	155	50	0	0	0	0	0	439
40 to 44	10	65	77	130	131	45	0	0	0	0	458
45 to 49	13	32	57	83	111	102	30	1	0	0	429
50 to 54	5	32	37	79	91	88	43	6	0	0	381
55 to 59	3	12	17	48	60	39	16	21	1	0	217
60 to 64	2	6	13	21	18	17	10	3	2	2	94
65 to 69	0	3	4	5	3	1	1	2	0	0	19
70 and up	0	1	0	0	0	1	1	3	0	0	6
Total	227	877	707	602	464	293	101	36	3	2	3,312

Age Distribution



Service Distribution



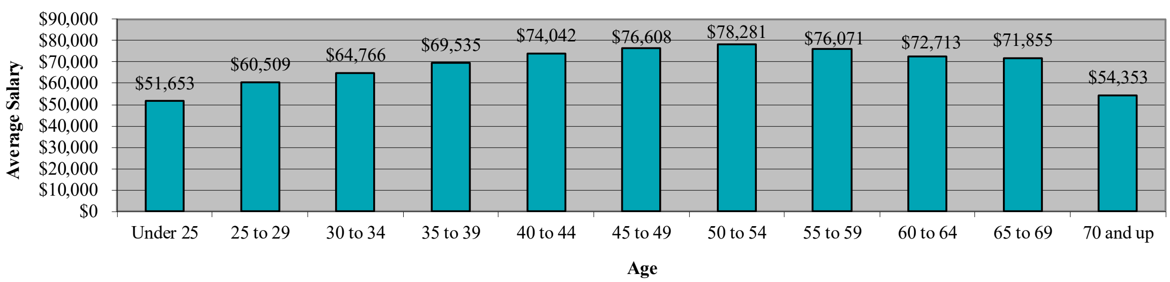
APPENDIX B – MEMBERSHIP INFORMATION

Distribution of Active Members
As of June 30, 2021

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	$ 42,373	$ 56,378	$ 53,791	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 51,653
25 to 29	45,615	60,339	66,751	0	0	0	0	0	0	0	60,509
30 to 34	48,460	59,600	67,079	76,978	0	0	0	0	0	0	64,766
35 to 39	48,609	60,043	66,570	74,649	83,516	0	0	0	0	0	69,535
40 to 44	45,122	60,418	68,410	73,254	82,461	87,554	0	0	0	0	74,042
45 to 49	43,570	55,016	71,233	76,290	78,393	85,682	88,517	48,680	0	0	76,608
50 to 54	47,289	61,982	69,731	76,472	78,491	82,628	93,016	95,023	0	0	78,281
55 to 59	40,742	57,486	66,831	75,901	80,321	77,479	79,494	83,613	47,231	0	76,071
60 to 64	66,565	60,642	67,437	76,544	77,570	69,967	67,228	79,856	80,763	97,455	72,713
65 to 69	0	36,380	56,900	84,390	100,745	97,418	77,647	64,630	0	0	71,855
70 and up	0	50,049	0	0	0	26,619	116,203	44,416	0	0	54,353
Average	$ 45,094	$ 59,160	$ 67,438	$ 75,373	$ 80,475	$ 82,887	$ 87,062	$ 79,910	$ 69,586	$ 97,455	$ 69,104

Average Salary Distribution

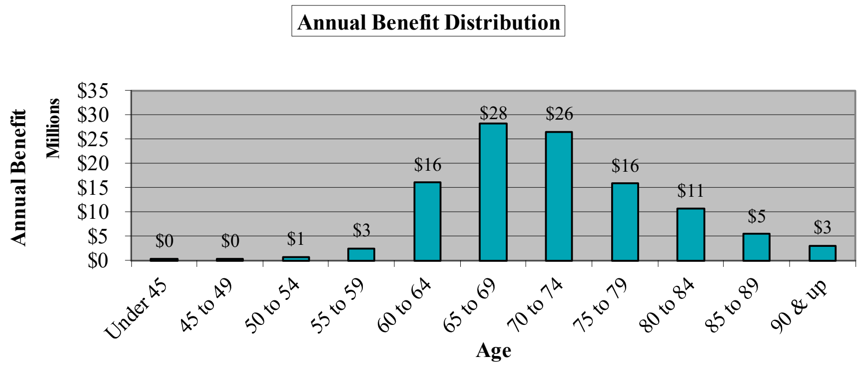


APPENDIX B – MEMBERSHIP INFORMATION

Distribution of Retirees, Disabled Members, Beneficiaries, and Survivors As of June 30, 2021

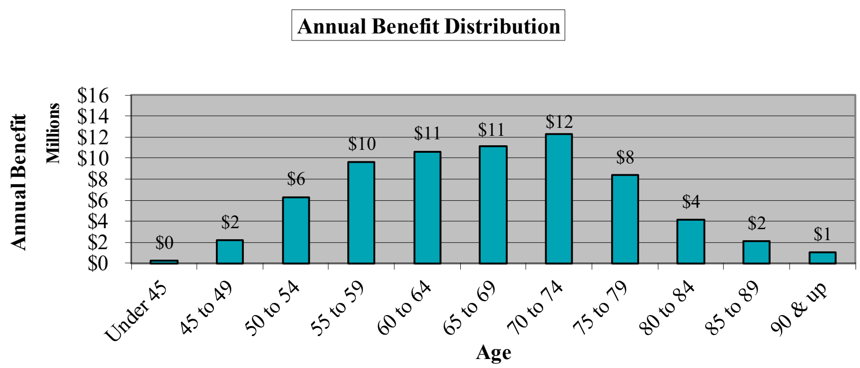
Regular Plan Participants

Age	Count	Annual Benefit
Under 45	56	$ 346,492
45 to 49	36	372,248
50 to 54	64	793,865
55 to 59	158	2,513,054
60 to 64	907	16,005,777
65 to 69	1,845	28,157,784
70 to 74	1,771	26,488,573
75 to 79	1,175	15,815,574
80 to 84	849	10,651,084
85 to 89	478	5,422,459
90 & up	341	3,065,081
Total	7,680	$ 109,631,991



Special Plan Participants

Age	Count	Annual Benefit
Under 45	15	$ 263,890
45 to 49	64	2,184,667
50 to 54	200	6,309,121
55 to 59	300	9,651,170
60 to 64	340	10,634,153
65 to 69	370	11,151,144
70 to 74	450	12,272,973
75 to 79	333	8,387,531
80 to 84	182	4,160,811
85 to 89	103	2,084,263
90 & up	56	1,055,385
Total	2,413	$ 68,155,108



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, 2020	**11,838**	**7,222**	**2,086**	**162**	**390**	**2,402**
New hires	1,349					
Rehires	88					(32)
New PLDs	39					
Movement between plans	(1)	-	-			(1)
New retirees	(292)	437				(145)
New disabled retirees	(12)				24	(12)
New beneficiaries due to retirements			36			
New deferred vested members	(359)					411
Non-vested terminations	(735)					
Refunds	(199)					(52)
Deaths, no future benefits	(5)	(197)	(80)	(9)	(4)	(7)
Deaths with a survivor or beneficiary	(7)	(30)	54	8	(11)	(4)
Benefits expired				-		
Benefits restarted				1		
Records combined / split						
Data correction	-	2	-	-	2	3
As of June 30, 2021	**11,704**	**7,434**	**2,096**	**162**	**401**	**2,563**

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

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. See the Annual PLD Contribution Rate reports for further details.

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 August 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:

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.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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.

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.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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: 1/100 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.

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.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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

Cost-of-Living Adjustment: See item 11.

Special Plan 1N

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

Special Plan 2C

Eligibility: 25 years of creditable service in named positions.

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

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

Cost-of-Living Adjustment: See item 11.

Special Plan 2N

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

Special Plan 3C

Eligibility: 25 years of creditable service in named positions.

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

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

Cost-of-Living Adjustment: See item 11.

Special Plan 3N

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

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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.

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)).

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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 the 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 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 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 the 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, the beneficiary may elect survivor benefits payable to a surviving spouse, dependent children, parent, or other designated beneficiaries in monthly amounts varying by the status of beneficiary and number of eligible survivors. Otherwise, accumulated contributions with interest are payable to the designated beneficiary, spouse, children, older parents, or estate.

8. Pre-Retirement Accidental Death Benefits

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

Benefit:

- If the member leaves no dependent children, two-thirds of the member's average final compensation to the surviving spouse until death.

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

APPENDIX C – SUMMARY OF PLAN PROVISIONS

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 the date of termination, deferred to normal retirement age.

10. Refund of Contributions

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

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

11. Cost-of-Living Adjustments (COLA)

All service and disability retirement and survivor benefits payable to (or in relation to) benefit recipients who were employed by a PLD that elected a Plan that provides for a COLA are adjusted each year that there is a percentage change in the Consumer Price Index, based on the Index. If the percentage change is negative, then no adjustment is made in that year. In subsequent years, the adjustment that would have been made will be adjusted downward to the extent necessary to recoup the full actuarial value of not having made the previous year's negative adjustment. This process of adjustment may occur over a multi-year period if needed to recoup the full value of negative changes in the Index.

Cost-of-living adjustments are effective September 1 and are applied to all benefits that have been in payment for 6 months for retirees who retire prior to September 1, 2015, 12 months for retirees who retired on or after September 1, 2015, and 24 months for those who retire on or after September 1, 2019.

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

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

APPENDIX C – SUMMARY OF PLAN PROVISIONS

12. Methods of Payment of Service Retirement Benefits

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

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

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

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

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

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

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

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

Option 8: Option 4 with pop-up*.

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

13. Plan Changes Since Prior Valuation

None

Appendix C 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

Where assumptions were changed in 2021, the revised assumption in effect for this June 30, 2021 valuation are shown with grey shading.

1. Annual Rate of Investment Return

PLDs	6.50% *(previously 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	Prior	Revised
0	9.0%	11.48%
1	4.8	8.66
2	3.6	4.81
3	3.1	4.29
4	2.75	4.03
5	2.75	3.78
10	2.75	3.26
15	2.75	3.26
20	2.75	3.01
25	2.75	2.75
30	2.75	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)

	Prior Assumption		Revised Assumption	
Service	Regular	Special	Regular	Special
0	25.0%	25.0%	28.0%	17.90%
1	20.0	12.5	21.0	14.4
2	15.0	10.0	15.0	10.5
3	12.0	7.5	12.0	9.5
4	10.0	5.0	10.0	7.8
5	9.0	4.0	9.0	7.9
10	6.0	2.5	5.0	4.5
15	4.0	2.5	3.5	2.9
20	2.5	2.5	3.5	2.7
25	2.5	2.5	3.0	0.0

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 the time of termination.

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

	Prior Assumption Showing values in 2021		Revised Assumption Showing values in 2021	
Age	Male	Female	Male	Female
50	40	31	31	25
55	56	42	47	35
60	76	61	72	48
65	108	93	104	70
70	167	149	160	113
75	273	245	271	202
80	459	413	489	373
85	801	734	899	706
90	1,434	1,333	1,560	1,317
95	2,297	2,226	2,432	2,148

Prior 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

APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

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.

Revised rates are based on 112.1% and 118.5% of the 2010 Public Plan General Benefits-Weighted Healthy Retiree Mortality Table, respectively, for males and females. The proposed rates are projected generationally using the RPEC_2020 model, with an ultimate rate of 1.00% for ages 80 and under, grading down to 0.05% at age 95, and further grading down to 0.00% at age 115, along with convergence to the ultimate rates in the year 2027. All other parameters used in the RPEC_2020 model are those included in the published MP-2020 scale.

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

	Prior Assumption (showing values in 2021)		Revised Assumption (showing values in 2021)	
Age	Male	Female	Male	Female
20	4	2	3	1
25	4	2	3	1
30	4	2	4	2
35	5	3	6	3
40	6	5	7	4
45	9	7	8	5
50	16	12	12	7
55	27	19	18	11
60	46	28	28	17
65	81	43	40	25

* 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.

Prior 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.

Revised rates are based on 83.5% and 88.6% of the 2010 Public Plan General Benefits-Weighted Employee Mortality Table, respectively, for males and females. These rates are generationally projected using the same version of the RPEC_2020 model as described in the healthy annuitant mortality.

APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

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

	Prior Assumption (showing values in 2021)		Revised Assumption (showing values in 2021)	
Age	Male	Female	Male	Female
25	80	23	36	21
30	77	29	53	37
35	90	41	72	57
40	108	56	89	76
45	168	88	112	99
50	206	116	161	144
55	238	146	220	185
60	270	173	280	213
65	323	211	331	223
70	418	286	390	264

Prior 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.

Revised rates for are based on 107.3% and 103.2% of the 2010 Public Plan Non-Safety Benefits-Weighted Disabled Retiree Mortality Table, respectively, for males and females. These rates are generationally projected using the same version of the RPEC_2020 model described in the healthy annuitant mortality.

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

Regular Plans

	Regular Plans			
	Current Assumption		Proposed Assumption	
	NRA 60	NRA 65	NRA 60	NRA 65
45	50	50	N/A	N/A
50	50	50	N/A	N/A
55	50	50	N/A	N/A
60	200	50	120	60
65	250	200	250	200
70	1,000	1,000	1,000	250
75	1,000	1,000	1,000	1,000

APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

In the case of PLD employees, NRA 60 refers to those who were hired prior to July 1, 2014, and Tier 2NRA 65 refers to those who were hired on or after July 1, 2014.

Special Plans

Special Plans		
Years of Service	Current Assumption	Proposed Assumption
20	400	350
21	300	300
22	300	280
23	300	250
24	300	200
25	400	350
26	300	250
27	300	230
28	300	250
29	300	400
30	400	250
31-33	300	250
34	300	330
35+	1,000	1,000

Note that 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	Current Assumption	Proposed Assumption Regular	Proposed Assumption Special
25	1.8	0.9	2.3
30	2.4	1.2	3.0
35	3.0	1.8	4.5
40	4.2	4.2	10.5
45	9.0	8.7	21.8
50	19.8	16.5	41.3
55	36.6	28.5	70.0
60	65.0	30.0	70.0

* 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 the valuation date. Annual increases are applied as of the beginning of each subsequent valuation.

Member Contribution Interest Rate: 5% assumed for all future years. Revised assumption: Reflect actual historical member contribution interest rates from 1970 through the valuation; future contribution interest assumed to equal the inflation assumption of 2.75%.

COLA Timing: June 30. Revised assumption: September 1.

Member Contribution Rates: For purposes of developing liability amounts, the member contribution rates in effect for FY 2021 are assumed to continue for all periods in the future.

APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

12. Rationale for Assumptions

The prior 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 the advice of the MainePERS investment consultants.

The revised demographic assumptions were adopted by the Board of Trustees at their May 13, 2021 meeting. The revised discount rate was adopted by the Board of Trustees at their August 12, 2021 meeting. The demographic assumptions adopted are based on an experience study covering the period from July 1, 2015 through June 30, 2020, and the economic assumptions are based on this experience study along with advice of the MainePERS investment consultants.

13. Changes Since Last Valuation

Assumptions for salary increase, termination, mortality, disability, retirement, COLA timing and member contribution interest were changed based on results of the most recent experience study. The discount rate was also lowered to 6.50%.

14. Rationale for Change in Actuarial Assumptions

The revised demographic assumptions were adopted by the Board of Trustees at their May 13, 2021 meeting The revised discount rate was adopted by the Board of Trustees at their August 12, 2021 meeting. The demographic assumptions adopted are based on an experience study covering the period from July 1, 2015 through June 30, 2020, and the economic assumptions are based on this experience study along with advice of the MainePERS investment consultants.

15. Disclosure of Models Used

ProVal: Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate the liabilities, normal costs, and projected benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this actuarial valuation.

Projection Model: This report includes projections of future contributions, assets, liabilities, and funded status for the purpose of assisting the Board of Trustees with the management of the Fund. We have used Cheiron's P-Scan and R-Scan models to develop these projections. The model is also used to stress test the impact of volatile asset returns over the projection period.

The P-Scan projection uses projected benefit payments for current members but does not include projected benefit payments for new members. This limitation is not material for the next 20 years, but longer projection periods should be viewed with caution. The P-Scan projection uses standard roll-forward techniques that implicitly assume a stable active population. Changes in the demographic characteristics of the active population will lead to different results.

The stochastic projections of investment returns are based on an assumption that each future year's investment return is independent from all other years and is identically distributed according to a lognormal distribution. This assumption may result in an unrealistically wide range of compound investment returns over longer periods of time. The standard deviation used in the stochastic projection of investment returns was provided by the investment consultant.

Mortality Improvement Model: Cheiron utilized the RPEC_2014_v2020 Model Implementation Tool for the purposes of developing the customized version of MP-2020 used in this report. This tool is updated and published annually by the Society of Actuaries and their Retirement Plans Experience Committee and allows actuaries to develop customized versions of mortality improvement scales based on the parameters and data underlying the published MP-2020 scale but allowing practitioners to vary parameters from those used in the published MP-2020 scale.

We have reviewed this model and believe it is appropriate to our intended use in developing a customized mortality improvement scale for the Programs. Further, we are aware of no material inconsistencies that would limit our ability to use this model for its intended purpose.

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

APPENDIX D – ACTUARIAL ASSUMPTIONS AND METHODS

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 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. Amortization payments are assumed to be made each pay period.

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 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.