

New Hampshire Retirement System

CAFR Schedules, GASB Statement Nos. 67 and 74

Plan Reporting and Accounting Schedules

June 30, 2020





October 30, 2020

Board of Trustees
New Hampshire Retirement System
54 Regional Drive
Concord, New Hampshire 03301-8509

Attention: Mr. George Lagos

Dear Board Members:

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report. This report should not be relied on for any purpose other than the purposes described below.

The purposes of this report are:

- To provide information in connection with Governmental Accounting Standards Board (GASB) Statement No. 67 "Financial Reporting for Pension Plans" as of June 30, 2020.
- To provide information in connection with Governmental Accounting Standards Board (GASB) Statement No. 74 "Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans" as of June 30, 2020.
- To provide supporting schedules for the Comprehensive Annual Financial Report (CAFR) for the System's use in the Actuarial Section, the Statistical Section, Notes to the Financial Statements, and Required Supplementary Information.

The report was based upon information, furnished by New Hampshire Retirement System (NHRS) staff, concerning Retirement System benefits, financial transactions, and active members, terminated members, retirees and beneficiaries as of June 30, 2020. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the data provided by NHRS.

We prepared the following supporting schedules for the Comprehensive Annual Financial Report for the System's use in the Actuarial Section, the Statistical Section, Notes to the Financial Statements and Required Supplementary Information:

- Summary of Actuarial Assumptions and Methods
 - Percent Retiring Within Next Year
 - Probabilities of Becoming Disabled Within Next Year
 - Percent Separating Within Next Year
 - Individual Employee Pay Increases
- Retirees and Beneficiaries Age Distribution
- Active Members by Valuation Division

- Active Members Age and Service Distribution
- Historical Membership Data – Active and Retired
- Summary of Membership Data by Category
- Schedule of Average Benefit Payment Amounts
- Schedule of Retired and Vested Members by Type of Benefit
- Solvency Test
- Schedule of Employer Contributions – Pension and OPEB
- Schedule of Changes in the Employers’ Net Pension Liability, Net OPEB Liability and Related Ratios
- Sensitivity of Net Pension Liability and Net OPEB Liability to the Single Discount Rate Assumption

The schedules include information regarding pension plan funding under the New Hampshire Statute RSA 100-A:16. The basic financial objective of the New Hampshire Retirement System (NHRS) is to establish and receive pension contributions which:

- When expressed in terms of percents of active member payroll will remain approximately level from generation to generation; and
- When combined with present assets and future investment return will be sufficient to meet the financial obligations of NHRS to present and future retirees and beneficiaries.

The financial objective for medical subsidy benefits under RSA 100-A:53, 53-b, 53-c and 53-d is to contribute the lesser of 25 percent of the total employer contribution or the minimum amount necessary to maintain the benefit. RSA 100-A:16 requires biennial actuarial valuations on June 30 of odd years. The Board has adopted an Actuarial Funding Policy which requires annual actuarial valuations. The financial objectives are addressed within the statutory biennial actuarial valuation. The valuation process develops pension contribution rates that are sufficient to fund the plan’s current pension cost (i.e., the costs assigned by the valuation method to the year of service about to be rendered), as well as to fund pension unfunded actuarial accrued liabilities as a level percent of active member payroll over a closed 30-year period beginning with the fiscal year ending June 30, 2010. Legislation was enacted in 2018 which requires the unfunded liability as of June 30, 2017 to be amortized through 2039. Each subsequent change in liability as calculated in odd-numbered years shall be separately amortized over a fixed period of no longer than 20 years.

The actuarial calculations for funding purposes as of June 30, 2020 in this report are based on the assumptions adopted by the Board pursuant to the June 30, 2019 experience study and the census information as of June 30, 2020. The actuarial accrued liability as of June 30, 2020 differs from the total pension (OPEB) liability as of June 30, 2020 under GASB Statement Nos. 67 and 74 because the total pension (OPEB) liability is based on a roll-forward of the June 30, 2019 actuarial valuation under the System’s accounting procedures.



For funding purposes, assets are valued on a market related basis that recognizes each year's difference between actual and assumed investment return over a closed five-year period. For GASB Statement Nos. 67 and 74 purposes, assets are reported and used on a market basis.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The actuarial assumptions are established by the Board after consulting with the actuary under New Hampshire Statute RSA 100-A:14 IX. We believe that the assumptions and methods used in this report are reasonable and appropriate for the purposes for which they have been used. However, other assumptions and methods could also be reasonable and could result in materially different results. In addition, because it is not possible or practical to consider every possible contingency, we may use summary information, estimates or simplifications of calculations to facilitate the modeling of future events. We may also exclude factors or data that are deemed to be immaterial. The actuarial funding method is the Individual Entry Age Actuarial Cost Method, in compliance with NHRS State Statutes. The assumptions and the methods comply with the requirements of Statement Nos. 67 and No. 74 of the Governmental Accounting Standards Board. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution rates as needed. Actuarial methods and assumptions were adopted by the Board pursuant to the June 30, 2019 Experience Study.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

We certify that the information contained in this June 30, 2020 accounting report of the NHRS is accurate and fairly presents the actuarial position of the New Hampshire Retirement System as of June 30, 2020 under the current actuarial assumptions. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes RSA 100-A:16, 100-A:53, 100-A:53-b, 100-A:53-c, and 100-A:53-d.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.



Board of Trustees
October 30, 2020
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The actuaries submitting this report are independent of the plan sponsor, are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



David T. Kausch, FSA, EA, FCA, MAAA, PhD



Heidi G. Barry, ASA, FCA, MAAA



Casey T. Ahlbrandt-Rains, ASA, MAAA

DTK/HGB/CAR:bd



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SECTION A

INTRODUCTION

Executive Summary

Pension

| Covered Group | Employees | Teachers | Police | Fire | Total |
|---|------------------|------------------|------------------|------------------|-------------------|
| I. Number of Participants as of June 30, 2020 | | | | | |
| a. Actives | 24,602 | 17,917 | 4,256 | 1,704 | 48,479 |
| b. Retirees, Disabilities, and Beneficiaries ¹ | 19,434 | 14,198 | 4,227 | 1,753 | 39,612 |
| c. Vested Terminations | 1,402 | 1,100 | 133 | 26 | 2,661 |
| d. Non-Vested Inactive Terminations | 9,282 | 3,662 | 753 | 63 | 13,760 |
| e. Total | 54,720 | 36,877 | 9,369 | 3,546 | 104,512 |
| f. Total Covered Annual Payroll | \$ 1,274,596,504 | \$ 1,160,883,793 | \$ 322,994,109 | \$ 136,233,873 | \$ 2,894,708,279 |
| II. GASB No. 67 Information | | | | | |
| a. Total Pension Liability (TPL) ² | | | | | \$ 15,493,515,525 |
| b. Plan Fiduciary Net Position (PFNP) | | | | | 9,097,364,441 |
| c. Net Pension Liability (NPL): a. – b. | | | | | 6,396,151,084 |
| d. PFNP as a Percentage of TPL: b. / a. | | | | | 58.7% |
| III. Statutory Funding Information | | | | | |
| a. Actuarial Present Value of Projected Benefits | \$ 5,985,644,723 | \$ 6,979,997,556 | \$ 3,462,938,379 | \$ 1,591,739,243 | \$ 18,020,319,901 |
| b. Actuarial Present Value of Future Normal Costs | 822,208,025 | 974,377,984 | 499,164,696 | 236,553,913 | 2,532,304,618 |
| c. Actuarial Accrued Liability (AAL): a. – b. | 5,163,436,698 | 6,005,619,572 | 2,963,773,683 | 1,355,185,330 | 15,488,015,283 |
| d. Actuarial Value of Assets | 3,173,612,237 | 3,450,797,858 | 1,900,198,790 | 923,229,436 | 9,447,838,321 |
| e. Unfunded Actuarial Accrued Liability (UAAL): c. – d. | \$ 1,989,824,461 | \$ 2,554,821,714 | \$ 1,063,574,893 | \$ 431,955,894 | \$ 6,040,176,962 |
| f. Funded Status: d. / c. | 61.5% | 57.5% | 64.1% | 68.1% | 61.0% |
| IV. Additional Information on Payroll | | | | | |
| State | \$ 580,597,922 | \$ - | \$ 90,112,441 | \$ 4,395,125 | \$ 675,105,488 |
| Political Subdivisions | 693,998,582 | 1,160,883,793 | 232,881,668 | 131,838,748 | 2,219,602,791 |
| Total | \$ 1,274,596,504 | \$ 1,160,883,793 | \$ 322,994,109 | \$ 136,233,873 | \$ 2,894,708,279 |

¹ Number counts for inactive plan members or beneficiaries currently receiving benefits include 2,463 additional data records which have resulted from additional annuities, survivor benefits, or members having benefits in more than one valuation group.

² GASB No. 67 TPL is based on a roll-forward of the June 30, 2019 valuation. Statutory Funding information is based on data/information provided as of June 30, 2020.



Executive Summary Medical Subsidy

| Covered Group | State Employees | Political Subdivision Employees | Teachers | Police and Fire | Grand Total |
|---|--------------------|---------------------------------------|------------------|-----------------------|------------------|
| I. Number of Participants Covered by Post Retirement Medical Subsidy as of June 30, 2020 | | | | | |
| a. Actives | - | - | - | 2,031 | 2,031 |
| b. Retirees, Disabilities, and Beneficiaries | 1,468 | 1,084 | 4,053 | 2,904 | 9,509 |
| c. Vested Terminations | - | - | - | - | - |
| d. Total | 1,468 | 1,084 | 4,053 | 4,935 | 11,540 |
| e. Total NHRS Covered Annual Payroll | \$ 580,597,922 | \$ 693,998,582 | \$ 1,160,883,793 | \$ 459,227,982 | \$ 2,894,708,279 |
| II. GASB No. 74 Information | | | | | |
| a. Total OPEB Liability (TOL) | | | | | \$ 474,420,087 |
| b. Plan Fiduciary Net Position (PFNP) | | | | | 36,711,092 |
| c. Net OPEB Liability (NOL): a. – b. | | | | | 437,708,995 |
| d. PFNP as a Percentage of TOL: b. / a. | | | | | 7.74% |
| III. Statutory Funding Information | | | | | |
| a. Actuarial Present Value of Projected Benefits | \$ 58,411,066 | \$ 50,720,775 | \$ 227,547,617 | \$ 329,041,188 | \$ 665,720,646 |
| b. Actuarial Present Value of Future Normal Costs | - | - | - | 9,073,011 | 9,073,011 |
| c. Actuarial Accrued Liability (AAL): a. – b. | 58,411,066 | 50,720,775 | 227,547,617 | 319,968,177 | 656,647,635 |
| d. Valuation Assets | 2,136,981 | 12,473,883 | 6,487,132 | 17,027,383 | 38,125,379 |
| e. Unfunded Actuarial Accrued Liability (UAAL): c. – d. | 56,274,085 | 38,246,892 | 221,060,485 | 302,940,794 | 618,522,256 |
| f. Funded Status: d. / c. | 3.7% | 24.6% | 2.9% | 5.3% | 5.8% |

NOTE: GASB No. 74 TOL is based on a roll-forward of the June 30, 2019 valuation. Statutory Funding information is based on data/information provided as of June 30, 2020.



Discussion and Comments

Comment 1:

In total, plan experience between June 30, 2019 and June 30, 2020 was unfavorable for pension on the basis of statutory funding and GASB No. 67 and favorable for the medical subsidy on the basis of statutory funding.

Total covered payroll increased by 2.5% versus the assumed increase of 2.75% (2.25% for Teachers). Between the 2019 and 2020 valuation, the pension funded ratio increased by 0.2 percentage points from 60.8% to 61.0%.

The impact on GASB No. 67 was a decrease in the ratio of plan fiduciary net position to total pension liability from 65.6% to 58.7%. See pages 7 and 8 for additional plan fiduciary net position information and page 9 for the impact on the net pension liability.

The dollar weighted rate of return for the year ending June 30, 2020 was 1.12% on the market value of assets. (Note: This dollar weighted measure may differ from investment manager calculations and should not be used as a measure of investment performance). Please see pages 36 and 37 for additional asset information for statutory funding purposes.

On the basis of statutory funding, the rate of return was 5.54% on the actuarial value of assets, resulting in a recognized asset loss of approximately \$109 million (pension and medical subsidy combined). The return on the actuarial value of assets exceeds the return on the market value of assets because some of this year's market loss is deferred and prior years' returns are recognized this year.

The Market Value of Assets of the System of \$9.13 billion is less than the Actuarial Value of Assets of \$9.49 billion by \$352 million as of the valuation date (see page 36). This difference will be gradually recognized over the next four years in the absence of future gains/losses.

Overall, the System had a loss of \$103 million comprised of an asset loss of \$109 million and a liability gain of \$6 million. See page 40 for additional information on gains and losses.

Discussion and Comments (Concluded)

Comment 2:

In early 2020, the world was faced with the global COVID-19 pandemic which continues to affect lives and the economy. This valuation reflects the actual experience of the system through June 30, 2020 including the impact of COVID through that date. The census data we received does not contain specific information about COVID-19, but we observed general patterns of slightly higher mortality rates and lower retirement rates than expected this year. The pandemic likely also affected this year's investment return. It is not clear how much of this experience is attributable to COVID-19. For example, upon further investigation, the rates of retirement appeared to start declining in the fall of 2019 well before the pandemic. Total payroll was very close to assumed.

The demographic and economic impacts of COVID-19 may persist for a period of time or may be mitigated by public health initiatives and economic stimulus or recovery. Given the uncertain nature of the future impact of COVID-19, at this time we recommend reflecting actual experience as it emerges through the regular annual valuation process.

Comment 3:

NHRS is supported by member contributions, employer contributions, and net earnings on the investments of the fund. The member contribution rate is set by statute at 7.00% of member compensation for Group I Members (Employees and Teachers), 11.55% of member compensation for Police Members and 11.80% of member compensation for Fire Members. The employer contributions are determined in accordance with statute by an actuarial valuation. Legislation was enacted in 2007 which requires the use of the entry-age actuarial cost method and a closed 30-year amortization of unfunded actuarial accrued liability in the determination of the employer contributions. Legislation was enacted in 2018 which requires the unfunded liability as of June 30, 2017 to be amortized through 2039. Each subsequent change in liability as calculated in odd-numbered years shall be separately amortized over a fixed period of no longer than 20 years.

The closed amortization period means that the initial unfunded actuarial accrued liability is expected to be fully paid off by June 30, 2039 and the remainder by June 30, 2041 if all assumptions are met.

Results of the Valuation

This report provides information in connection with Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 74, and it provides summaries of the member data, financial data, plan provisions, and actuarial assumptions and methods.

Calculations required for compliance with the GASB Statement Nos. 68 and 75 will be issued in separate reports.

Valuations for certifying contribution rates are prepared biennially, as of June 30 on the odd numbered years (2021, 2023, etc.). The June 30, 2019 actuarial valuation was the basis for the Fiscal Year 2022 and Fiscal Year 2023 employer contribution rates. The June 30, 2021 actuarial valuation will establish the Fiscal Year 2024 and Fiscal Year 2025 employer contribution rates.

SECTION B

FINANCIAL SECTION

Measurement of the Net Pension Liability

The net pension liability is measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2019 rolled forward to the measurement date of June 30, 2020. The roll forward procedure increases the June 30, 2019 actuarial accrued liability with normal cost and interest and decreases it with actual benefit payments and administrative expenses paid.

A single discount rate of 6.75% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 6.75%. The projection of cash flows, shown on pages 15-20, used to determine this single discount rate assumed that employer contributions will be made under the current statute RSA 100-A:16 and that plan member contributions will be made under RSA 100-A:16. Based on these assumptions, the pension plan's fiduciary net position was projected to be sufficient to make all projected future benefit payments due to current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Below is a table providing the sensitivity of the net pension liability to changes in the discount rate. In particular, the table presents the plan's net pension liability calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current single discount rate:

Sensitivity of Net OPEB Liability to the Single Discount Rate Assumption

| Measurement Date | Net Pension Liability | | | Single Discount Rate Assumption |
|---------------------|-----------------------|---------------------------------|-----------------|------------------------------------|
| | 1% Decrease | Current Single Discount Rate | 1% Increase | |
| June 30 | | | | |
| 2013 | \$5,517,542,052 | \$4,303,784,472 | \$3,283,507,050 | 7.75% |
| 2014 | \$4,944,083,125 | \$3,753,585,752 | \$2,749,222,899 | 7.75% |
| 2015 | \$5,214,835,524 | \$3,961,527,090 | \$2,893,074,359 | 7.75% |
| 2016 | \$6,832,747,755 | \$5,317,595,337 | \$4,061,016,509 | 7.25% |
| 2017 | \$6,479,208,704 | \$4,917,992,831 | \$3,638,638,217 | 7.25% |
| 2018 | \$6,406,666,255 | \$4,815,202,417 | \$3,481,507,071 | 7.25% |
| 2019 | \$6,443,003,824 | \$4,811,654,670 | \$3,463,357,380 | 7.25% |
| 2020 | \$8,280,412,543 | \$6,396,151,084 | \$4,856,459,957 | 6.75% |

Statement of Fiduciary Net Position as of June 30, 2020 Pension

| | 2020* |
|---|-------------------------|
| Assets | |
| Cash and Deposits | \$ 230,864,788 |
| Receivables | |
| Accounts Receivable - Sale of Investments | \$ 10,911,351 |
| Interest and Dividend Receivables | 12,931,049 |
| Contributions | 66,082,536 |
| Accounts Receivable - Other | 4,498,075 |
| Total Receivables | \$ 94,423,011 |
| Investments | |
| Fixed Income | \$ 2,059,542,218 |
| Domestic Equities | 2,770,189,927 |
| International Equities | 1,282,856,464 |
| Real Estate | 963,938,021 |
| Other | 1,721,253,865 |
| Total Investments | \$ 8,797,780,495 |
| Total Assets | \$ 9,123,068,294 |
| Liabilities | |
| Payables | |
| Accounts Payable - Purchase of Investments | \$ 16,871,276 |
| Accrued Expenses | 8,832,577 |
| Total Liabilities | \$ 25,703,853 |
| Net Position Restricted for Pensions | \$ 9,097,364,441 |

* Reported amounts provided by the System as of June 30, 2020 do not include the 401(h) medical subsidy account.



Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2020

Pension

| | Total |
|---|-------------------------|
| Additions | |
| Contributions | |
| Employer | \$ 445,021,693 |
| Member | 229,725,742 |
| Total Contributions | \$ 674,747,435 |
| Investment Income | |
| Net Appreciation in Fair Value of Investments | \$ (34,705,327) |
| Interest and Dividends | 163,476,536 |
| Less Investment Expense | (27,732,020) |
| Net Investment Income | \$ 101,039,189 |
| Total Additions | \$ 775,786,624 |
| Deductions | |
| Benefit Payments and Refunds | \$ 840,020,269 |
| Pension Plan Administrative Expense | 8,281,785 |
| Other custodial, professional and non-investment expenses | 892,659 |
| Total Deductions | \$ 849,194,713 |
| Net Increase in Net Position | \$ (73,408,089) |
| Net Position Restricted for Pensions | |
| Beginning of Year | \$ 9,170,772,530 |
| End of Year | \$ 9,097,364,441 |

Schedules of Required Supplementary Information

Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Ultimately 10 Fiscal Years Will Be Displayed

| Fiscal Year Ending | June 30, 2020 | June 30, 2019 | June 30, 2018 | June 30, 2017 | June 30, 2016 | June 30, 2015 | June 30, 2014 | June 30, 2013 |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Total Pension Liability | | | | | | | | |
| Service Cost | \$ 310,678,283 | \$ 275,380,260 | \$ 269,751,007 | \$ 262,626,490 | \$ 266,379,101 | \$ 243,964,955 | \$ 245,827,165 | \$ 255,178,452 |
| Interest on the Total Pension Liability | 994,537,325 | 970,599,109 | 936,988,169 | 906,200,904 | 875,246,755 | 847,646,050 | 815,213,536 | 789,791,575 |
| Benefit Changes | 69,354,791 | - | - | - | - | - | - | - |
| Difference between expected and actual experience of the Total Pension Liability | 198,104,071 | (111,250,355) | 39,112,535 | (19,046,986) | 18,403,928 | (106,715,500) | - | (101,140,741) |
| Assumption Changes | 778,434,124 | - | - | - | 815,022,527 | - | - | - |
| Benefit Payments | (816,708,118) | (780,906,714) | (741,752,669) | (706,303,846) | (670,359,868) | (631,310,997) | (599,475,606) | (573,470,316) |
| Refunds | (23,312,151) | (23,464,493) | (24,010,459) | (23,408,460) | (24,233,277) | (26,344,739) | (26,119,759) | (23,190,984) |
| Net Change in Total Pension Liability | \$ 1,511,088,325 | \$330,357,807 | \$480,088,583 | \$ 420,068,102 | \$ 1,280,459,166 | \$ 327,239,769 | \$ 435,445,336 | \$ 347,167,986 |
| Total Pension Liability - Beginning | \$ 13,982,427,200 | \$13,652,069,393 | \$13,171,980,810 | \$ 12,751,912,708 | \$ 11,471,453,542 | \$ 11,144,213,773 | \$ 10,708,768,437 | \$ 10,361,600,451 |
| Total Pension Liability - Ending (a) | \$ 15,493,515,525 | \$ 13,982,427,200 | \$ 13,652,069,393 | \$ 13,171,980,810 | \$ 12,751,912,708 | \$ 11,471,453,542 | \$ 11,144,213,773 | \$ 10,708,768,437 |
| Plan Fiduciary Net Position | | | | | | | | |
| Contributions - Employer | \$ 445,021,693 | \$ 434,407,178 | \$ 422,659,079 | \$ 366,653,014 | \$ 357,481,725 | \$ 332,294,226 | \$ 328,444,256 | \$ 249,835,597 |
| Contributions - Member | 229,725,742 | 223,995,134 | 217,571,830 | 213,060,827 | 207,949,398 | 204,063,168 | 199,032,996 | 196,488,619 |
| Pension Plan Net Investment Income | 101,039,189 | 488,269,838 | 717,090,294 | 978,594,418 | 61,877,808 | 249,804,954 | 1,092,585,321 | 813,797,720 |
| Benefit Payments | (816,708,118) | (780,906,714) | (741,752,669) | (706,303,846) | (670,359,868) | (631,310,997) | (599,475,606) | (573,470,316) |
| Refunds | (23,312,151) | (23,464,493) | (24,010,459) | (23,408,460) | (24,233,277) | (26,344,739) | (26,119,759) | (23,190,984) |
| Pension Plan Administrative Expense | (8,281,785) | (7,436,447) | (7,767,254) | (7,670,827) | (7,061,317) | (7,581,315) | (7,376,270) | (6,998,526) |
| Other custodial, professional and non-investment expenses, and contributions other than for contribution effort | (892,659) | (958,942) | (911,824) | (1,254,518) | (1,263,550) | (1,626,866) | (1,446,882) | (1,804,939) |
| Net Change in Plan Fiduciary Net Position | \$ (73,408,089) | \$333,905,554 | \$582,878,997 | \$ 819,670,608 | \$ (75,609,081) | \$ 119,298,431 | \$ 985,644,056 | \$ 654,657,171 |
| Plan Fiduciary Net Position - Beginning | \$ 9,170,772,530 | \$8,836,866,976 | \$8,253,987,979 | \$ 7,434,317,371 | \$ 7,509,926,452 | \$ 7,390,628,021 | \$ 6,404,983,965 | \$ 5,750,326,794 |
| Plan Fiduciary Net Position - Ending (b) | \$ 9,097,364,441 | \$ 9,170,772,530 | \$ 8,836,866,976 | \$ 8,253,987,979 | \$ 7,434,317,371 | \$ 7,509,926,452 | \$ 7,390,628,021 | \$ 6,404,983,965 |
| Net Pension Liability - Ending (a) - (b) | \$ 6,396,151,084 | \$4,811,654,670 | \$4,815,202,417 | \$ 4,917,992,831 | \$ 5,317,595,337 | \$ 3,961,527,090 | \$ 3,753,585,752 | \$ 4,303,784,472 |
| Plan Fiduciary Net Position as a Percentage of Total Pension Liability | 58.72 % | 65.59 % | 64.73 % | 62.66 % | 58.30 % | 65.47 % | 66.32 % | 59.81 % |
| Covered Employee Payroll* | \$2,894,708,279 | \$ 2,825,006,022 | \$ 2,752,235,069 | \$2,667,611,532 | \$2,601,403,606 | \$2,575,031,210 | \$ 2,507,898,809 | \$ 2,501,741,708 |
| Net Pension Liability as a Percentage of Covered Employee Payroll | 220.96 % | 170.32 % | 174.96 % | 184.36 % | 204.41 % | 153.84 % | 149.67 % | 172.03 % |

Notes to Schedule:

* Based on the June 30 census data for the applicable fiscal year. Covered employee payroll for employer's disclosure may differ.



Schedules of Required Supplementary Information

Schedule of the Employers' Net Pension Liability

Ultimately 10 Fiscal Years Will Be Displayed

| FY Ending June 30, | Total Pension Liability | Plan Net Position | Net Pension Liability | Plan Net Position as a % of Total Pension Liability | Covered Payroll* | Net Pension Liability as a % of Covered Payroll |
|-----------------------|-------------------------------|----------------------|--------------------------|---|---------------------|---|
| 2013 | \$ 10,708,768,437 | \$ 6,404,983,965 | \$ 4,303,784,472 | 59.81% | \$ 2,501,741,708 | 172.03% |
| 2014 | 11,144,213,773 | 7,390,628,021 | 3,753,585,752 | 66.32% | 2,507,898,809 | 149.67% |
| 2015 | 11,471,453,542 | 7,509,926,452 | 3,961,527,090 | 65.47% | 2,575,031,210 | 153.84% |
| 2016 | 12,751,912,708 | 7,434,317,371 | 5,317,595,337 | 58.30% | 2,601,403,606 | 204.41% |
| 2017 | 13,171,980,810 | 8,253,987,979 | 4,917,992,831 | 62.66% | 2,667,611,532 | 184.36% |
| 2018 | 13,652,069,393 | 8,836,866,976 | 4,815,202,417 | 64.73% | 2,752,235,069 | 174.96% |
| 2019 | 13,982,427,200 | 9,170,772,530 | 4,811,654,670 | 65.59% | 2,825,006,022 | 170.32% |
| 2020 | 15,493,515,525 | 9,097,364,441 | 6,396,151,084 | 58.72% | 2,894,708,279 | 220.96% |

* Based on the June 30 census data. Covered-employee payroll for employer's disclosure may differ.



Schedule of Employer Pension Contributions Ultimately 10 Fiscal Years Will Be Displayed

| FY Ending June 30, | Actuarially Determined Contribution* | Actual Contribution* | Contribution Deficiency (Excess) | Covered Payroll** | Actual Contribution as a % of Covered Payroll |
|-----------------------|--|-------------------------|--|----------------------|---|
| 2013 | \$ 249,835,597 | \$ 249,835,597 | \$ - | \$ 2,501,741,708 | 9.99% |
| 2014 | 328,444,256 | 328,444,256 | - | 2,507,898,809 | 13.10% |
| 2015 | 332,294,226 | 332,294,226 | - | 2,575,031,210 | 12.90% |
| 2016 | 357,481,725 | 357,481,725 | - | 2,601,403,606 | 13.74% |
| 2017 | 366,653,014 | 366,653,014 | - | 2,667,611,532 | 13.74% |
| 2018 | 422,659,079 | 422,659,079 | - | 2,752,235,069 | 15.36% |
| 2019 | 434,407,178 | 434,407,178 | - | 2,825,006,022 | 15.38% |
| 2020 | 445,021,693 | 445,021,693 | - | 2,894,708,279 | 15.37% |

* We do not compute a dollar amount for the Actuarially Determined Contribution. It is our understanding that employers contribute the Actuarially Determined Contribution. The amount shown in this column, therefore, matches the actual contributions. Contributions other than the Actuarial Determined Contributions are accounted for separately.

** Based on the June 30 census data. Covered employee payroll for employer's disclosure may differ.



Notes to Schedule of Pension Contributions

| | |
|---------------------------------|---|
| Valuation Date: | Actuarially determined contribution rates for the 2020-2021 biennium were determined based on the June 30, 2017 actuarial valuation. Actuarially determined contribution rates for the 2022-2023 biennium were determined based on the June 30, 2019 actuarial valuation. Future employer contribution rates for the purposes of the projection in this report are based on the closed statutory amortization period. |
| Notes | <p>The roll-forward of total pension liability from June 30, 2019 to June 30, 2020 reflects expected service cost and interest reduced by actual benefit payments.</p> <p>The Total Pension Liability as of June 30, 2019 has been adjusted to reflect changes in actuarial methods based on the actuarial audit. The impact has been estimated based on the June 30, 2019 actuarial valuation and included in the difference between expected and actual experience of the Total Pension Liability on page 9. House Bill No. 616 grants a one-time adhoc COLA to certain retired members. The COLA will take effect on the retired member's first anniversary date of retirement occurring after July 1, 2020.</p> |
| Methods and Assumptions: | |
| Actuarial Cost Method | Entry-Age Normal |
| Amortization Method | Level Percentage-of-Payroll, Closed |
| Remaining Amortization Period | 20 years beginning July 1, 2019 (30 years beginning July 1, 2009) |
| Asset Valuation Method | 5-year smoothed market for funding purposes; 20% corridor |
| Price Inflation | 2.5% per year |
| Wage Inflation | 3.25% per year (3.00% for Teachers) in the 2017 valuation |
| Salary Increases | 5.6% average, including inflation |
| Municipal Bond Rate | 2.45% per year |
| Investment Rate of Return | 7.25% per year, net of investment expenses, including inflation |
| Retirement Age | Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2015 valuation pursuant to an experience study of the period 2010 - 2015. |
| Mortality | RP-2014 Healthy Annuitant and Employee generational mortality tables for males and females with credibility adjustments, adjusted for fully generational mortality improvements using Scale MP-2015, based on the last experience study. |

NOTE: A full list of actuarial assumptions and the summary of benefit provisions can be found starting on page 55. Actuarial assumptions for contributions made in the year ending June 30, 2020 can be found in the June 30, 2017 actuarial valuation report.



Summary of Pension Population Statistics as of June 30, 2019

For purposes of GASB No. 67 disclosures, the System has adopted a roll-forward methodology for accounting purposes. This means that the June 30, 2020 Total Pension Liability is based on a roll-forward of the June 30, 2019 valuation. A brief summary of the June 30, 2019 census data is shown below.

| | |
|--|---------------|
| Inactive Plan Members or Beneficiaries Currently Receiving Benefits* | 38,352 |
| Inactive Plan Members Entitled to But Not Yet Receiving Benefits | 2,552 |
| Active Plan Members | 48,288 |
| Non-Vested Inactive Members | <u>12,530</u> |
| Total Plan Members | 101,722 |

** Number counts for inactive plan members or beneficiaries receiving benefits as of June 30, 2019 include 2,371 additional data records which have resulted from additional annuities, survivor benefits, or members having benefits in more than one valuation group.*

Additional information regarding the covered population as of June 30, 2019 may be found in the CAFR Schedules, GASB Statement Nos. 67 and 74 Plan Reporting and Accounting Schedules report issued October 31, 2019.

Calculation of the Single Discount Rate for Pension

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The *Single Discount Rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the plan fiduciary net position is not projected to be sufficient to pay benefits).

The determination of the discount rate is done at the plan level. Our understanding is that all pension assets are available to pay the pension benefits of the four member classifications so there is one plan for the discount rate calculation. For the purpose of this valuation, the expected rate of return on pension plan investments is 6.75%; the municipal bond rate is 2.45% (based on the 20-Year Municipal GO AA Index for June 2020); and the resulting single discount rate is 6.75%.

The tables in this section provide background for the development of the single discount rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Service Cost contributions for future hires after June 30, 2020 are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years after June 30, 2020.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Single Discount Rate Development

Projection of Pension Contributions Beginning July 1, 2020 (Years 1-50 only)

| Year | Payroll for Current Employees | Contributions from Current Employees | Employer Service Cost and Expense Contributions | UAL Contributions | Total Contributions |
|------|-------------------------------|--------------------------------------|---|-------------------|---------------------|
| 0 | \$ 2,894,708,279 | | | | |
| 1 | 2,863,201,766 | \$ 204,157,324 | \$ 96,275,625 | \$ 379,949,432 | \$ 680,382,381 |
| 2 | 2,722,830,739 | 194,428,281 | 89,630,398 | 503,912,757 | 787,971,435 |
| 3 | 2,595,674,360 | 185,593,134 | 83,500,772 | 516,678,720 | 785,772,626 |
| 4 | 2,477,893,492 | 177,357,241 | 77,843,173 | 529,771,185 | 784,971,599 |
| 5 | 2,364,614,746 | 169,394,496 | 72,461,526 | 543,198,579 | 785,054,601 |
| 6 | 2,253,639,767 | 161,598,018 | 67,338,977 | 556,969,546 | 785,906,542 |
| 7 | 2,145,507,913 | 153,992,425 | 62,479,517 | 571,092,958 | 787,564,900 |
| 8 | 2,039,686,293 | 146,534,296 | 57,836,653 | 585,577,915 | 789,948,865 |
| 9 | 1,935,983,726 | 139,229,273 | 53,431,131 | 600,433,756 | 793,094,161 |
| 10 | 1,832,542,955 | 131,934,939 | 49,155,305 | 615,670,063 | 796,760,308 |
| 11 | 1,731,142,945 | 124,747,998 | 45,073,484 | 631,296,667 | 801,118,150 |
| 12 | 1,633,418,062 | 117,802,441 | 41,261,903 | 647,323,656 | 806,387,999 |
| 13 | 1,538,642,764 | 111,058,751 | 37,688,755 | 663,761,379 | 812,508,884 |
| 14 | 1,444,785,865 | 104,379,200 | 34,273,006 | 680,620,457 | 819,272,663 |
| 15 | 1,353,032,685 | 97,835,363 | 31,053,635 | 697,911,786 | 826,800,783 |
| 16 | 1,263,853,436 | 91,484,867 | 28,058,875 | 715,646,547 | 835,190,290 |
| 17 | 1,177,474,697 | 85,340,469 | 25,286,484 | 733,836,214 | 844,463,168 |
| 18 | 1,094,203,723 | 79,373,979 | 22,730,129 | 752,492,558 | 854,596,667 |
| 19 | 1,013,431,506 | 73,543,167 | 20,333,742 | 771,627,658 | 865,504,567 |
| 20 | 933,951,567 | 67,759,263 | 18,060,062 | 124,053,368 | 209,872,693 |
| 21 | 856,047,363 | 62,024,591 | 15,902,410 | 127,234,025 | 205,161,026 |
| 22 | 779,507,851 | 56,295,106 | 13,827,990 | - | 70,123,096 |
| 23 | 704,129,281 | 50,565,464 | 11,829,742 | - | 62,395,206 |
| 24 | 630,012,054 | 44,885,916 | 9,928,550 | - | 54,814,466 |
| 25 | 558,907,985 | 39,442,624 | 8,188,319 | - | 47,630,943 |
| 26 | 492,100,751 | 34,389,649 | 6,664,173 | - | 41,053,822 |
| 27 | 431,091,124 | 29,805,254 | 5,414,226 | - | 35,219,480 |
| 28 | 374,597,538 | 25,458,591 | 4,550,405 | - | 30,008,997 |
| 29 | 322,545,014 | 21,595,754 | 3,785,739 | - | 25,381,493 |
| 30 | 275,898,470 | 18,224,126 | 3,145,314 | - | 21,369,439 |
| 31 | 233,532,344 | 15,232,193 | 2,599,305 | - | 17,831,498 |
| 32 | 195,213,104 | 12,579,175 | 2,135,343 | - | 14,714,518 |
| 33 | 160,157,770 | 10,207,294 | 1,728,555 | - | 11,935,849 |
| 34 | 128,641,810 | 8,110,521 | 1,379,354 | - | 9,489,876 |
| 35 | 100,656,391 | 6,273,721 | 1,085,379 | - | 7,359,100 |
| 36 | 76,446,576 | 4,713,069 | 831,530 | - | 5,544,599 |
| 37 | 56,485,487 | 3,439,415 | 629,157 | - | 4,068,572 |
| 38 | 40,591,375 | 2,433,412 | 471,598 | - | 2,905,011 |
| 39 | 28,046,014 | 1,649,472 | 346,793 | - | 1,996,265 |
| 40 | 18,674,672 | 1,071,488 | 253,248 | - | 1,324,735 |
| 41 | 12,054,525 | 666,485 | 186,124 | - | 852,610 |
| 42 | 7,613,237 | 397,152 | 141,079 | - | 538,230 |
| 43 | 4,753,442 | 228,375 | 106,807 | - | 335,182 |
| 44 | 2,820,169 | 130,495 | 68,511 | - | 199,006 |
| 45 | 1,552,066 | 69,471 | 39,726 | - | 109,197 |
| 46 | 787,030 | 34,673 | 20,224 | - | 54,897 |
| 47 | 379,365 | 16,578 | 9,328 | - | 25,906 |
| 48 | 182,757 | 7,954 | 4,228 | - | 12,182 |
| 49 | 79,614 | 3,490 | 1,755 | - | 5,245 |
| 50 | 22,092 | 923 | 563 | - | 1,486 |

* Employer contributions as shown may differ substantially from those determined by a funding valuation.



Single Discount Rate Development

Projection of Pension Plan Fiduciary Net Position

Beginning July 1, 2020

(Years 1-50)

| Year | Projected Beginning Plan Net Position | Projected Total Contributions | Projected Benefit Payments | Projected Administrative Expenses | Projected Investment Earnings at 6.75% | Projected Ending Plan Net Position |
|------|---------------------------------------|-------------------------------|----------------------------|-----------------------------------|--|------------------------------------|
| | (a) | (b) | (c) | (d) | (e) | (f)=(a)+(b)-(c)-(d)+(e) |
| 1 | \$ 9,097,364,441 | \$ 680,382,381 | \$ 911,031,716 | \$ 10,021,206 | \$ 606,082,099 | \$ 9,462,775,999 |
| 2 | 9,462,775,999 | 787,971,435 | 952,136,819 | 9,529,908 | 632,970,885 | 9,922,051,592 |
| 3 | 9,922,051,592 | 785,772,626 | 991,824,634 | 9,084,860 | 662,596,172 | 10,369,510,895 |
| 4 | 10,369,510,895 | 784,971,599 | 1,030,338,173 | 8,672,627 | 691,508,159 | 10,806,979,854 |
| 5 | 10,806,979,854 | 785,054,601 | 1,068,569,042 | 8,276,152 | 719,784,009 | 11,234,973,270 |
| 6 | 11,234,973,270 | 785,906,542 | 1,105,727,455 | 7,887,739 | 747,481,124 | 11,654,745,742 |
| 7 | 11,654,745,742 | 787,564,900 | 1,140,743,091 | 7,509,278 | 774,720,905 | 12,068,779,178 |
| 8 | 12,068,779,178 | 789,948,865 | 1,173,199,212 | 7,138,902 | 801,682,095 | 12,480,072,023 |
| 9 | 12,480,072,023 | 793,094,161 | 1,204,748,349 | 6,775,943 | 828,513,435 | 12,890,155,327 |
| 10 | 12,890,155,327 | 796,760,308 | 1,238,204,394 | 6,413,900 | 855,217,085 | 13,297,514,425 |
| 11 | 13,297,514,425 | 801,118,150 | 1,270,573,403 | 6,059,000 | 881,795,666 | 13,703,795,838 |
| 12 | 13,703,795,838 | 806,387,999 | 1,300,201,961 | 5,716,963 | 908,422,334 | 14,112,687,247 |
| 13 | 14,112,687,247 | 812,508,884 | 1,327,361,770 | 5,385,250 | 935,335,047 | 14,527,784,159 |
| 14 | 14,527,784,159 | 819,272,663 | 1,352,200,109 | 5,056,751 | 962,764,939 | 14,952,564,900 |
| 15 | 14,952,564,900 | 826,800,783 | 1,374,580,506 | 4,735,614 | 990,955,221 | 15,391,004,784 |
| 16 | 15,391,004,784 | 835,190,290 | 1,394,273,685 | 4,423,487 | 1,020,185,005 | 15,847,682,907 |
| 17 | 15,847,682,907 | 844,463,168 | 1,411,165,844 | 4,121,161 | 1,050,767,864 | 16,327,626,934 |
| 18 | 16,327,626,934 | 854,596,667 | 1,426,395,396 | 3,829,713 | 1,083,004,578 | 16,835,003,069 |
| 19 | 16,835,003,069 | 865,504,567 | 1,439,075,373 | 3,547,010 | 1,117,203,021 | 17,375,088,274 |
| 20 | 17,375,088,274 | 209,872,693 | 1,449,285,553 | 3,268,830 | 1,131,562,774 | 17,263,969,358 |
| 21 | 17,263,969,358 | 205,161,026 | 1,457,270,958 | 2,996,166 | 1,123,649,770 | 17,132,513,030 |
| 22 | 17,132,513,030 | 70,123,096 | 1,462,890,492 | 2,728,277 | 1,110,115,686 | 16,847,133,043 |
| 23 | 16,847,133,043 | 62,395,206 | 1,466,298,137 | 2,464,452 | 1,090,491,608 | 16,531,257,268 |
| 24 | 16,531,257,268 | 54,814,466 | 1,467,346,702 | 2,205,042 | 1,068,892,122 | 16,185,412,110 |
| 25 | 16,185,412,110 | 47,630,943 | 1,465,216,178 | 1,956,178 | 1,045,388,081 | 15,811,258,778 |
| 26 | 15,811,258,778 | 41,053,822 | 1,459,037,830 | 1,722,353 | 1,020,127,255 | 15,411,679,673 |
| 27 | 15,411,679,673 | 35,219,480 | 1,448,111,171 | 1,508,819 | 993,331,814 | 14,990,610,977 |
| 28 | 14,990,610,977 | 30,008,997 | 1,432,706,514 | 1,311,091 | 965,254,677 | 14,551,857,045 |
| 29 | 14,551,857,045 | 25,381,493 | 1,413,212,417 | 1,128,908 | 936,138,390 | 14,099,035,603 |
| 30 | 14,099,035,603 | 21,369,439 | 1,390,284,595 | 965,645 | 906,206,346 | 13,635,361,147 |
| 31 | 13,635,361,147 | 17,831,498 | 1,365,344,388 | 817,363 | 875,623,775 | 13,162,654,669 |
| 32 | 13,162,654,669 | 14,714,518 | 1,339,388,096 | 683,246 | 844,478,780 | 12,681,776,626 |
| 33 | 12,681,776,626 | 11,935,849 | 1,313,011,326 | 560,552 | 812,807,017 | 12,192,947,614 |
| 34 | 12,192,947,614 | 9,489,876 | 1,286,212,169 | 450,246 | 780,623,220 | 11,696,398,295 |
| 35 | 11,696,398,295 | 7,359,100 | 1,258,987,366 | 352,297 | 747,942,487 | 11,192,360,219 |
| 36 | 11,192,360,219 | 5,544,599 | 1,230,235,916 | 267,563 | 714,817,008 | 10,682,218,348 |
| 37 | 10,682,218,348 | 4,068,572 | 1,199,164,176 | 197,699 | 681,367,297 | 10,168,292,341 |
| 38 | 10,168,292,341 | 2,905,011 | 1,165,958,911 | 142,070 | 647,742,888 | 9,652,839,259 |
| 39 | 9,652,839,259 | 1,996,265 | 1,130,576,447 | 98,161 | 614,095,752 | 9,138,256,668 |
| 40 | 9,138,256,668 | 1,324,735 | 1,092,622,685 | 65,361 | 580,600,246 | 8,627,493,604 |
| 41 | 8,627,493,604 | 852,610 | 1,052,183,572 | 42,191 | 547,451,369 | 8,123,571,820 |
| 42 | 8,123,571,820 | 538,230 | 1,009,673,421 | 26,646 | 514,838,019 | 7,629,248,002 |
| 43 | 7,629,248,002 | 335,182 | 965,817,342 | 16,637 | 482,920,727 | 7,146,669,933 |
| 44 | 7,146,669,933 | 199,006 | 921,456,385 | 9,871 | 451,815,146 | 6,677,217,829 |
| 45 | 6,677,217,829 | 109,197 | 877,038,974 | 5,432 | 421,598,905 | 6,221,881,525 |
| 46 | 6,221,881,525 | 54,897 | 832,624,393 | 2,755 | 392,336,507 | 5,781,645,781 |
| 47 | 5,781,645,781 | 25,906 | 788,493,736 | 1,328 | 364,084,769 | 5,357,261,392 |
| 48 | 5,357,261,392 | 12,182 | 744,936,707 | 640 | 336,884,436 | 4,949,220,663 |
| 49 | 4,949,220,663 | 5,245 | 702,078,320 | 279 | 310,764,320 | 4,557,911,629 |
| 50 | 4,557,911,629 | 1,486 | 659,994,416 | 77 | 285,747,983 | 4,183,666,605 |

* Employer contributions as shown may differ substantially from those determined by a funding valuation.



Single Discount Rate Development

Projection of Pension Plan Fiduciary Net Position

Beginning July 1, 2020

(Years 51-100)

| Year | Projected Beginning Plan Net Position | Projected Total Contributions | Projected Benefit Payments | Projected Administrative Expenses | Projected Investment Earnings at 6.75% | Projected Ending Plan Net Position |
|------|---------------------------------------|-------------------------------|----------------------------|-----------------------------------|--|------------------------------------|
| | (a) | (b) | (c) | (d) | (e) | (f)=(a)+(b)-(c)-(d)+(e) |
| 51 | \$ 4,183,666,605 | \$ 109 | \$ 618,745,575 | \$ 6 | \$ 261,855,817 | \$ 3,826,776,950 |
| 52 | 3,826,776,950 | - | 578,404,739 | - | 239,105,034 | 3,487,477,244 |
| 53 | 3,487,477,244 | - | 539,046,519 | - | 217,508,954 | 3,165,939,680 |
| 54 | 3,165,939,680 | - | 500,739,180 | - | 197,076,930 | 2,862,277,430 |
| 55 | 2,862,277,430 | - | 463,550,003 | - | 177,814,369 | 2,576,541,796 |
| 56 | 2,576,541,796 | - | 427,546,341 | - | 159,722,496 | 2,308,717,952 |
| 57 | 2,308,717,952 | - | 392,795,506 | - | 142,798,077 | 2,058,720,522 |
| 58 | 2,058,720,522 | - | 359,364,400 | - | 127,033,127 | 1,826,389,248 |
| 59 | 1,826,389,248 | - | 327,318,032 | - | 112,414,670 | 1,611,485,886 |
| 60 | 1,611,485,886 | - | 296,717,813 | - | 98,924,588 | 1,413,692,661 |
| 61 | 1,413,692,661 | - | 267,619,835 | - | 86,539,566 | 1,232,612,392 |
| 62 | 1,232,612,392 | - | 240,073,753 | - | 75,231,148 | 1,067,769,787 |
| 63 | 1,067,769,787 | - | 214,122,267 | - | 64,965,833 | 918,613,353 |
| 64 | 918,613,353 | - | 189,800,065 | - | 55,705,245 | 784,518,533 |
| 65 | 784,518,533 | - | 167,133,004 | - | 47,406,366 | 664,791,896 |
| 66 | 664,791,896 | - | 146,136,367 | - | 40,021,884 | 558,677,413 |
| 67 | 558,677,413 | - | 126,813,264 | - | 33,500,662 | 465,364,811 |
| 68 | 465,364,811 | - | 109,154,428 | - | 27,788,316 | 383,998,699 |
| 69 | 383,998,699 | - | 93,137,995 | - | 22,827,832 | 313,688,536 |
| 70 | 313,688,536 | - | 78,729,243 | - | 18,560,251 | 253,519,544 |
| 71 | 253,519,544 | - | 65,880,360 | - | 14,925,413 | 202,564,597 |
| 72 | 202,564,597 | - | 54,531,223 | - | 11,862,733 | 159,896,107 |
| 73 | 159,896,107 | - | 44,611,163 | - | 9,311,945 | 124,596,889 |
| 74 | 124,596,889 | - | 36,039,723 | - | 7,213,810 | 95,770,976 |
| 75 | 95,770,976 | - | 28,726,412 | - | 5,510,855 | 72,555,419 |
| 76 | 72,555,419 | - | 22,571,037 | - | 4,148,157 | 54,132,538 |
| 77 | 54,132,538 | - | 17,465,776 | - | 3,074,101 | 39,740,864 |
| 78 | 39,740,864 | - | 13,298,132 | - | 2,241,025 | 28,683,756 |
| 79 | 28,683,756 | - | 9,953,374 | - | 1,605,712 | 20,336,094 |
| 80 | 20,336,094 | - | 7,317,198 | - | 1,129,763 | 14,148,659 |
| 81 | 14,148,659 | - | 5,278,291 | - | 779,801 | 9,650,169 |
| 82 | 9,650,169 | - | 3,731,125 | - | 527,517 | 6,446,562 |
| 83 | 6,446,562 | - | 2,580,865 | - | 349,461 | 4,215,158 |
| 84 | 4,215,158 | - | 1,745,350 | - | 226,579 | 2,696,388 |
| 85 | 2,696,388 | - | 1,153,291 | - | 143,718 | 1,686,815 |
| 86 | 1,686,815 | - | 744,271 | - | 89,151 | 1,031,695 |
| 87 | 1,031,695 | - | 468,980 | - | 54,070 | 616,785 |
| 88 | 616,785 | - | 288,516 | - | 32,055 | 360,324 |
| 89 | 360,324 | - | 173,268 | - | 18,570 | 205,626 |
| 90 | 205,626 | - | 101,543 | - | 10,509 | 114,591 |
| 91 | 114,591 | - | 58,062 | - | 5,807 | 62,337 |
| 92 | 62,337 | - | 32,402 | - | 3,132 | 33,067 |
| 93 | 33,067 | - | 17,645 | - | 1,646 | 17,069 |
| 94 | 17,069 | - | 9,362 | - | 841 | 8,548 |
| 95 | 8,548 | - | 4,832 | - | 417 | 4,133 |
| 96 | 4,133 | - | 2,416 | - | 199 | 1,915 |
| 97 | 1,915 | - | 1,171 | - | 90 | 835 |
| 98 | 835 | - | 544 | - | 38 | 329 |
| 99 | 329 | - | 340 | - | 11 | 0 |
| 100 | 0 | - | - | - | 0 | 0 |

* Employer contributions as shown may differ substantially from those determined by a funding valuation.



Single Discount Rate Development

Present Values of Projected Pension Benefit Payments

Beginning July 1, 2020

(Years 1-50)

| Year | Projected Beginning Plan Net Position | Projected Benefit Payments | Funded Portion of Benefit Payments | Unfunded Portion of Benefit Payments | Present Value of Funded Benefit Payments using Expected Return Rate (v) | Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf) | Present Value of Benefit Payments using Single Discount Rate (sdr) |
|------|---------------------------------------|----------------------------|------------------------------------|--------------------------------------|---|---|--|
| (a) | (b) | (c) | (d) | (e) | (f)=(d)*v ^{(a)-.5} | (g)=(e)*vf ^{(a)-.5} | (h)=(c)/(1+sdr) ^{(a)-.5} |
| 1 | \$ 9,097,364,441 | \$ 911,031,716 | \$ 911,031,716 | \$ - | \$ 881,758,296 | \$ - | \$ 881,758,296 |
| 2 | 9,462,775,999 | 952,136,819 | 952,136,819 | - | 863,271,760 | - | 863,271,760 |
| 3 | 9,922,051,592 | 991,824,634 | 991,824,634 | - | 842,393,838 | - | 842,393,838 |
| 4 | 10,369,510,895 | 1,030,338,173 | 1,030,338,173 | - | 819,770,333 | - | 819,770,333 |
| 5 | 10,806,979,854 | 1,068,569,042 | 1,068,569,042 | - | 796,429,084 | - | 796,429,084 |
| 6 | 11,234,973,270 | 1,105,727,455 | 1,105,727,455 | - | 772,013,212 | - | 772,013,212 |
| 7 | 11,654,745,742 | 1,140,743,091 | 1,140,743,091 | - | 746,099,249 | - | 746,099,249 |
| 8 | 12,068,779,178 | 1,173,199,212 | 1,173,199,212 | - | 718,807,558 | - | 718,807,558 |
| 9 | 12,480,072,023 | 1,204,748,349 | 1,204,748,349 | - | 691,463,608 | - | 691,463,608 |
| 10 | 12,890,155,327 | 1,238,204,394 | 1,238,204,394 | - | 665,728,954 | - | 665,728,954 |
| 11 | 13,297,514,425 | 1,270,573,403 | 1,270,573,403 | - | 639,936,647 | - | 639,936,647 |
| 12 | 13,703,795,838 | 1,300,201,961 | 1,300,201,961 | - | 613,451,389 | - | 613,451,389 |
| 13 | 14,112,687,247 | 1,327,361,770 | 1,327,361,770 | - | 586,665,783 | - | 586,665,783 |
| 14 | 14,527,784,159 | 1,352,200,109 | 1,352,200,109 | - | 559,853,679 | - | 559,853,679 |
| 15 | 14,952,564,900 | 1,374,580,506 | 1,374,580,506 | - | 533,133,370 | - | 533,133,370 |
| 16 | 15,391,004,784 | 1,394,273,685 | 1,394,273,685 | - | 506,577,427 | - | 506,577,427 |
| 17 | 15,847,682,907 | 1,411,165,844 | 1,411,165,844 | - | 480,294,900 | - | 480,294,900 |
| 18 | 16,327,626,934 | 1,426,395,396 | 1,426,395,396 | - | 454,780,635 | - | 454,780,635 |
| 19 | 16,835,003,069 | 1,439,075,373 | 1,439,075,373 | - | 429,811,165 | - | 429,811,165 |
| 20 | 17,375,088,274 | 1,449,285,553 | 1,449,285,553 | - | 405,490,077 | - | 405,490,077 |
| 21 | 17,263,969,358 | 1,457,270,958 | 1,457,270,958 | - | 381,943,122 | - | 381,943,122 |
| 22 | 17,132,513,030 | 1,462,890,492 | 1,462,890,492 | - | 359,171,872 | - | 359,171,872 |
| 23 | 16,847,133,043 | 1,466,298,137 | 1,466,298,137 | - | 337,244,519 | - | 337,244,519 |
| 24 | 16,531,257,268 | 1,467,346,702 | 1,467,346,702 | - | 316,145,841 | - | 316,145,841 |
| 25 | 16,185,412,110 | 1,465,216,178 | 1,465,216,178 | - | 295,725,350 | - | 295,725,350 |
| 26 | 15,811,258,778 | 1,459,037,830 | 1,459,037,830 | - | 275,857,959 | - | 275,857,959 |
| 27 | 15,411,679,673 | 1,448,111,171 | 1,448,111,171 | - | 256,479,693 | - | 256,479,693 |
| 28 | 14,990,610,977 | 1,432,706,514 | 1,432,706,514 | - | 237,706,159 | - | 237,706,159 |
| 29 | 14,551,857,045 | 1,413,212,417 | 1,413,212,417 | - | 219,645,727 | - | 219,645,727 |
| 30 | 14,099,035,603 | 1,390,284,595 | 1,390,284,595 | - | 202,418,938 | - | 202,418,938 |
| 31 | 13,635,361,147 | 1,365,344,388 | 1,365,344,388 | - | 186,218,042 | - | 186,218,042 |
| 32 | 13,162,654,669 | 1,339,388,096 | 1,339,388,096 | - | 171,126,827 | - | 171,126,827 |
| 33 | 12,681,776,626 | 1,313,011,326 | 1,313,011,326 | - | 157,149,228 | - | 157,149,228 |
| 34 | 12,192,947,614 | 1,286,212,169 | 1,286,212,169 | - | 144,207,720 | - | 144,207,720 |
| 35 | 11,696,398,295 | 1,258,987,366 | 1,258,987,366 | - | 132,229,813 | - | 132,229,813 |
| 36 | 11,192,360,219 | 1,230,235,916 | 1,230,235,916 | - | 121,039,893 | - | 121,039,893 |
| 37 | 10,682,218,348 | 1,199,164,176 | 1,199,164,176 | - | 110,522,549 | - | 110,522,549 |
| 38 | 10,168,292,341 | 1,165,958,911 | 1,165,958,911 | - | 100,667,111 | - | 100,667,111 |
| 39 | 9,652,839,259 | 1,130,576,447 | 1,130,576,447 | - | 91,440,041 | - | 91,440,041 |
| 40 | 9,138,256,668 | 1,092,622,685 | 1,092,622,685 | - | 82,782,551 | - | 82,782,551 |
| 41 | 8,627,493,604 | 1,052,183,572 | 1,052,183,572 | - | 74,677,922 | - | 74,677,922 |
| 42 | 8,123,571,820 | 1,009,673,421 | 1,009,673,421 | - | 67,129,552 | - | 67,129,552 |
| 43 | 7,629,248,002 | 965,817,342 | 965,817,342 | - | 60,153,367 | - | 60,153,367 |
| 44 | 7,146,669,933 | 921,456,385 | 921,456,385 | - | 53,761,558 | - | 53,761,558 |
| 45 | 6,677,217,829 | 877,038,974 | 877,038,974 | - | 47,934,485 | - | 47,934,485 |
| 46 | 6,221,881,525 | 832,624,393 | 832,624,393 | - | 42,629,518 | - | 42,629,518 |
| 47 | 5,781,645,781 | 788,493,736 | 788,493,736 | - | 37,817,399 | - | 37,817,399 |
| 48 | 5,357,261,392 | 744,936,707 | 744,936,707 | - | 33,469,167 | - | 33,469,167 |
| 49 | 4,949,220,663 | 702,078,320 | 702,078,320 | - | 29,549,028 | - | 29,549,028 |
| 50 | 4,557,911,629 | 659,994,416 | 659,994,416 | - | 26,021,362 | - | 26,021,362 |



Single Discount Rate Development

Present Values of Projected Pension Benefit Payments

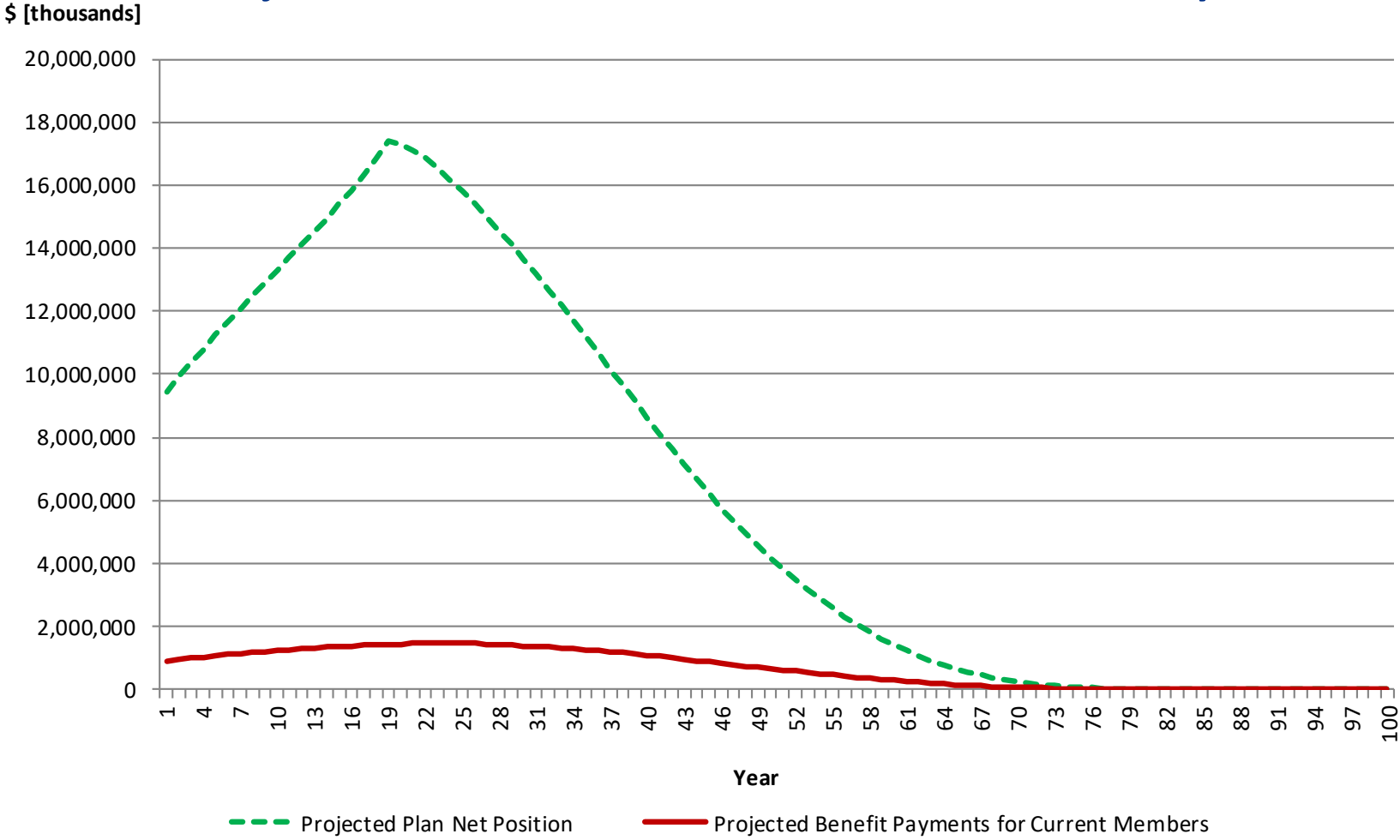
Beginning July 1, 2020 (Concluded)

(Years 51-100)

| Year | Projected Beginning Plan Net Position | Projected Benefit Payments | Funded Portion of Benefit Payments | Unfunded Portion of Benefit Payments | Present Value of Funded Benefit Payments using Expected Return Rate (v) | Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf) | Present Value of Benefit Payments using Single Discount Rate (sdr) |
|---------------|---|----------------------------------|--|--|---|---|--|
| (a) | (b) | (c) | (d) | (e) | (f)=(d)*v^(a)-.5 | (g)=(e)*vf^(a)-.5 | (h)=(c)/(1+sdr)^(a)-.5 |
| 51 | \$ 4,183,666,605 | \$ 618,745,575 | \$ 618,745,575 | \$ - | \$ 22,852,514 | \$ - | \$ 22,852,514 |
| 52 | 3,826,776,950 | 578,404,739 | 578,404,739 | - | 20,011,785 | - | 20,011,785 |
| 53 | 3,487,477,244 | 539,046,519 | 539,046,519 | - | 17,470,782 | - | 17,470,782 |
| 54 | 3,165,939,680 | 500,739,180 | 500,739,180 | - | 15,203,018 | - | 15,203,018 |
| 55 | 2,862,277,430 | 463,550,003 | 463,550,003 | - | 13,183,992 | - | 13,183,992 |
| 56 | 2,576,541,796 | 427,546,341 | 427,546,341 | - | 11,391,100 | - | 11,391,100 |
| 57 | 2,308,717,952 | 392,795,506 | 392,795,506 | - | 9,803,498 | - | 9,803,498 |
| 58 | 2,058,720,522 | 359,364,400 | 359,364,400 | - | 8,401,982 | - | 8,401,982 |
| 59 | 1,826,389,248 | 327,318,032 | 327,318,032 | - | 7,168,837 | - | 7,168,837 |
| 60 | 1,611,485,886 | 296,717,813 | 296,717,813 | - | 6,087,718 | - | 6,087,718 |
| 61 | 1,413,692,661 | 267,619,835 | 267,619,835 | - | 5,143,531 | - | 5,143,531 |
| 62 | 1,232,612,392 | 240,073,753 | 240,073,753 | - | 4,322,349 | - | 4,322,349 |
| 63 | 1,067,769,787 | 214,122,267 | 214,122,267 | - | 3,611,346 | - | 3,611,346 |
| 64 | 918,613,353 | 189,800,065 | 189,800,065 | - | 2,998,719 | - | 2,998,719 |
| 65 | 784,518,533 | 167,133,004 | 167,133,004 | - | 2,473,624 | - | 2,473,624 |
| 66 | 664,791,896 | 146,136,367 | 146,136,367 | - | 2,026,105 | - | 2,026,105 |
| 67 | 558,677,413 | 126,813,264 | 126,813,264 | - | 1,647,026 | - | 1,647,026 |
| 68 | 465,364,811 | 109,154,428 | 109,154,428 | - | 1,328,034 | - | 1,328,034 |
| 69 | 383,998,699 | 93,137,995 | 93,137,995 | - | 1,061,517 | - | 1,061,517 |
| 70 | 313,688,536 | 78,729,243 | 78,729,243 | - | 840,559 | - | 840,559 |
| 71 | 253,519,544 | 65,880,360 | 65,880,360 | - | 658,901 | - | 658,901 |
| 72 | 202,564,597 | 54,531,223 | 54,531,223 | - | 510,907 | - | 510,907 |
| 73 | 159,896,107 | 44,611,163 | 44,611,163 | - | 391,536 | - | 391,536 |
| 74 | 124,596,889 | 36,039,723 | 36,039,723 | - | 296,307 | - | 296,307 |
| 75 | 95,770,976 | 28,726,412 | 28,726,412 | - | 221,245 | - | 221,245 |
| 76 | 72,555,419 | 22,571,037 | 22,571,037 | - | 162,846 | - | 162,846 |
| 77 | 54,132,538 | 17,465,776 | 17,465,776 | - | 118,044 | - | 118,044 |
| 78 | 39,740,864 | 13,298,132 | 13,298,132 | - | 84,194 | - | 84,194 |
| 79 | 28,683,756 | 9,953,374 | 9,953,374 | - | 59,033 | - | 59,033 |
| 80 | 20,336,094 | 7,317,198 | 7,317,198 | - | 40,654 | - | 40,654 |
| 81 | 14,148,659 | 5,278,291 | 5,278,291 | - | 27,471 | - | 27,471 |
| 82 | 9,650,169 | 3,731,125 | 3,731,125 | - | 18,191 | - | 18,191 |
| 83 | 6,446,562 | 2,580,865 | 2,580,865 | - | 11,787 | - | 11,787 |
| 84 | 4,215,158 | 1,745,350 | 1,745,350 | - | 7,467 | - | 7,467 |
| 85 | 2,696,388 | 1,153,291 | 1,153,291 | - | 4,622 | - | 4,622 |
| 86 | 1,686,815 | 744,271 | 744,271 | - | 2,794 | - | 2,794 |
| 87 | 1,031,695 | 468,980 | 468,980 | - | 1,649 | - | 1,649 |
| 88 | 616,785 | 288,516 | 288,516 | - | 951 | - | 951 |
| 89 | 360,324 | 173,268 | 173,268 | - | 535 | - | 535 |
| 90 | 205,626 | 101,543 | 101,543 | - | 294 | - | 294 |
| 91 | 114,591 | 58,062 | 58,062 | - | 157 | - | 157 |
| 92 | 62,337 | 32,402 | 32,402 | - | 82 | - | 82 |
| 93 | 33,067 | 17,645 | 17,645 | - | 42 | - | 42 |
| 94 | 17,069 | 9,362 | 9,362 | - | 21 | - | 21 |
| 95 | 8,548 | 4,832 | 4,832 | - | 10 | - | 10 |
| 96 | 4,133 | 2,416 | 2,416 | - | 5 | - | 5 |
| 97 | 1,915 | 1,171 | 1,171 | - | 2 | - | 2 |
| 98 | 835 | 544 | 544 | - | 1 | - | 1 |
| 99 | 329 | 340 | 340 | - | 1 | - | 1 |
| 100 | - | - | - | - | - | - | - |
| Totals | | | | | \$ 17,820,245,062 | \$ - | \$ 17,820,245,062 |



Projection of Pension Plan Net Position and Benefit Payments



Measurement of the Net OPEB Liability

Regarding the sensitivity of the net OPEB liability to changes in the Single Discount Rate, the following presents the plan's net OPEB liability, calculated using a Single Discount Rate of 6.75%, as well as what the plan's net OPEB liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

Sensitivity of Net OPEB Liability to the Single Discount Rate Assumption

| Measurement Date June 30 | Net OPEB Liability | | | Single Discount Rate Assumption |
|--------------------------------|--------------------|---------------------------------|----------------|---------------------------------------|
| | 1% Decrease | Current Single Discount Rate | 1% Increase | |
| 2016 | \$ 526,463,381 | \$ 484,105,215 | \$ 447,486,556 | 7.25% |
| 2017 | 497,606,504 | 457,233,955 | 422,254,184 | 7.25% |
| 2018 | 476,527,879 | 457,845,765 | 405,513,854 | 7.25% |
| 2019 | 475,523,490 | 438,411,116 | 406,162,814 | 7.25% |
| 2020 | 475,306,336 | 437,708,995 | 405,067,127 | 6.75% |

GASB No. 74 requires the sensitivity of the Net OPEB Liability to the healthcare cost trend assumption. Since the medical subsidy benefits are a fixed stipend, there is no sensitivity to change in the healthcare cost trend assumption.

Statement of Fiduciary Net Position as of June 30, 2020 OPEB

Assets

| | | |
|---|----|----------------------|
| Cash and Deposits | \$ | 818,253 |
| Receivables | | |
| Accounts Receivable - Sale of Investments | \$ | 38,673 |
| Accrued Interest and Other Dividends | | 45,831 |
| Contributions | | 4,701,631 |
| Accounts Receivable - Other | | 15,942 |
| Total Receivables | \$ | 4,802,077 |
| Investments | | |
| Fixed Income | \$ | 7,299,610 |
| Domestic Equities | | 9,818,350 |
| International Equities | | 4,546,812 |
| Real Estate | | 3,416,474 |
| Other | | 6,100,618 |
| Total Investments | \$ | 31,181,864 |
| Total Assets | | \$ 36,802,194 |

Liabilities

| | | |
|--|----|---------------|
| Payables | | |
| Accounts Payable - Purchase of Investments | \$ | 59,797 |
| Accrued Expenses | | - |
| Accounts Payable - Other | | 31,305 |
| Total Liabilities | \$ | 91,102 |

| | | |
|---|--|----------------------|
| Net Position Restricted for OPEB | | \$ 36,711,092 |
|---|--|----------------------|

Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2020 OPEB

Additions

| | |
|---|----------------------|
| Contributions | |
| Employer | \$ 46,459,763 |
| Nonemployer contributing entities | 0 |
| Active Employees | 0 |
| Other | 0 |
| Total Contributions | <u>\$ 46,459,763</u> |
| Investment Income | |
| Net Appreciation in Fair Value of Investments | \$ 47,073 |
| Interest and Dividends | 457,847 |
| Less Investment Expense | (107,434) |
| Net Investment Income | <u>\$ 397,486</u> |
| Other | <u>\$ 0</u> |
| Total Additions | <u>\$ 46,857,249</u> |

Deductions

| | |
|-------------------------------------|----------------------|
| Benefit Payments | \$ 46,816,286 |
| OPEB Plan Administrative Expense | 169,016 |
| Other | 3,476 |
| Total Deductions | <u>\$ 46,988,778</u> |
| Net Increase in Net Position | \$ (131,529) |

Net Position Restricted for OPEB

| | |
|--------------------------|----------------------|
| Beginning of Year | <u>\$ 36,842,621</u> |
| End of Year | <u>\$ 36,711,092</u> |

Schedules of Required Supplementary Information

Schedule of Changes in Net OPEB Liability and Related Ratios

Ultimately 10 Fiscal Years Will Be Displayed

| Fiscal year ending June 30, | 2020 | 2019 | 2018 | 2017 | 2016 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Total OPEB liability | | | | | |
| Service cost | \$ 740,258 | \$ 856,820 | \$ 983,597 | \$ 1,099,249 | \$ 1,217,827 |
| Interest on the total OPEB liability | 32,785,640 | 34,197,051 | 34,247,087 | 35,235,164 | 36,541,607 |
| Changes of benefit terms | 0 | 0 | 0 | - | - |
| Difference between expected and actual experience | (10,218,847) | (7,156,217) | 12,666,860 | - | (4,537,602) |
| Changes of assumptions | 22,675,585 | 0 | 0 | - | - |
| Benefit payments, including refunds of employee contributions | (46,816,286) | (47,797,941) | (49,250,676) | (50,559,778) | (51,805,133) |
| Net change in total OPEB liability | (833,650) | (19,900,287) | (1,353,132) | (14,225,365) | (18,583,301) |
| Total OPEB liability - beginning | 475,253,737 | 495,154,024 | 496,507,156 | 510,732,521 | 529,315,822 |
| Total OPEB liability - ending (a) | <u>\$ 474,420,087</u> | <u>\$ 475,253,737</u> | <u>\$ 495,154,024</u> | <u>\$ 496,507,156</u> | <u>\$ 510,732,521</u> |
| Plan fiduciary net position | | | | | |
| Contributions - Employer | \$ 46,459,763 | \$ 45,509,112 | \$ 44,194,281 | \$ 59,196,827 | \$ 58,174,145 |
| Nonemployer contributing entities contributions | 0 | 0 | 0 | 0 | 0 |
| Contributions - Member | 0 | 0 | 0 | 0 | 0 |
| OPEB plan net investment income | 397,486 | 1,980,805 | 3,128,478 | 4,045,745 | 148,536 |
| Benefit payments, including refunds of employee contributions | (46,816,286) | (47,797,941) | (49,250,676) | (50,559,778) | (51,805,133) |
| OPEB plan administrative expense | (169,016) | (151,772) | (33,144) | (31,713) | (16,951) |
| Other custodial, professional and non-investment expenses, and contributions other than for contribution effort | (3,476) | (5,842) | (3,881) | (5,186) | (3,030) |
| Net change in plan fiduciary net position | (131,529) | (465,638) | (1,964,942) | 12,645,895 | 6,497,567 |
| Plan fiduciary net position - beginning | 36,842,621 | 37,308,259 | 39,273,201 | 26,627,306 | 20,129,739 |
| Plan fiduciary net position - ending (b) | <u>\$ 36,711,092</u> | <u>\$ 36,842,621</u> | <u>\$ 37,308,259</u> | <u>\$ 39,273,201</u> | <u>\$ 26,627,306</u> |
| Net OPEB liability - ending (a) - (b) | <u>\$ 437,708,995</u> | <u>\$ 438,411,116</u> | <u>\$ 457,845,765</u> | <u>\$ 457,233,955</u> | <u>\$ 484,105,215</u> |
| Plan fiduciary net position as a percentage of total OPEB liability | 7.74 % | 7.75 % | 7.53 % | 7.91 % | 5.21 % |
| Covered-Employee Payroll* | \$ 2,894,708,279 | \$ 2,825,006,022 | \$ 2,752,235,069 | \$ 2,667,611,532 | \$ 2,601,403,606 |
| Net OPEB liability as a percentage of covered-employee payroll | 15.12 % | 15.52 % | 16.64 % | 17.14 % | 18.61 % |

Notes to Schedule:

* Based on the June 30 census data for the applicable fiscal year.

Covered-Employee payroll for employer's disclosure may differ.



Schedules of Required Supplementary Information

Schedule of the Employers' Net OPEB Liability

Ultimately 10 Fiscal Years Will Be Displayed

| FY Ending June 30, | Total OPEB Liability | Plan Net Position | Net OPEB Liability | Plan Net Position as a % of Total OPEB Liability | Covered Payroll* | Net OPEB Liability as a % of Covered Payroll |
|-----------------------|----------------------------|----------------------|-----------------------|--|---------------------|--|
| 2016 | \$ 510,732,521 | \$ 26,627,306 | \$ 484,105,215 | 5.21 % | \$ 2,601,403,606 | 18.61 % |
| 2017 | 496,507,156 | 39,273,201 | 457,233,955 | 7.91 % | 2,667,611,532 | 17.14 % |
| 2018 | 495,154,024 | 37,308,259 | 457,845,765 | 7.53 % | 2,752,235,069 | 16.64 % |
| 2019 | 475,253,737 | 36,842,621 | 438,411,116 | 7.75 % | 2,825,006,022 | 15.52 % |
| 2020 | 474,420,087 | 36,711,092 | 437,708,995 | 7.74 % | 2,894,708,279 | 15.12 % |

* Based on the June 30 census data. Covered-employee payroll for employer's disclosure may differ.

Schedule of OPEB Contributions

Ultimately 10 Fiscal Years Will Be Displayed

| FY Ending June 30, | Actuarially Determined Contribution* | Actual Contribution* | Contribution Deficiency (Excess) | Covered Payroll** | Actual Contribution as a % of Covered Payroll |
|-----------------------|--|-------------------------|--|----------------------|---|
| 2016 | \$ 58,174,145 | \$ 58,174,145 | \$ - | \$ 2,601,403,606 | 2.24 % |
| 2017 | 59,196,827 | 59,196,827 | - | 2,667,611,532 | 2.22 % |
| 2018 | 44,194,281 | 44,194,281 | - | 2,752,235,069 | 1.61 % |
| 2019 | 45,509,112 | 45,509,112 | - | 2,825,006,022 | 1.61 % |
| 2020 | 46,459,763 | 46,459,763 | - | 2,894,708,279 | 1.60 % |

* We do not compute a dollar amount for the Actuarially Determined Contribution. It is our understanding that employers contribute the Actuarially Determined Contribution. The amount shown in this column, therefore, matches the actual contributions. Contributions other than the Actuarially Determined Contributions are accounted for separately.

** Based on the June 30 census data. Covered employee payroll for employer's disclosure may differ.

Notes to Schedule of OPEB Contributions

Valuation Date: Actuarially determined contribution rates for the 2020-2021 biennium were determined based on the June 30, 2017 actuarial valuation. Actuarially determined contribution rates for the 2022-2023 biennium were determined based on the June 30, 2019 actuarial valuation. Future employer contribution rates for the purposes of the projection in this report are based on the statutory requirement of solvency funding with the Board's funding policy to maintain a 20% margin (50% for Teachers).

Methods and Assumptions:

| | |
|-------------------------------|--|
| Actuarial Cost Method | Entry Age Normal |
| Amortization Method | Level Percentage of Payroll, Closed |
| Remaining Amortization Period | Not applicable under statutory funding |
| Asset Valuation Method | 5-Year smoothed market; 20% corridor |
| Price Inflation | 2.5% per year |
| Wage Inflation | 3.25% per year (3.00% for Teachers) in the 2017 valuation |
| Salary Increases | 5.6% average, including inflation |
| Municipal Bond Rate | 2.45% per year |
| Investment Rate of Return | 7.25% per year, net of OPEB plan investment expense, including inflation for determining solvency contributions |
| Funding Discount Rate | 3.25% per year |
| Retirement Age | Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2015 valuation pursuant to an experience study of the period 2010 - 2015. |
| Mortality | RP-2014 Healthy Annuitant and Employee generational mortality tables for males and females with credibility adjustments, adjusted for fully generational mortality improvements using Scale MP-2015, based on the last experience study. |
| Health Care Trend Rates | Not applicable, given that the benefits are fixed stipends. |
| Aging Factors | Not applicable, given that the benefits are fixed stipends. |

NOTE: A full list of actuarial assumptions and the summary of benefit provisions can be found starting on page 55. Actuarial assumptions for contributions made in the year ending June 30, 2020 can be found in the June 30, 2017 actuarial valuation report.



Summary of OPEB Participant Data As of June 30, 2019

For purposes of GASB No. 74 disclosures, the System has adopted a roll-forward methodology for accounting purposes. This means that the June 30, 2020 Total OPEB Liability is based on a roll-forward of the June 30, 2019 valuation. A brief summary of the June 30, 2019 census data is shown below.

| | |
|---|--------------|
| Inactive Plan Members or Beneficiaries Currently Receiving Benefits | 9,676 |
| Inactive Plan Members Entitled to But Not Yet Receiving Benefits | - |
| Active Plan Members | <u>2,222</u> |
| Total Plan Members | 11,898 |

Additional information regarding the covered population as of June 30, 2019 may be found in the CAFR Schedules, GASB Statement Nos. 67 and 74 Plan Reporting and Accounting Schedules report issued October 31, 2019.

Calculation of the Single Discount Rate for OPEB

GASB Statement No. 74 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total OPEB Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on OPEB plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on OPEB plan investments is 6.75%; the municipal bond rate is 2.45%; and the resulting Single Discount Rate is 6.75%.

The tables in this section provide background for the development of the Single Discount Rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Since the medical subsidy plan is closed to new hires, normal cost contributions for future hires are not included.

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Single Discount Rate Development

Projection of OPEB Plan Net Position Beginning July 1, 2020

(Years 1-50)

| Year | Projected Beginning Plan Net Position | Projected Total Contributions* | Projected Benefit Payments | Projected Administrative Expenses | Projected Investment Earnings at 6.750% | Projected Ending Plan Net Position |
|------|--|--------------------------------------|----------------------------------|---|--|--|
| | (a) | (b) | (c) | (d) | (e) | (f)=(a)+(b)-(c)-(d)+(e) |
| 1 | \$ 36,711,092 | \$ 47,946,259 | \$ 47,657,844 | \$ 169,016 | \$ 2,481,963 | \$ 39,312,453 |
| 2 | 39,312,453 | 42,054,507 | 47,332,550 | 163,032 | 2,472,953 | 36,344,331 |
| 3 | 36,344,331 | 18,324,277 | 46,813,369 | 157,113 | 1,502,219 | 9,200,345 |
| 4 | 9,200,345 | 45,553,736 | 46,129,978 | 151,182 | 596,874 | 9,069,795 |
| 5 | 9,069,795 | 44,622,395 | 45,236,673 | 145,069 | 587,002 | 8,897,450 |
| 6 | 8,897,450 | 43,523,012 | 44,166,400 | 138,825 | 574,609 | 8,689,846 |
| 7 | 8,689,846 | 42,247,676 | 42,918,189 | 132,517 | 559,905 | 8,446,722 |
| 8 | 8,446,722 | 40,913,950 | 41,590,309 | 126,192 | 543,510 | 8,187,681 |
| 9 | 8,187,681 | 39,460,046 | 40,147,964 | 119,711 | 525,856 | 7,905,907 |
| 10 | 7,905,907 | 37,928,775 | 38,621,122 | 113,175 | 506,906 | 7,607,292 |
| 11 | 7,607,292 | 36,289,981 | 36,989,616 | 106,849 | 486,718 | 7,287,527 |
| 12 | 7,287,527 | 34,599,325 | 35,296,349 | 100,701 | 465,424 | 6,955,226 |
| 13 | 6,955,226 | 32,865,140 | 33,555,764 | 94,631 | 443,408 | 6,613,380 |
| 14 | 6,613,380 | 31,087,237 | 31,770,286 | 88,577 | 420,786 | 6,262,539 |
| 15 | 6,262,539 | 29,299,597 | 29,968,866 | 82,534 | 397,762 | 5,908,499 |
| 16 | 5,908,499 | 27,513,008 | 28,165,556 | 76,438 | 374,622 | 5,554,135 |
| 17 | 5,554,135 | 25,745,420 | 26,377,885 | 70,172 | 351,577 | 5,203,075 |
| 18 | 5,203,075 | 23,975,839 | 24,591,405 | 63,672 | 328,658 | 4,852,495 |
| 19 | 4,852,495 | 22,245,287 | 22,838,040 | 56,872 | 305,977 | 4,508,848 |
| 20 | 4,508,848 | 20,564,073 | 21,132,011 | 49,821 | 283,838 | 4,174,927 |
| 21 | 4,174,927 | 18,955,871 | 19,495,573 | 42,945 | 262,464 | 3,854,744 |
| 22 | 3,854,744 | 17,435,787 | 17,944,855 | 36,638 | 242,078 | 3,551,117 |
| 23 | 3,551,117 | 15,993,537 | 16,473,678 | 30,960 | 222,732 | 3,262,748 |
| 24 | 3,262,748 | 14,654,803 | 15,102,438 | 25,997 | 204,511 | 2,993,627 |
| 25 | 2,993,627 | 13,412,691 | 13,828,811 | 21,765 | 187,533 | 2,743,275 |
| 26 | 2,743,275 | 12,269,423 | 12,654,244 | 18,142 | 171,793 | 2,512,104 |
| 27 | 2,512,104 | 11,223,065 | 11,577,475 | 15,056 | 157,301 | 2,299,939 |
| 28 | 2,299,939 | 10,260,540 | 10,587,395 | 12,454 | 143,981 | 2,104,612 |
| 29 | 2,104,612 | 9,379,806 | 9,680,416 | 10,259 | 131,741 | 1,925,484 |
| 30 | 1,925,484 | 8,577,848 | 8,853,460 | 8,415 | 120,541 | 1,761,997 |
| 31 | 1,761,997 | 7,844,863 | 8,097,831 | 6,868 | 110,309 | 1,612,470 |
| 32 | 1,612,470 | 7,174,011 | 7,406,341 | 5,573 | 100,944 | 1,475,510 |
| 33 | 1,475,510 | 6,560,418 | 6,773,703 | 4,491 | 92,367 | 1,350,100 |
| 34 | 1,350,100 | 5,998,264 | 6,194,160 | 3,598 | 84,509 | 1,235,115 |
| 35 | 1,235,115 | 5,481,926 | 5,662,027 | 2,865 | 77,296 | 1,129,446 |
| 36 | 1,129,446 | 5,006,107 | 5,171,905 | 2,257 | 70,658 | 1,032,049 |
| 37 | 1,032,049 | 4,566,007 | 4,718,871 | 1,762 | 64,530 | 941,953 |
| 38 | 941,953 | 4,157,551 | 4,298,668 | 1,364 | 58,852 | 858,324 |
| 39 | 858,324 | 3,777,321 | 3,907,711 | 1,041 | 53,574 | 780,467 |
| 40 | 780,467 | 3,422,570 | 3,543,098 | 785 | 48,654 | 707,809 |
| 41 | 707,809 | 3,091,156 | 3,202,537 | 582 | 44,060 | 639,906 |
| 42 | 639,906 | 2,781,445 | 2,884,276 | 420 | 39,766 | 576,421 |
| 43 | 576,421 | 2,492,234 | 2,587,014 | 295 | 35,752 | 517,098 |
| 44 | 517,098 | 2,222,674 | 2,309,818 | 202 | 32,004 | 461,755 |
| 45 | 461,755 | 1,972,149 | 2,052,018 | 133 | 28,513 | 410,266 |
| 46 | 410,266 | 1,740,196 | 1,813,111 | 80 | 25,270 | 362,540 |
| 47 | 362,540 | 1,526,415 | 1,592,689 | 41 | 22,270 | 318,495 |
| 48 | 318,495 | 1,330,442 | 1,390,371 | 20 | 19,508 | 278,054 |
| 49 | 278,054 | 1,151,853 | 1,205,739 | 8 | 16,979 | 241,139 |
| 50 | 241,139 | 990,142 | 1,038,299 | 3 | 14,678 | 207,656 |

* Employer contributions as shown may differ substantially from those determined by a funding valuation.



Single Discount Rate Development

Projection of OPEB Plan Net Position Beginning July 1, 2020

(Years 51-100)

| Year | Projected Beginning Plan Net Position | Projected Total Contributions* | Projected Benefit Payments | Projected Administrative Expenses | Projected Investment Earnings at 6.750% | Projected Ending Plan Net Position |
|------|---|--------------------------------------|----------------------------------|---|--|--|
| | (a) | (b) | (c) | (d) | (e) | (f)=(a)+(b)-(c)-(d)+(e) |
| 51 | \$ 207,656 | \$ 844,702 | \$ 887,463 | \$ 1 | \$ 12,597 | \$ 177,491 |
| 52 | 177,491 | 714,841 | 752,551 | 0 | 10,729 | 150,510 |
| 53 | 150,510 | 599,800 | 632,812 | 0 | 9,063 | 126,562 |
| 54 | 126,562 | 498,741 | 527,412 | 0 | 7,591 | 105,482 |
| 55 | 105,482 | 410,762 | 435,454 | 0 | 6,300 | 87,091 |
| 56 | 87,091 | 334,906 | 355,980 | 0 | 5,179 | 71,196 |
| 57 | 71,196 | 270,182 | 287,993 | 0 | 4,214 | 57,599 |
| 58 | 57,599 | 215,579 | 230,476 | 0 | 3,393 | 46,095 |
| 59 | 46,095 | 170,079 | 182,397 | 0 | 2,702 | 36,479 |
| 60 | 36,479 | 132,657 | 142,721 | 0 | 2,128 | 28,544 |
| 61 | 28,544 | 102,311 | 110,427 | 0 | 1,657 | 22,085 |
| 62 | 22,085 | 78,068 | 84,525 | 0 | 1,276 | 16,905 |
| 63 | 16,905 | 59,005 | 64,069 | 0 | 973 | 12,814 |
| 64 | 12,814 | 44,263 | 48,176 | 0 | 735 | 9,635 |
| 65 | 9,635 | 33,056 | 36,036 | 0 | 551 | 7,207 |
| 66 | 7,207 | 24,686 | 26,921 | 0 | 412 | 5,384 |
| 67 | 5,384 | 18,543 | 20,196 | 0 | 309 | 4,039 |
| 68 | 4,039 | 14,109 | 15,318 | 0 | 233 | 3,064 |
| 69 | 3,064 | 10,958 | 11,833 | 0 | 178 | 2,367 |
| 70 | 2,367 | 8,745 | 9,375 | 0 | 139 | 1,875 |
| 71 | 1,875 | 7,202 | 7,657 | 0 | 111 | 1,531 |
| 72 | 1,531 | 6,126 | 6,458 | 0 | 92 | 1,292 |
| 73 | 1,292 | 5,367 | 5,615 | 0 | 79 | 1,123 |
| 74 | 1,123 | 4,817 | 5,007 | 0 | 69 | 1,001 |
| 75 | 1,001 | 4,402 | 4,555 | 0 | 63 | 911 |
| 76 | 911 | 4,074 | 4,202 | 0 | 57 | 840 |
| 77 | 840 | 3,801 | 3,912 | 0 | 53 | 782 |
| 78 | 782 | 3,564 | 3,663 | 0 | 50 | 733 |
| 79 | 733 | 3,351 | 3,442 | 0 | 46 | 688 |
| 80 | 688 | 3,155 | 3,239 | 0 | 44 | 648 |
| 81 | 648 | 2,970 | 3,049 | 0 | 41 | 610 |
| 82 | 610 | 2,793 | 2,868 | 0 | 39 | 574 |
| 83 | 574 | 2,621 | 2,692 | 0 | 36 | 538 |
| 84 | 538 | 2,451 | 2,520 | 0 | 34 | 504 |
| 85 | 504 | 2,284 | 2,350 | 0 | 32 | 470 |
| 86 | 470 | 2,120 | 2,183 | 0 | 30 | 437 |
| 87 | 437 | 1,959 | 2,019 | 0 | 27 | 404 |
| 88 | 404 | 1,801 | 1,858 | 0 | 25 | 372 |
| 89 | 372 | 1,647 | 1,702 | 0 | 23 | 340 |
| 90 | 340 | 1,500 | 1,551 | 0 | 21 | 310 |
| 91 | 310 | 1,358 | 1,406 | 0 | 19 | 281 |
| 92 | 281 | 1,223 | 1,268 | 0 | 17 | 254 |
| 93 | 254 | 1,092 | 1,134 | 0 | 16 | 227 |
| 94 | 227 | 966 | 1,005 | 0 | 14 | 201 |
| 95 | 201 | 844 | 881 | 0 | 12 | 176 |
| 96 | 176 | 726 | 761 | 0 | 11 | 152 |
| 97 | 152 | 616 | 648 | 0 | 9 | 130 |
| 98 | 130 | 513 | 542 | 0 | 8 | 108 |
| 99 | 108 | 418 | 444 | 0 | 6 | 89 |
| 100 | 89 | 333 | 356 | 0 | 5 | 71 |

* Employer contributions as shown may differ substantially from those determined by a funding valuation.



Single Discount Rate Development

Present Values of Projected OPEB Benefits Beginning July 1, 2020

(Years 1-50)

| Year | Projected Beginning Plan Net Position | Projected Benefit Payments | Funded Portion of Projected Benefit Payments | Unfunded Portion of Projected Benefit Payments | Present Value of Funded Benefit Payments Using Expected Return Rate (v) | Present Value of Unfunded Benefit Payments Using Municipal Bond Rate (vf) | Present Value of All Benefit Payments Using Single Discount Rate (SDR) |
|------|--|----------------------------------|--|--|---|---|--|
| (a) | (b) | (c) | (d) | (e) | (f)=(d)*v ^a ((a)-.5) | (g)=(e)*vf ^a ((a)-.5) | (h)=(c)/((1+SDR) ^a (a)-.5) |
| 1 | \$ 36,711,092 | \$ 47,657,844 | \$ 47,657,844 | \$ 0 | \$ 46,126,494 | \$ 0 | \$ 46,126,494 |
| 2 | 39,312,453 | 47,332,550 | 47,332,550 | 0 | 42,914,898 | 0 | 42,914,898 |
| 3 | 36,344,331 | 46,813,369 | 46,813,369 | 0 | 39,760,349 | 0 | 39,760,349 |
| 4 | 9,200,345 | 46,129,978 | 46,129,978 | 0 | 36,702,501 | 0 | 36,702,501 |
| 5 | 9,069,795 | 45,236,673 | 45,236,673 | 0 | 33,715,933 | 0 | 33,715,933 |
| 6 | 8,897,450 | 44,166,400 | 44,166,400 | 0 | 30,836,753 | 0 | 30,836,753 |
| 7 | 8,689,846 | 42,918,189 | 42,918,189 | 0 | 28,070,500 | 0 | 28,070,500 |
| 8 | 8,446,722 | 41,590,309 | 41,590,309 | 0 | 25,481,971 | 0 | 25,481,971 |
| 9 | 8,187,681 | 40,147,964 | 40,147,964 | 0 | 23,042,867 | 0 | 23,042,867 |
| 10 | 7,905,907 | 38,621,122 | 38,621,122 | 0 | 20,764,907 | 0 | 20,764,907 |
| 11 | 7,607,292 | 36,989,616 | 36,989,616 | 0 | 18,630,179 | 0 | 18,630,179 |
| 12 | 7,287,527 | 35,296,349 | 35,296,349 | 0 | 16,653,255 | 0 | 16,653,255 |
| 13 | 6,955,226 | 33,555,764 | 33,555,764 | 0 | 14,830,937 | 0 | 14,830,937 |
| 14 | 6,613,380 | 31,770,286 | 31,770,286 | 0 | 13,153,905 | 0 | 13,153,905 |
| 15 | 6,262,539 | 29,968,866 | 29,968,866 | 0 | 11,623,475 | 0 | 11,623,475 |
| 16 | 5,908,499 | 28,165,556 | 28,165,556 | 0 | 10,233,310 | 0 | 10,233,310 |
| 17 | 5,554,135 | 26,377,885 | 26,377,885 | 0 | 8,977,799 | 0 | 8,977,799 |
| 18 | 5,203,075 | 24,591,405 | 24,591,405 | 0 | 7,840,529 | 0 | 7,840,529 |
| 19 | 4,852,495 | 22,838,040 | 22,838,040 | 0 | 6,821,077 | 0 | 6,821,077 |
| 20 | 4,508,848 | 21,132,011 | 21,132,011 | 0 | 5,912,445 | 0 | 5,912,445 |
| 21 | 4,174,927 | 19,495,573 | 19,495,573 | 0 | 5,109,688 | 0 | 5,109,688 |
| 22 | 3,854,744 | 17,944,855 | 17,944,855 | 0 | 4,405,857 | 0 | 4,405,857 |
| 23 | 3,551,117 | 16,473,678 | 16,473,678 | 0 | 3,788,900 | 0 | 3,788,900 |
| 24 | 3,262,748 | 15,102,438 | 15,102,438 | 0 | 3,253,882 | 0 | 3,253,882 |
| 25 | 2,993,627 | 13,828,811 | 13,828,811 | 0 | 2,791,076 | 0 | 2,791,076 |
| 26 | 2,743,275 | 12,654,244 | 12,654,244 | 0 | 2,392,518 | 0 | 2,392,518 |
| 27 | 2,512,104 | 11,577,475 | 11,577,475 | 0 | 2,050,524 | 0 | 2,050,524 |
| 28 | 2,299,939 | 10,587,395 | 10,587,395 | 0 | 1,756,598 | 0 | 1,756,598 |
| 29 | 2,104,612 | 9,680,416 | 9,680,416 | 0 | 1,504,559 | 0 | 1,504,559 |
| 30 | 1,925,484 | 8,853,460 | 8,853,460 | 0 | 1,289,022 | 0 | 1,289,022 |
| 31 | 1,761,997 | 8,097,831 | 8,097,831 | 0 | 1,104,456 | 0 | 1,104,456 |
| 32 | 1,612,470 | 7,406,341 | 7,406,341 | 0 | 946,271 | 0 | 946,271 |
| 33 | 1,475,510 | 6,773,703 | 6,773,703 | 0 | 810,718 | 0 | 810,718 |
| 34 | 1,350,100 | 6,194,160 | 6,194,160 | 0 | 694,478 | 0 | 694,478 |
| 35 | 1,235,115 | 5,662,027 | 5,662,027 | 0 | 594,675 | 0 | 594,675 |
| 36 | 1,129,446 | 5,171,905 | 5,171,905 | 0 | 508,851 | 0 | 508,851 |
| 37 | 1,032,049 | 4,718,871 | 4,718,871 | 0 | 434,921 | 0 | 434,921 |
| 38 | 941,953 | 4,298,668 | 4,298,668 | 0 | 371,140 | 0 | 371,140 |
| 39 | 858,324 | 3,907,711 | 3,907,711 | 0 | 316,052 | 0 | 316,052 |
| 40 | 780,467 | 3,543,098 | 3,543,098 | 0 | 268,443 | 0 | 268,443 |
| 41 | 707,809 | 3,202,537 | 3,202,537 | 0 | 227,298 | 0 | 227,298 |
| 42 | 639,906 | 2,884,276 | 2,884,276 | 0 | 191,765 | 0 | 191,765 |
| 43 | 576,421 | 2,587,014 | 2,587,014 | 0 | 161,125 | 0 | 161,125 |
| 44 | 517,098 | 2,309,818 | 2,309,818 | 0 | 134,764 | 0 | 134,764 |
| 45 | 461,755 | 2,052,018 | 2,052,018 | 0 | 112,153 | 0 | 112,153 |
| 46 | 410,266 | 1,813,111 | 1,813,111 | 0 | 92,829 | 0 | 92,829 |
| 47 | 362,540 | 1,592,689 | 1,592,689 | 0 | 76,388 | 0 | 76,388 |
| 48 | 318,495 | 1,390,371 | 1,390,371 | 0 | 62,468 | 0 | 62,468 |
| 49 | 278,054 | 1,205,739 | 1,205,739 | 0 | 50,747 | 0 | 50,747 |
| 50 | 241,139 | 1,038,299 | 1,038,299 | 0 | 40,937 | 0 | 40,937 |



Single Discount Rate Development

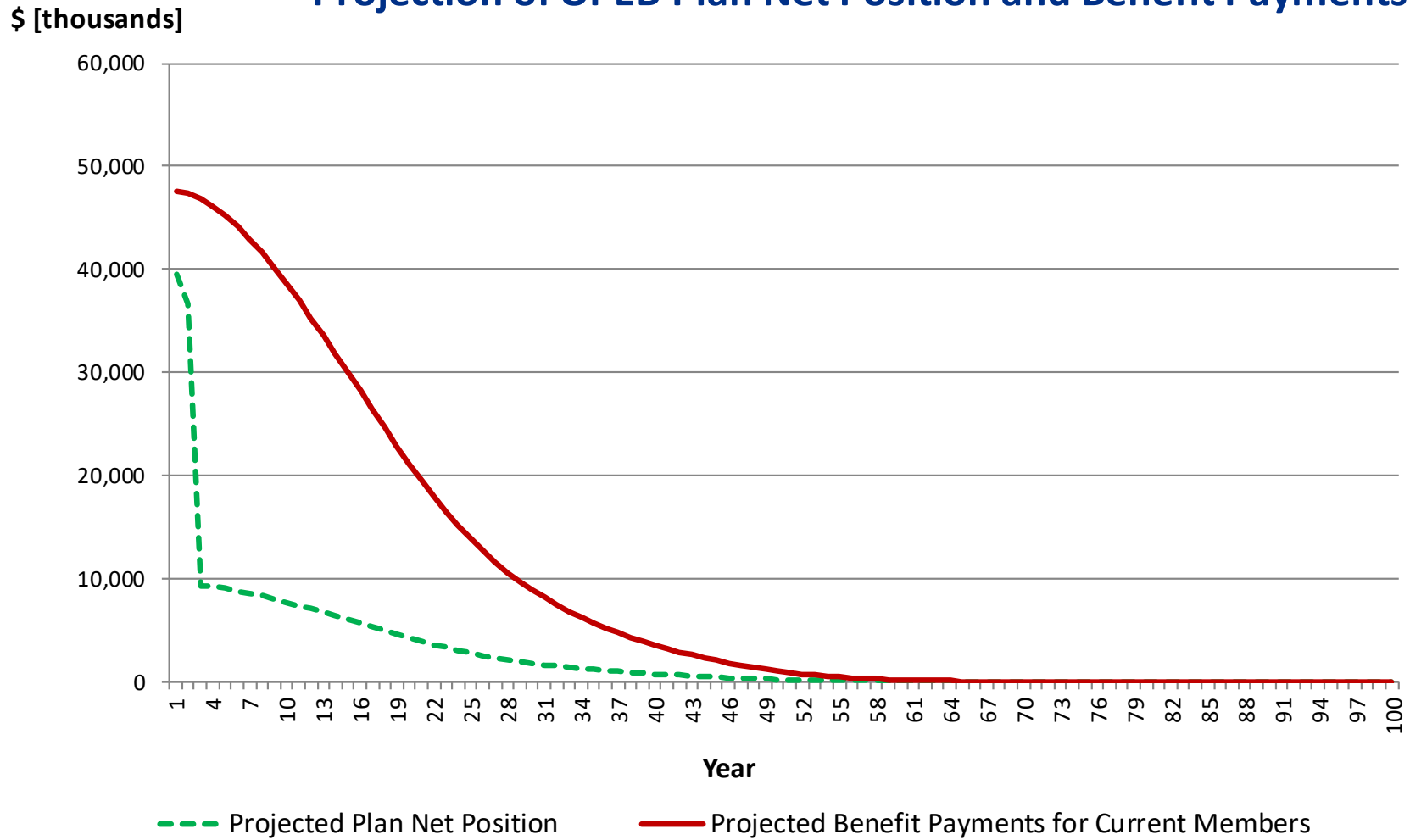
Present Values of Projected OPEB Benefits Beginning July 1, 2020

(Years 50-100)

| Year | Projected Beginning Plan Net Position | Projected Benefit Payments | Funded Portion of Projected Benefit Payments | Unfunded Portion of Projected Benefit Payments | Present Value of Funded Benefit Payments Using Expected Return Rate (v) | Present Value of Unfunded Benefit Payments Using Municipal Bond Rate (vf) | Present Value of All Benefit Payments Using Single Discount Rate (SDR) |
|---------------|--|----------------------------------|--|--|--|--|--|
| (a) | (b) | (c) | (d) | (e) | (f)=(d)*v ^{^(a)-.5} | (g)=(e)*vf ^{^(a)-.5} | (h)=(c)/(1+SDR) ^{^(a)-.5} |
| 51 | \$ 207,659 | \$ 887,463 | \$ 887,463 | \$ 0 | \$ 32,777 | \$ 0 | \$ 32,777 |
| 52 | 177,492 | 752,551 | 752,551 | 0 | 26,037 | 0 | 26,037 |
| 53 | 150,510 | 632,812 | 632,812 | 0 | 20,510 | 0 | 20,510 |
| 54 | 126,562 | 527,412 | 527,412 | 0 | 16,013 | 0 | 16,013 |
| 55 | 105,482 | 435,454 | 435,454 | 0 | 12,385 | 0 | 12,385 |
| 56 | 87,091 | 355,980 | 355,980 | 0 | 9,484 | 0 | 9,484 |
| 57 | 71,196 | 287,993 | 287,993 | 0 | 7,188 | 0 | 7,188 |
| 58 | 57,599 | 230,476 | 230,476 | 0 | 5,389 | 0 | 5,389 |
| 59 | 46,095 | 182,397 | 182,397 | 0 | 3,995 | 0 | 3,995 |
| 60 | 36,479 | 142,721 | 142,721 | 0 | 2,928 | 0 | 2,928 |
| 61 | 28,544 | 110,427 | 110,427 | 0 | 2,122 | 0 | 2,122 |
| 62 | 22,085 | 84,525 | 84,525 | 0 | 1,522 | 0 | 1,522 |
| 63 | 16,905 | 64,069 | 64,069 | 0 | 1,081 | 0 | 1,081 |
| 64 | 12,814 | 48,176 | 48,176 | 0 | 761 | 0 | 761 |
| 65 | 9,635 | 36,036 | 36,036 | 0 | 533 | 0 | 533 |
| 66 | 7,207 | 26,921 | 26,921 | 0 | 373 | 0 | 373 |
| 67 | 5,384 | 20,196 | 20,196 | 0 | 262 | 0 | 262 |
| 68 | 4,039 | 15,318 | 15,318 | 0 | 186 | 0 | 186 |
| 69 | 3,064 | 11,833 | 11,833 | 0 | 135 | 0 | 135 |
| 70 | 2,367 | 9,375 | 9,375 | 0 | 100 | 0 | 100 |
| 71 | 1,875 | 7,657 | 7,657 | 0 | 77 | 0 | 77 |
| 72 | 1,531 | 6,458 | 6,458 | 0 | 61 | 0 | 61 |
| 73 | 1,292 | 5,615 | 5,615 | 0 | 49 | 0 | 49 |
| 74 | 1,123 | 5,007 | 5,007 | 0 | 41 | 0 | 41 |
| 75 | 1,001 | 4,555 | 4,555 | 0 | 35 | 0 | 35 |
| 76 | 911 | 4,202 | 4,202 | 0 | 30 | 0 | 30 |
| 77 | 840 | 3,912 | 3,912 | 0 | 26 | 0 | 26 |
| 78 | 782 | 3,663 | 3,663 | 0 | 23 | 0 | 23 |
| 79 | 733 | 3,442 | 3,442 | 0 | 20 | 0 | 20 |
| 80 | 688 | 3,239 | 3,239 | 0 | 18 | 0 | 18 |
| 81 | 648 | 3,049 | 3,049 | 0 | 16 | 0 | 16 |
| 82 | 610 | 2,868 | 2,868 | 0 | 14 | 0 | 14 |
| 83 | 574 | 2,692 | 2,692 | 0 | 12 | 0 | 12 |
| 84 | 538 | 2,520 | 2,520 | 0 | 11 | 0 | 11 |
| 85 | 504 | 2,350 | 2,350 | 0 | 9 | 0 | 9 |
| 86 | 470 | 2,183 | 2,183 | 0 | 8 | 0 | 8 |
| 87 | 437 | 2,019 | 2,019 | 0 | 7 | 0 | 7 |
| 88 | 404 | 1,858 | 1,858 | 0 | 6 | 0 | 6 |
| 89 | 372 | 1,702 | 1,702 | 0 | 5 | 0 | 5 |
| 90 | 340 | 1,551 | 1,551 | 0 | 4 | 0 | 4 |
| 91 | 310 | 1,406 | 1,406 | 0 | 4 | 0 | 4 |
| 92 | 281 | 1,268 | 1,268 | 0 | 3 | 0 | 3 |
| 93 | 254 | 1,134 | 1,134 | 0 | 3 | 0 | 3 |
| 94 | 227 | 1,005 | 1,005 | 0 | 2 | 0 | 2 |
| 95 | 201 | 881 | 881 | 0 | 2 | 0 | 2 |
| 96 | 176 | 761 | 761 | 0 | 1 | 0 | 1 |
| 97 | 152 | 648 | 648 | 0 | 1 | 0 | 1 |
| 98 | 130 | 542 | 542 | 0 | 1 | 0 | 1 |
| 99 | 108 | 444 | 444 | 0 | 1 | 0 | 1 |
| 100 | 89 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | \$ 477,781,461 | \$ 477,781,461 | \$ 477,781,461 | \$ 0 | \$ 477,781,461 | \$ 0 | \$ 477,781,461 |



Projection of OPEB Plan Net Position and Benefit Payments



SECTION C

ACTUARIAL SECTION

Summary of Changes from June 30, 2019 to June 30, 2020 (\$ in Millions)

| | Pension | | | | |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| | Employees | Teachers | Police | Fire | Total |
| Reconciliation of UAAL | | | | | |
| Expected | \$1,942.8 | \$2,518.7 | \$1,045.5 | \$417.1 | \$5,924.1 |
| Impact of (Gain)Loss | 47.0 | 36.1 | 18.1 | 14.9 | 116.1 |
| Impact of Method Change | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Impact of Plan Change | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> |
| Total | \$1,989.8 | \$2,554.8 | \$1,063.6 | \$432.0 | \$6,040.2 |
| Funded % | | | | | |
| Prior Valuation | 61.4 % | 57.0 % | 63.9 % | 68.1 % | 60.8 % |
| Expected Change | 0.9 % | 1.1 % | 0.9 % | 1.0 % | 0.9 % |
| Impact of Gain(Loss) | (0.8)% | (0.6)% | (0.7)% | (1.0)% | (0.7)% |
| Impact of Method Change | 0.0 % | 0.0 % | 0.0 % | 0.0 % | 0.0 % |
| Impact of Plan Change | <u>0.0 %</u> | <u>0.0 %</u> | <u>0.0 %</u> | <u>0.0 %</u> | <u>0.0 %</u> |
| Total | 61.5 % | 57.5 % | 64.1 % | 68.1 % | 61.0 % |

| | Medical Subsidy | | | | |
|-------------------------------|--------------------|---------------------------------------|------------|---------------|------------|
| | State Employees | Political Subdivision Employees | Teachers | Police & Fire | Total |
| Reconciliation of UAAL | | | | | |
| Expected | \$56.7 | \$38.8 | \$222.5 | \$313.8 | \$631.8 |
| Impact of (Gain)Loss | (0.4) | (0.6) | (1.4) | (10.9) | (13.3) |
| Impact of Method Change | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Impact of Plan Change | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> |
| Total | \$56.3 | \$38.2 | \$221.1 | \$302.9 | \$618.5 |

The pension funded percent of 61.0% is the ratio of the actuarial value of assets to the actuarial accrued liability for NHRS in total. That ratio is 58.7% based on market value of assets.

The funded percent is appropriate for assessing the need for future contributions, but does not give an indication for the amount of such contributions. The funded percent is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the Plan's benefit obligations.

Development of Actuarial Value of Assets

| Year Ended June 30: | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| A. Actuarial Value Beginning of Year | \$ 8,204,537,196 | \$ 8,747,715,939 | \$ 9,158,579,327 | | | | |
| B. Market Value End of Year | 8,874,175,235 | 9,207,615,151 | 9,134,075,534 | | | | |
| C. Market Value Beginning of Year | 8,293,261,180 | 8,874,175,235 | 9,207,615,151 | | | | |
| D. Non-Investment Net Cash Flow* | (139,877,807) | (157,374,111) | (175,559,940) | | | | |
| E. Investment Income | | | | | | | |
| E1. Market Total: B - C - D | 720,791,862 | 490,814,027 | 102,020,323 | | | | |
| E2. Assumed Rate | 7.25% | 7.25% | 6.75% | | | | |
| E3. Amount for Immediate Recognition | 589,758,376 | 628,504,594 | 612,278,957 | | | | |
| E4. Amount for Phased-In Recognition: E1-E3 | 131,033,486 | (137,690,567) | (510,258,634) | | | | |
| F. Phased-In Recognition of Investment Income | | | | | | | |
| F1. Current Year: 0.20 x E4 | 26,206,697 | (27,538,113) | (102,051,727) | | | | |
| F2. First Prior Year | 86,519,686 | 26,206,697 | (27,538,113) | \$ (102,051,727) | | | |
| F3. Second Prior Year | (92,471,186) | 86,519,686 | 26,206,697 | (27,538,113) | \$ (102,051,727) | | |
| F4. Third Prior Year | (52,984,178) | (92,471,186) | 86,519,686 | 26,206,697 | (27,538,113) | \$ (102,051,727) | |
| F5. Fourth Prior Year | 126,027,155 | (52,984,179) | (92,471,187) | 86,519,687 | 26,206,698 | (27,538,115) | \$ (102,051,726) |
| F6. Total Recognized Investment Gain | 93,298,174 | (60,267,095) | (109,334,644) | (16,863,456) | (103,383,142) | (129,589,842) | (102,051,726) |
| G. Preliminary Actuarial Value End of Year: A + D + E3 + F6 | \$ 8,747,715,939 | \$ 9,158,579,327 | \$ 9,485,963,700 | | | | |
| H. Additional Recognized G/L due to Corridor | - | - | - | | | | |
| I. Final Actuarial Value after 20% Corridor | \$ 8,747,715,939 | \$ 9,158,579,327 | \$ 9,485,963,700 | | | | |
| J. Difference between Market & Actuarial Value: B-I | \$ 126,459,296 | \$ 49,035,824 | \$ (351,888,166) | | | | |
| K. Recognized Rate of Return | 8.40% | 6.55% | 5.54% | | | | |
| L. Market Rate of Return | 8.77% | 5.58% | 1.12% | | | | |
| M. Ratio of Actuarial Value to Market Value | 98.57% | 99.47% | 103.85% | | | | |

The Funding Value of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased-in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. The Funding Value of Assets is unbiased with respect to Market Value. At any time it may be either greater or less than Market Value. If assumed rates are exactly realized for 4 consecutive years, it will become equal to Market Value. Final Funding Value of Assets may not be less than 80% nor more than 120% of Market Value of Assets.

**Information regarding net cash flows for funding purposes is provided separately from the GASB Nos. 67 and 74 information and may differ. Total non-investment net cash flow includes \$3,700 in employer contributions and \$587,347 in administrative expenses that were unallocated in the GASB accounting statements.*



Allocation of Assets

| | Employees | Teachers | Police | Fire | Total |
|---|------------------|------------------|------------------|----------------|------------------|
| Allocated Fund Assets (Actuarial Value) | \$ 3,188,223,101 | \$ 3,457,284,990 | \$ 1,914,956,570 | \$ 925,499,039 | \$ 9,485,963,700 |
| Less Reserve for TSAs | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0 |
| Less 401(h) Account | \$ 14,610,864 | \$ 6,487,132 | \$ 14,757,780 | \$ 2,269,603 | \$ 38,125,379 |
| Net Pension Valuation Assets | \$ 3,173,612,237 | \$ 3,450,797,858 | \$ 1,900,198,790 | \$ 923,229,436 | \$ 9,447,838,321 |

The Actuarial Value of Assets was allocated to the pension and medical subsidy plans based on the Market Value of those plans. The Actuarial Value of Assets was then further allocated to each fund (either pension or medical subsidy) based on the Market Value of those funds. The 401(h) account for Police and Fire is combined. The allocation between Police and Fire is based on the percentage of the medical subsidy market value of assets.

Development of Pension Actuarial Liabilities June 30, 2020

| Actuarial Present Value of | Total Present Value (1) | Portion Covered by Future Normal Cost Contributions (2) | Actuarial Accrued Liabilities (1) - (2) |
|--|-------------------------------|---|---|
| Age and service allowances based on total service likely to be rendered by present active members | \$ 7,531,705,302 | \$ 1,600,334,129 | \$ 5,931,371,173 |
| Disability benefits likely to be paid to present active members | 158,256,217 | 109,012,933 | 49,243,284 |
| Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion) | 67,360,412 | 34,169,146 | 33,191,266 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members | 1,115,122,018 | 788,788,410 | 326,333,608 |
| Benefits likely to be paid to current inactive and vested deferred members | 408,289,399 | - | 408,289,399 |
| Benefits to be paid to current retirees, beneficiaries, and future beneficiaries of current retirees | 8,739,586,553 | - | 8,739,586,553 |
| Total | \$ 18,020,319,901 | \$ 2,532,304,618 | \$ 15,488,015,283 |
| Actuarial Value of Assets | \$ 9,447,838,321 | - | \$ 9,447,838,321 |
| Liabilities to be Covered by Future Contributions | \$ 8,572,481,580 | \$ 2,532,304,618 | \$ 6,040,176,962 |
| Funded Ratio | | | 61.0% |



Actuarial Balance Sheet as of June 30, 2020

Assets and Present Value of Expected Future Contributions

| | Pension | Medical Subsidy |
|--|-------------------|-----------------|
| A. Present valuation assets | | |
| 1. Net assets from system financial statements | \$ 9,097,364,442 | \$ 36,711,092 |
| 2. Actuarial value adjustment | 350,473,879 | 1,414,287 |
| 3. Actuarial valuation assets | 9,447,838,321 | 38,125,379 |
| B. Actuarial present value of expected future employer contributions | | |
| 1. For normal costs | 652,224,843 | 9,073,011 |
| 2. For unfunded actuarial accrued liability | 6,040,176,962 | 618,522,256 |
| 3. Total | 6,692,401,805 | 627,595,267 |
| C. Actuarial present value of expected future member contributions | 1,880,079,775 | - |
| D. Total Present and Expected Future Resources | \$ 18,020,319,901 | \$ 665,720,646 |

Present Value of Expected Future Benefit Payments

| | Pension | Medical Subsidy |
|--|-------------------|-----------------|
| A. To retirees and beneficiaries | \$ 8,739,586,553 | \$ 572,222,367 |
| B. To vested terminated members | 301,837,947 | - |
| C. To non-vested terminated members (outstanding refunds) | 106,451,452 | - |
| D. To present active members | | |
| 1. Allocated to service rendered prior to valuation date - actuarial accrued liability | 6,340,139,331 | 84,425,268 |
| 2. Allocated to service likely to be rendered after valuation date | 2,532,304,618 | 9,073,011 |
| 3. Total | 8,872,443,949 | 93,498,279 |
| E. Total Actuarial Present Value of Expected Future Benefit Payments | \$ 18,020,319,901 | \$ 665,720,646 |

Experience Gain/(Loss) -- June 30, 2020

| | Pension | Medical Subsidy |
|---|----------------------|--------------------|
| (1) Actual UAAL* as of June 30, 2019 | \$ 5,892,232,478 | \$ 658,777,859 |
| (2) Normal cost from 2019 valuation | 320,817,838 | 2,009,445 |
| (3) Actual contributions (employer and employee) | 674,751,135 | 46,459,763 |
| (4) Interest accrual: $[(1)+1/2 [(2)-(3)]] \times \{.0675 \text{ for pension};$.0275 for medical subsidy} | 385,780,443 | 17,505,199 |
| (5) Expected UAAL end of year: (1)+(2)-(3)+(4) | 5,924,079,624 | 631,832,740 |
| (6) Change from legislation | - | - |
| (7) Change from revised actuarial assumptions | - | - |
| (8) Expected UAAL after changes: (5)+(6)+(7) | 5,924,079,624 | 631,832,740 |
| (9) Actual UAAL* as of June 30, 2020 | 6,040,176,962 | 618,522,256 |
| (10) Gain/(loss) for year: (8)-(9) | (116,097,338) | 13,310,484 |
| (11) Gain/(loss) as percent of actuarial accrued liabilities at start of year | (0.8)% | 1.9 % |

* *Unfunded Actuarial Accrued Liabilities.*

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment Risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability Mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution Risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
6. **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Plan Maturity Measures

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures are discussed in the following pages. A historical summary of these plan maturity measures can be found on page 44.

Funded Ratio

The ratio of actuarial value of assets to actuarial accrued liabilities is expected to trend toward 100% by June 30, 2041. Each subsequent change in liability as calculated in odd-numbered years shall be separately amortized over a fixed period of no longer than 20 years.

Ratio of Actual Total Payroll to Expected Total Payroll

This ratio is expected to remain near 100% each year.

Ratio of Net Cash Flow to Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

Ratio of Actives to Retirees and Beneficiaries

A young plan with many active members and few retirees will have a high ratio of actives to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

Ratio of Unfunded Actuarial Accrued Liability to Payroll

The ratio of the unfunded actuarial accrued liability to payroll is expected to trend toward 0% by June 30, 2041.

Ratio of Actuarial Value of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the actuarial value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

Plan Maturity Measures (Concluded)

Ratio of Actuarial Accrued Liability to Payroll

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time. Total AAL / Total Payroll is expected to grow as the System matures. The rate of growth may slow down as members hired on or after July 1, 2011 replace current members.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

Standard Deviation of Investment Return to Payroll

This measure illustrates the impact of a one standard deviation change in investment return as a percent of payroll. Investment return experience other than expected ultimately affects the employer contribution rates. The higher the ratio of this risk metric, the greater the expected volatility in employer contribution rates. Absent changes in investment policy, this metric is expected to increase as the assets grow to 100% of the AAL.

Standard Deviation of Contribution Rate

This measure illustrates the impact of a one standard deviation change in investment return on the annual contribution rate. Absent a change in amortization policy, this rate is expected to increase substantially as the amortization period decreases.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

Summary of Risk Measures Pension

| Valuation Year | Funded Ratio | | | | Actual Total Payroll / Expected Total Payroll | Net Cash Flow as a Percent of MVA | Ratio of Actives to Retirees ¹ | UAAL Amortization Period | Ratio to Payroll | | | | |
|--------------------|--|--------------------------------|----------------------------------|---------------------------|---|-----------------------------------|---|--------------------------|------------------|------|------|---|---|
| | Percentage of AAL Covered by Net Actuarial Value of Assets Available | | | | | | | | UAAL | AVA | AAL | Standard Deviation of Investment Return | Standard Deviation of Contribution Rate |
| | NHRS in Total | Aggregate Member Contributions | Current Retirees & Beneficiaries | Active & Inactive Members | | | | | | | | | |
| June 30, 2008 | 67.8% | 100% | 83% | 0% | 101% | (1.2)% | 2.2 | 30 | 109% | 230% | 339% | *** | *** |
| June 30, 2009* | 58.3 | 100 | 63 | 0 | 103 | (2.3) | 2.1 | 30 | 145 | 202 | 346 | 23% | 0.3% |
| June 30, 2010 | 58.5 | 100 | 61 | 0 | 98 | (2.8) | 2.0 | 30 | 150 | 211 | 361 | 23 | 0.3% |
| June 30, 2011#* | 57.4 | 100 | 63 | 0 | 98 | (3.1) | 1.8 | 29 | 169 | 228 | 397 | 26 | 0.3% |
| June 30, 2012 | 56.1 | 100 | 58 | 0 | 96 | (2.3) | 1.7 | 28 | 183 | 234 | 417 | 28 | 0.3% |
| June 30, 2013 | 56.7 | 100 | 59 | 0 | 97 | (2.9) | 1.6 | 27 | 185 | 243 | 428 | 29 | 0.3% |
| June 30, 2014 | 60.7 | 100 | 67 | 0 | 97 | (1.7) | 1.6 | 26 | 173 | 267 | 440 | 32 | 0.4% |
| June 30, 2015#^ | 59.2 | 100 | 66 | 0 | 99 | (1.8) | 1.5 | 25 | 195 | 283 | 478 | 33 | 0.4% |
| June 30, 2016 | 60.0 | 100 | 67 | 0 | 98 | (1.7) | 1.5 | 24 | 196 | 294 | 489 | 34 | 0.4% |
| June 30, 2017# | 61.8 | 100 | 72 | 0 | 99 | (2.0) | 1.3 | 23 | 189 | 306 | 495 | 36 | 0.5% |
| June 30, 2018 | 63.6 | 100 | 75 | 0 | 100 | (1.7) | 1.3 | 22 | 181 | 317 | 498 | 37 | 0.5% |
| June 30, 2019#* @^ | 60.8 | 100 | 73 | 0 | 100 | (1.8) | 1.3 | 21 | 209 | 323 | 531 | 40 | 0.6% |
| June 30, 2020 | 61.0 | 100 | 72 | 0 | 100 | (1.9) | 1.3 | 20 | 209 | 326 | 535 | 40 | 0.6% |

After reflection of changes in assumptions.

* After reflection of changes in legislation.

@ After reflection of changes in methodology.

*** Unavailable.

^ The standard deviation of investment return was updated in the experience study.

¹ Beginning with the valuation year ended June 30, 2019, the ratio of actives to retirees excludes additional data records which have resulted from additional annuities, survivor benefits, or members having benefits in more than one valuation group. There were 2,463 such records in 2020.

These risk measures are provided in accordance with the System's Actuarial Funding Policy. Short term fluctuations will occur due to experience, plan changes, and assumption and method changes. Long term expectations are described on the prior pages.

UAAL Amortization Period: The unfunded liability as of June 30, 2019 shall be amortized through 2039 (an 18-year period beginning on July 1, 2021). Each subsequent change in liability as calculated in odd-numbered years shall be separately amortized over a fixed period of no longer than 20 years.



Pension Solvency Test

The New Hampshire Retirement System funding objective is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will pay all promised benefits when due -- the ultimate test of financial soundness.

A solvency test is one means of checking a system's progress under its funding program. In a solvency test, the plan's present assets (cash and investments) are compared with:

- 1) Active member contributions on deposit;
- 2) The liabilities for future benefits to present retired lives; and
- 3) The liabilities for service already rendered by active and inactive members.

In a system that has been following the discipline of level percent-of-payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (liability 3) will be partially covered by the remainder of present assets. The larger the funded portion of liability 3, the stronger the condition of the system.

Total of all Groups (\$ in Thousands)

| Fiscal Year | Projected Pension Liabilities for | | | | Percentage of Accrued Liabilities Covered by Net Assets Available | | |
|-------------|---------------------------------------|---|--|-----------------------------------|---|------|-----|
| | (1) Aggregate Member Contributions | (2) Current Retirees & Beneficiaries | (3) Active & Inactive Members (Employer Financed Portion) | Net Assets Available for Benefits | (1) | (2) | (3) |
| | 2010 | \$2,553,612 | \$4,378,205 | \$2,022,115 | \$5,233,838 | 100% | 61% |
| 2011 | #* 2,631,430 | 4,959,865 | 2,406,956 | 5,740,516 | 100% | 63% | 0% |
| 2012 | 2,773,081 | 5,246,672 | 2,341,847 | 5,817,882 | 100% | 58% | 0% |
| 2013 | 2,808,526 | 5,519,814 | 2,380,428 | 6,070,681 | 100% | 59% | 0% |
| 2014 | 2,842,340 | 5,789,052 | 2,413,782 | 6,700,553 | 100% | 67% | 0% |
| 2015 | # 2,949,169 | 6,565,522 | 2,788,945 | 7,280,761 | 100% | 66% | 0% |
| 2016 | 2,978,817 | 6,964,227 | 2,789,822 | 7,636,066 | 100% | 67% | 0% |
| 2017 | # 2,915,811 | 7,315,440 | 2,977,198 | 8,165,684 | 100% | 72% | 0% |
| 2018 | 2,927,793 | 7,667,448 | 3,107,908 | 8,710,939 | 100% | 75% | 0% |
| 2019 | #*@ 3,019,358 | 8,392,790 | 3,602,017 | 9,121,933 | 100% | 73% | 0% |
| 2020 | 3,119,450 | 8,739,587 | 3,628,978 | 9,447,838 | 100% | 72% | 0% |

After reflection of changes in assumptions.

* After reflection of changes in legislation.

@ After reflection of changes in methodology.



Pension Solvency Test -- Comparative Statement (\$ in Thousands)

| Group | Fiscal Year | | Projected Pension Liabilities for | | | | Percentage of Accrued Liabilities Covered by Net Assets Available | | |
|-----------|-------------|-----|-----------------------------------|----------------------------------|---|-----------------------------------|---|-----|-----|
| | | | (1) | (2) | (3) | Net Assets Available for Benefits | (1) | (2) | (3) |
| | | | Aggregate Member Contributions | Current Retirees & Beneficiaries | Active & Inactive Members (Employer Financed Portion) | | | | |
| Employees | 2011 | ** | \$ 995,389 | \$ 1,548,109 | \$ 810,983 | \$ 1,834,609 | 100% | 54% | 0% |
| Teachers | 2011 | ** | 1,041,699 | 1,893,862 | 973,407 | 2,153,182 | 100% | 59% | 0% |
| Police | 2011 | ** | 396,344 | 1,030,900 | 432,256 | 1,179,798 | 100% | 76% | 0% |
| Fire | 2011 | ** | 197,998 | 486,994 | 190,310 | 572,927 | 100% | 77% | 0% |
| Employees | 2012 | | 1,052,106 | 1,641,026 | 756,255 | 1,877,395 | 100% | 50% | 0% |
| Teachers | 2012 | | 1,101,262 | 1,999,152 | 949,670 | 2,173,315 | 100% | 54% | 0% |
| Police | 2012 | | 411,672 | 1,092,005 | 432,116 | 1,189,308 | 100% | 71% | 0% |
| Fire | 2012 | | 208,041 | 514,489 | 203,805 | 577,864 | 100% | 72% | 0% |
| Employees | 2013 | | 1,069,628 | 1,729,855 | 755,482 | 1,977,479 | 100% | 52% | 0% |
| Teachers | 2013 | | 1,107,192 | 2,087,926 | 977,937 | 2,255,011 | 100% | 55% | 0% |
| Police | 2013 | | 417,630 | 1,160,173 | 438,580 | 1,236,579 | 100% | 71% | 0% |
| Fire | 2013 | | 214,076 | 541,860 | 208,430 | 601,612 | 100% | 72% | 0% |
| Employees | 2014 | | 1,083,878 | 1,823,517 | 784,437 | 2,195,284 | 100% | 61% | 0% |
| Teachers | 2014 | | 1,113,650 | 2,198,892 | 966,511 | 2,482,496 | 100% | 62% | 0% |
| Police | 2014 | | 422,972 | 1,209,741 | 454,133 | 1,361,280 | 100% | 78% | 0% |
| Fire | 2014 | | 221,840 | 556,902 | 208,701 | 661,493 | 100% | 79% | 0% |
| Employees | 2015 | # | 1,137,601 | 2,007,299 | 863,247 | 2,403,294 | 100% | 63% | 0% |
| Teachers | 2015 | # | 1,155,922 | 2,555,611 | 1,141,245 | 2,682,083 | 100% | 60% | 0% |
| Police | 2015 | # | 433,215 | 1,364,908 | 543,229 | 1,477,517 | 100% | 77% | 0% |
| Fire | 2015 | # | 222,431 | 637,704 | 241,223 | 717,867 | 100% | 78% | 0% |
| Employees | 2016 | | 1,152,928 | 2,139,549 | 857,347 | 2,538,563 | 100% | 65% | 0% |
| Teachers | 2016 | | 1,171,831 | 2,692,037 | 1,156,821 | 2,799,863 | 100% | 60% | 0% |
| Police | 2016 | | 430,490 | 1,460,840 | 535,225 | 1,546,665 | 100% | 76% | 0% |
| Fire | 2016 | | 223,568 | 671,801 | 240,428 | 750,975 | 100% | 79% | 0% |
| Employees | 2017 | | 1,133,071 | 2,272,436 | 934,564 | 2,734,558 | 100% | 70% | 0% |
| Teachers | 2017 | # | 1,132,876 | 2,819,228 | 1,211,560 | 2,979,005 | 100% | 65% | 0% |
| Police | 2017 | | 426,606 | 1,526,761 | 570,755 | 1,650,908 | 100% | 80% | 0% |
| Fire | 2017 | | 223,258 | 697,015 | 260,320 | 801,214 | 100% | 83% | 0% |
| Employees | 2018 | | 1,128,180 | 2,391,404 | 974,131 | 2,922,358 | 100% | 75% | 0% |
| Teachers | 2018 | | 1,142,455 | 2,956,675 | 1,268,903 | 3,176,932 | 100% | 69% | 0% |
| Police | 2018 | | 428,859 | 1,596,512 | 591,281 | 1,758,301 | 100% | 83% | 0% |
| Fire | 2018 | | 228,299 | 722,857 | 273,593 | 853,348 | 100% | 86% | 0% |
| Employees | 2019 | **@ | 1,160,917 | 2,646,257 | 1,181,832 | 3,063,967 | 100% | 72% | 0% |
| Teachers | 2019 | **@ | 1,181,186 | 3,195,041 | 1,461,286 | 3,326,088 | 100% | 67% | 0% |
| Police | 2019 | **@ | 441,940 | 1,768,684 | 666,606 | 1,838,868 | 100% | 79% | 0% |
| Fire | 2019 | **@ | 235,315 | 782,808 | 292,293 | 893,010 | 100% | 84% | 0% |
| Employees | 2020 | | 1,194,410 | 2,766,799 | 1,202,228 | 3,173,612 | 100% | 72% | 0% |
| Teachers | 2020 | | 1,225,030 | 3,310,020 | 1,470,570 | 3,450,798 | 100% | 67% | 0% |
| Police | 2020 | | 458,081 | 1,847,135 | 658,558 | 1,900,199 | 100% | 78% | 0% |
| Fire | 2020 | | 241,928 | 815,632 | 297,625 | 923,229 | 100% | 84% | 0% |

After reflection of changes in assumptions.

* After reflection of changes in legislation.

@ After reflection of changes in methodology.



Development of Pension Actuarial Liabilities

June 30, 2020

Employees

| Actuarial Present Value of | Total Present Value (1) | Portion Covered by Future Normal Cost Contributions (2) | Actuarial Accrued Liabilities (1) - (2) |
|--|-------------------------------|--|---|
| Age and service allowances based on total service likely to be rendered by present active members | \$ 2,477,539,563 | \$ 450,993,648 | \$ 2,026,545,915 |
| Disability benefits likely to be paid to present active members | 56,492,321 | 34,430,387 | 22,061,934 |
| Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion) | 27,171,671 | 13,112,648 | 14,059,023 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members | 464,277,082 | 323,671,342 | 140,605,740 |
| Benefits likely to be paid to current inactive and vested deferred members | 193,364,650 | - | 193,364,650 |
| Benefits to be paid to current retirees, beneficiaries, and future beneficiaries of current retirees | 2,766,799,436 | - | 2,766,799,436 |
| Total | \$ 5,985,644,723 | \$ 822,208,025 | \$ 5,163,436,698 |
| Actuarial Value of Assets | \$ 3,173,612,237 | - | \$ 3,173,612,237 |
| Liabilities to be Covered by Future Contributions | \$ 2,812,032,486 | \$ 822,208,025 | \$ 1,989,824,461 |
| Funded Ratio | | | 61.5% |



Development of Pension Actuarial Liabilities

June 30, 2020

Teachers

| Actuarial Present Value of | Total Present Value (1) | Portion Covered by Future Normal Cost Contributions (2) | Actuarial Accrued Liabilities (1) - (2) |
|--|-------------------------------|--|---|
| Age and service allowances based on total service likely to be rendered by present active members | \$ 2,971,915,191 | \$ 633,735,398 | \$ 2,338,179,793 |
| Disability benefits likely to be paid to present active members | 22,045,134 | 10,623,887 | 11,421,247 |
| Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion) | 20,522,071 | 9,324,080 | 11,197,991 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members | 480,591,730 | 320,694,619 | 159,897,111 |
| Benefits likely to be paid to current inactive and vested deferred members | 174,903,362 | - | 174,903,362 |
| Benefits to be paid to current retirees, beneficiaries, and future beneficiaries of current retirees | 3,310,020,068 | - | 3,310,020,068 |
| Total | \$ 6,979,997,556 | \$ 974,377,984 | \$ 6,005,619,572 |
| Actuarial Value of Assets | \$ 3,450,797,858 | - | \$ 3,450,797,858 |
| Liabilities to be Covered by Future Contributions | \$ 3,529,199,698 | \$ 974,377,984 | \$ 2,554,821,714 |
| Funded Ratio | | | 57.5% |



Development of Pension Actuarial Liabilities

June 30, 2020

Police

| Actuarial Present Value of | Total Present Value (1) | Portion Covered by Future Normal Cost Contributions (2) | Actuarial Accrued Liabilities (1) - (2) |
|--|-------------------------------|---|---|
| Age and service allowances based on total service likely to be rendered by present active members | \$ 1,366,435,474 | \$ 324,894,673 | \$ 1,041,540,801 |
| Disability benefits likely to be paid to present active members | 61,022,449 | 46,622,626 | 14,399,823 |
| Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion) | 12,667,759 | 7,665,765 | 5,001,994 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members | 141,339,261 | 119,981,632 | 21,357,629 |
| Benefits likely to be paid to current inactive and vested deferred members | 34,338,017 | - | 34,338,017 |
| Benefits to be paid to current retirees, beneficiaries, and future beneficiaries of current retirees | 1,847,135,419 | - | 1,847,135,419 |
| Total | \$ 3,462,938,379 | \$ 499,164,696 | \$ 2,963,773,683 |
| Actuarial Value of Assets | \$ 1,900,198,790 | - | \$ 1,900,198,790 |
| Liabilities to be Covered by Future Contributions | \$ 1,562,739,589 | \$ 499,164,696 | \$ 1,063,574,893 |
| Funded Ratio | | | 64.1% |



Development of Pension Actuarial Liabilities

June 30, 2020

Fire

| Actuarial Present Value of | Total Present Value (1) | Portion Covered by Future Normal Cost Contributions (2) | Actuarial Accrued Liabilities (1) - (2) |
|--|-------------------------------|---|---|
| Age and service allowances based on total service likely to be rendered by present active members | \$ 715,815,074 | \$ 190,710,410 | \$ 525,104,664 |
| Disability benefits likely to be paid to present active members | 18,696,313 | 17,336,033 | 1,360,280 |
| Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion) | 6,998,911 | 4,066,653 | 2,932,258 |
| Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members | 28,913,945 | 24,440,817 | 4,473,128 |
| Benefits likely to be paid to current inactive and vested deferred members | 5,683,370 | - | 5,683,370 |
| Benefits to be paid to current retirees, beneficiaries, and future beneficiaries of current retirees | 815,631,630 | - | 815,631,630 |
| Total | \$ 1,591,739,243 | \$ 236,553,913 | \$ 1,355,185,330 |
| Actuarial Value of Assets | \$ 923,229,436 | - | \$ 923,229,436 |
| Liabilities to be Covered by Future Contributions | \$ 668,509,807 | \$ 236,553,913 | \$ 431,955,894 |
| Funded Ratio | | | 68.1% |



OPEB Solvency Test

The New Hampshire Retirement System funding objective is to contribute the minimum amount necessary to maintain assets sufficient to pay medical subsidy benefits in each of the four subaccounts. Given the absence of assets from prior pre-funding (as exists for pension benefits), medical subsidy benefits payable in the future will be largely funded by future employer contributions. If the contributions to the System are soundly executed, the System will pay all promised benefits when due -- the ultimate test of financial soundness.

A solvency test is one means of checking a system's progress under its funding program. In a solvency test, the plan's present assets (cash and investments) are compared with:

- 1) The liabilities for future benefits to present retired lives; and
- 2) The liabilities for service already rendered by active and inactive members.

Total of all Groups (\$ in Thousands)

| Fiscal Year | Projected OPEB Liabilities for | | | Net Assets Available for Benefits | Percentage of Accrued Liabilities Covered by Net Assets Available | |
|-------------|---|--|-----------|-----------------------------------|---|-----|
| | (1) Current Retirees & Beneficiaries | (2) Active & Inactive Members (Employer Financed Portion) | | | (1) | (2) |
| 2015 # | \$ 610,819 | \$ 150,523 | \$ 19,515 | 3% | 0% | |
| 2016 | 591,335 | 138,797 | 27,350 | 5% | 0% | |
| 2017 # | 568,676 | 127,872 | 38,853 | 7% | 0% | |
| 2018 | 576,261 | 113,316 | 36,777 | 6% | 0% | |
| 2019 # | 595,066 | 100,358 | 36,646 | 6% | 0% | |
| 2020 | 572,222 | 84,426 | 38,125 | 7% | 0% | |

After reflection of changes in assumptions.

Valuation Methods

Pension

Actuarial Cost Method - Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

- (i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
- (ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gain/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities - Unfunded Actuarial Accrued Liabilities are amortized by level (principal & interest combined) percent-of-payroll contributions from the contribution effective date. The unfunded liability as of June 30, 2017 shall be amortized through 2039. Each subsequent change in liability as calculated in odd-numbered years shall be separately amortized over a fixed period of no longer than 20 years.

The rate-setting valuations project the unfunded actuarial accrued liability to the beginning of the applicable biennium to determine the unfunded amortization rate. We projected the normal cost rates from the first year of the rate setting biennium to better reflect the impact of the changing benefit tiers and generational mortality. We developed projected normal cost rates based on a new entrant profile determined by the current active population with 3-8 years of service.

Medical Subsidy

Liabilities are determined under the entry-age actuarial cost method.

Under New Hampshire Statute, contribution rates to the 401(h) sub-trust are determined as the lesser of 25% of the employers' total contributions or the actuarial required contribution rate that keeps the medical subsidy sub-trust solvent (the "solvency rate"). Under IRS Regulations, 401(h) sub-trust contributions are limited by 25% of the total contributions to the plan (other than contributions to fund past service credits). NHRS maintains the historical information for determining compliance with IRC Section 401(h). A test for compliance with IRC Section 401(h) was outside the scope of this valuation.

Solvency rates for medical subsidy benefits are set such that a specified margin is established by the end of the biennium and for all future years thereafter. The margin is intended to mitigate the risk of insolvency due to adverse experience.

At the November 12, 2013 Board meeting, the Board elected to incorporate a 20% margin requirement for all four member classifications.

At the June 9, 2020 Board meeting, the Board elected to increase the margin for the Teachers group from 20% to 50%. No change to the margin requirement of 20% was made for the other groups.



Valuation Methods

Actuarial Value of Assets - The Actuarial Value of Assets recognizes assumed investment return fully each year. Differences between actual return on the Market Value of assets and assumed return on the Actuarial Value of Assets are phased-in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Actuarial Value of Assets will tend to be greater than Market Value. The Actuarial Value of Assets is unbiased with respect to Market Value. At any time, it may be either greater or less than Market Value. If assumed rates are exactly realized for 4 consecutive years, it will become equal to Market Value. Actuarial Value is limited to a 20% corridor around the Market Value.

The Actuarial Value of Assets was allocated to the pension and medical subsidy plans based on the Market Value of those plans. The Actuarial Value of Assets was then further allocated to each fund (either pension or medical subsidy) based on the Market Value of those funds.

For purposes of determining the medical subsidy solvency rates, the Market Value of Assets was used for all group funds due to the short time horizon before these closed group funds are expected to become pay-as-you-go.

Development of Amortization Payment

The employer contribution rates determined by the 2019 valuation are for the 2022-2023 biennium. The Unfunded Actuarial Accrued Liability (UAAL) was determined using the Actuarial Value of assets and actuarial accrued liability calculated as of the valuation date. The UAAL amortization payment (one component of the contribution requirement), is the level percent of pay required to fully amortize the UAAL over multiple periods beginning on July 1, 2021. This UAAL payment reflects any payments expected to be made and interest to be accrued between the valuation date and the date contributions determined by the June 30, 2019 Funding report are scheduled to begin. It was assumed that the entire pension contribution as determined by the June 30, 2017 valuation effective from July 1, 2019 to June 30, 2021 would be contributed to the net pension assets. The unfunded liability as of June 30, 2017 shall be amortized through 2039. Each subsequent change in liability as calculated in odd-numbered years shall be separately amortized over a fixed period of no longer than 20 years.

Valuation Assumptions

The actuarial assumptions used in the valuation are shown in this section. All actuarial assumptions and the rationale for the assumptions are based on the July 1, 2015 to June 30, 2019 experience study.

All actuarial assumptions are expectations of future experience, not market measures. Under RSA 100-A:14 IX, the Board of Trustees sets the actuarial assumptions after consulting with the actuary.

Economic Assumptions

The investment return rate assumed in the valuations is 6.75% per year, compounded annually (net after investment expenses). **The investment return rate** assumed in the medical subsidy valuations is 2.75% per year, compounded annually (net after investment expenses) for purposes of computing accrued liabilities. However, for determining the solvency contribution rate for the medical subsidy account and GASB 74, the investment return rate assumption was 6.75% on the market value of assets.

The **Wage Inflation Rate** assumed in this valuation was 2.75% per year. The wage inflation rate is defined to be the portion of total pay increases for an individual that are due to macroeconomic forces including productivity, price inflation, and labor market conditions. The wage inflation rate does not include pay changes related to individual merit and seniority effects.

The **Price Inflation** assumption is 2.0% per year.

The assumed **Real Rate of Return** over wage inflation is defined to be the portion of total investment return that is more than the assumed total wage growth rate. Considering other economic assumptions, the 6.75% investment return rate translates to an assumed real rate of return over wage inflation of 4.00%. The assumed real rate of return over price inflation would be higher – at 4.75%, with a 2.0% price inflation assumption.

The active member population for Employees, Police and Fire is assumed to remain constant. For purposes of financing the unfunded liabilities, total payroll is assumed to grow at the wage inflation rate – 2.75% per year. For Teachers, the active member population is assumed to decline by 0.50% per year. For purposes of financing the unfunded liabilities, total payroll for Teachers is assumed to grow at the wage inflation rate minus 0.50% which is 2.25% per year.

Pay increase assumptions for individual active members are shown for sample ages on the following pages. Part of the assumption for each age is for merit and/or seniority increase, and the other 2.75% recognizes wage inflation, including price inflation, productivity increases, and other macroeconomic forces.

Valuation Assumptions

Employees

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefits will be based.

| Salary Increase Assumptions for an Individual Member | | | |
|---|----------------------------------|---------------------------|-------------------------------|
| Service Index | Merit & Seniority | Base (Economy) | Increase Next Year |
| 1 | 12.00% | 2.75% | 14.75% |
| 2 | 6.00% | 2.75% | 8.75% |
| 3 | 3.00% | 2.75% | 5.75% |
| 4 | 2.75% | 2.75% | 5.50% |
| 5 | 2.50% | 2.75% | 5.25% |
| 6 | 2.25% | 2.75% | 5.00% |
| 7 | 2.00% | 2.75% | 4.75% |
| 8 | 1.75% | 2.75% | 4.50% |
| 9 | 1.50% | 2.75% | 4.25% |
| 10 | 1.25% | 2.75% | 4.00% |
| 11 | 1.00% | 2.75% | 3.75% |
| 12 | 0.75% | 2.75% | 3.50% |
| 13 | 0.50% | 2.75% | 3.25% |
| 14 | 0.50% | 2.75% | 3.25% |
| 15 | 0.50% | 2.75% | 3.25% |
| 16 | 0.50% | 2.75% | 3.25% |
| 17 | 0.50% | 2.75% | 3.25% |
| 18 | 0.50% | 2.75% | 3.25% |
| 19 | 0.50% | 2.75% | 3.25% |
| 20 | 0.50% | 2.75% | 3.25% |
| 21 | 0.50% | 2.75% | 3.25% |
| 22 | 0.50% | 2.75% | 3.25% |
| 23 | 0.50% | 2.75% | 3.25% |
| 24 | 0.50% | 2.75% | 3.25% |
| 25 | 0.50% | 2.75% | 3.25% |
| Ref: | 853 - -2.75% | | |

Valuation Assumptions

Employees (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

For Members Hired Prior to July 1, 2011

| Retirement Ages | % of Active Members Retiring within Next Year | | | | | |
|--------------------|--|-------|------------------|---------|-------|------------------|
| | Male | | | Female | | |
| | Normal | Early | Early Rule of 70 | Normal | Early | Early Rule of 70 |
| 45 | | | 0.60% | | | 0.60% |
| 46 | | | 0.60% | | | 0.60% |
| 47 | | | 0.70% | | | 0.70% |
| 48 | | | 0.90% | | | 0.90% |
| 49 | | | 1.10% | | | 1.10% |
| 50 | | 0.50% | 1.80% | | 0.50% | 1.80% |
| 51 | | 0.50% | 2.10% | | 0.50% | 2.10% |
| 52 | | 0.60% | 2.40% | | 0.60% | 2.40% |
| 53 | | 0.70% | 3.50% | | 0.70% | 3.50% |
| 54 | | 0.90% | 3.90% | | 0.90% | 3.90% |
| 55 | | 1.50% | 6.30% | | 1.50% | 6.30% |
| 56 | | 2.10% | 6.90% | | 2.10% | 6.90% |
| 57 | | 2.10% | 9.80% | | 2.10% | 9.80% |
| 58 | | 2.90% | 11.10% | | 2.90% | 11.10% |
| 59 | | 3.90% | 13.70% | | 3.90% | 13.70% |
| 60 | 10.80% | | | 10.80% | | |
| 61 | 10.10% | | | 10.50% | | |
| 62 | 15.50% | | | 13.90% | | |
| 63 | 16.10% | | | 13.60% | | |
| 64 | 13.50% | | | 14.30% | | |
| 65 | 17.10% | | | 19.20% | | |
| 66 | 24.80% | | | 24.00% | | |
| 67 | 23.10% | | | 23.70% | | |
| 68 | 19.80% | | | 20.20% | | |
| 69 | 18.80% | | | 20.10% | | |
| 70 | 100.00% | | | 100.00% | | |
| Ref. | 3082 | 3084 | 3085 | 3083 | 3084 | 3085 |

Valuation Assumptions

Employees (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

For Members Hired on or After July 1, 2011

| Retirement Ages | % of Active Members Retiring within Next Year | | | |
|--------------------|--|-------|--------|-------|
| | Male | | Female | |
| | Normal | Early | Normal | Early |
| 60 | | 10.8% | | 10.8% |
| 61 | | 10.1% | | 10.5% |
| 62 | | 15.5% | | 13.9% |
| 63 | | 16.1% | | 13.6% |
| 64 | | 13.5% | | 14.3% |
| 65 | 45.0% | | 44.0% | |
| 66 | 45.0% | | 44.0% | |
| 67 | 23.0% | | 22.0% | |
| 68 | 21.0% | | 18.0% | |
| 69 | 20.0% | | 19.0% | |
| 70 | 100.0% | | 100.0% | |
| Ref. | 999 | 3082 | 999 | 3083 |
| | 65 | 60 | 65 | 60 |

Valuation Assumptions

Employees (Concluded)

Rates of separation from active membership were as shown below (rates do not apply to members eligible for normal retirement and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

| Sample Ages | Years of Service | % of Active Members Separating within Next Year | |
|----------------|---------------------|--|--------|
| | | Male | Female |
| | 0 | 27.00% | 27.00% |
| | 1 | 21.00% | 21.00% |
| | 2 | 15.00% | 15.00% |
| | 3 | 12.00% | 12.00% |
| | 4 | 10.00% | 10.00% |
| 25 | 5+ | 8.26% | 8.26% |
| 30 | | 6.84% | 6.84% |
| 35 | | 5.74% | 5.74% |
| 40 | | 4.97% | 4.97% |
| 45 | | 4.39% | 4.39% |
| 50 | | 3.81% | 3.81% |
| 55 | | 3.48% | 3.48% |
| 60 | | 3.23% | 3.23% |
| Ref. | | 37 | 37 |
| | | 1.29 | 1.29 |
| | | 1269 | 1269 |

Rates of disability among active members. 60% are assumed to be ordinary disability and 40% are assumed to be accidental disability.

| Sample Ages | % of Active Members Becoming Disabled within Next Year | |
|----------------|--|--------|
| | Men | Women |
| 20 | 0.000% | 0.000% |
| 25 | 0.011% | 0.011% |
| 30 | 0.014% | 0.014% |
| 35 | 0.018% | 0.018% |
| 40 | 0.038% | 0.038% |
| 45 | 0.072% | 0.072% |
| 50 | 0.150% | 0.150% |
| 55 | 0.281% | 0.281% |
| Ref | 19 | 19 |
| | 0.60 | 0.60 |

Valuation Assumptions

Teachers

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefits will be based.

| Salary Increase Assumptions for an Individual Member | | | |
|---|----------------------------------|---------------------------|-------------------------------|
| Service Index | Merit & Seniority | Base (Economy) | Increase Next Year |
| 1 | 8.00% | 2.75% | 10.75% |
| 2 | 8.00% | 2.75% | 10.75% |
| 3 | 4.00% | 2.75% | 6.75% |
| 4 | 3.50% | 2.75% | 6.25% |
| 5 | 3.25% | 2.75% | 6.00% |
| 6 | 3.00% | 2.75% | 5.75% |
| 7 | 2.75% | 2.75% | 5.50% |
| 8 | 2.50% | 2.75% | 5.25% |
| 9 | 2.25% | 2.75% | 5.00% |
| 10 | 2.00% | 2.75% | 4.75% |
| 11 | 1.75% | 2.75% | 4.50% |
| 12 | 1.50% | 2.75% | 4.25% |
| 13 | 1.25% | 2.75% | 4.00% |
| 14 | 1.00% | 2.75% | 3.75% |
| 15 | 1.00% | 2.75% | 3.75% |
| 16 | 1.00% | 2.75% | 3.75% |
| 17 | 1.00% | 2.75% | 3.75% |
| 18 | 1.00% | 2.75% | 3.75% |
| 19 | 1.00% | 2.75% | 3.75% |
| 20 | 1.00% | 2.75% | 3.75% |
| 21 | 1.00% | 2.75% | 3.75% |
| 22 | 1.00% | 2.75% | 3.75% |
| 23 | 1.00% | 2.75% | 3.75% |
| 24 | 1.00% | 2.75% | 3.75% |
| 25 | 1.00% | 2.75% | 3.75% |
| Ref: | 854 - -2.75% | | |

The Teachers' active head count is assumed to decline 0.50% per year. The open group payroll growth assumption is consequently 2.25% per year (2.75% - 0.50%).

Valuation Assumptions

Teachers (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

For Members Hired Prior to July 1, 2011

| Retirement Ages | % of Active Members Retiring within Next Year | | | | | |
|--------------------|--|-------|------------------|---------|-------|------------------|
| | Male | | | Female | | |
| | Normal | Early | Early Rule of 70 | Normal | Early | Early Rule of 70 |
| 45 | | | 0.60% | | | 0.60% |
| 46 | | | 0.60% | | | 0.60% |
| 47 | | | 0.60% | | | 0.60% |
| 48 | | | 0.60% | | | 0.60% |
| 49 | | | 0.60% | | | 0.60% |
| 50 | | 0.40% | 0.80% | | 0.40% | 0.80% |
| 51 | | 0.50% | 1.00% | | 0.50% | 1.00% |
| 52 | | 0.60% | 1.20% | | 0.60% | 1.20% |
| 53 | | 0.70% | 0.90% | | 0.70% | 0.90% |
| 54 | | 1.00% | 1.90% | | 1.00% | 1.90% |
| 55 | | 1.50% | 4.80% | | 1.50% | 4.80% |
| 56 | | 2.00% | 6.60% | | 2.00% | 6.60% |
| 57 | | 2.90% | 9.00% | | 2.90% | 9.00% |
| 58 | | 4.30% | 12.00% | | 4.30% | 12.00% |
| 59 | | 6.80% | 15.90% | | 6.80% | 15.90% |
| 60 | 16.00% | | | 13.00% | | |
| 61 | 16.00% | | | 14.00% | | |
| 62 | 20.00% | | | 18.00% | | |
| 63 | 16.00% | | | 19.00% | | |
| 64 | 20.00% | | | 19.00% | | |
| 65 | 24.50% | | | 28.00% | | |
| 66 | 32.00% | | | 35.00% | | |
| 67 | 28.00% | | | 32.00% | | |
| 68 | 28.00% | | | 28.00% | | |
| 69 | 28.00% | | | 30.00% | | |
| 70 | 100.00% | | | 100.00% | | |
| Ref. | 3086 | 3088 | 3089 | 3087 | 3088 | 3089 |



Valuation Assumptions

Teachers (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

For Members Hired on or After July 1, 2011

| Retirement Ages | % of Active Members Retiring within Next Year | | | |
|--------------------|--|-------|--------|-------|
| | Male | | Female | |
| | Normal | Early | Normal | Early |
| 60 | | 16% | | 13% |
| 61 | | 16% | | 14% |
| 62 | | 20% | | 18% |
| 63 | | 16% | | 19% |
| 64 | | 20% | | 19% |
| 65 | 58% | | 56% | |
| 66 | 58% | | 56% | |
| 67 | 25% | | 27% | |
| 68 | 25% | | 27% | |
| 69 | 25% | | 27% | |
| 70 | 100% | | 100% | |
| Ref. | 999 | 3086 | 999 | 3087 |
| | 65 | 60 | 65 | 60 |

Valuation Assumptions

Teachers (Concluded)

Rates of separation from active membership were as shown below (rates do not apply to members eligible for normal retirement and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

| Sample Ages | Years of Service | % of Active Members Separating within Next Year | |
|----------------|---------------------|--|--------|
| | | Male | Female |
| | 0 | 25.0% | 25.0% |
| | 1 | 15.0% | 15.0% |
| | 2 | 12.0% | 12.0% |
| | 3 | 10.0% | 10.0% |
| | 4 | 8.0% | 8.0% |
| 25 | 5+ | 7.7% | 7.7% |
| 30 | | 6.0% | 6.0% |
| 35 | | 4.6% | 4.6% |
| 40 | | 3.7% | 3.7% |
| 45 | | 2.8% | 2.8% |
| 50 | | 2.4% | 2.4% |
| 55 | | 2.3% | 2.3% |
| 60 | | 2.3% | 2.3% |
| Ref. | | 870 | 870 |
| | | 1.10 | 1.10 |
| | | 81 | 81 |

Rates of disability among active members. 80% percent are assumed to be ordinary disability and 20% percent are assumed to be accidental disability.

| Sample Ages | % of Active Members Becoming Disabled within Next Year | |
|----------------|--|--------|
| | Male | Female |
| 20 | 0.000% | 0.000% |
| 25 | 0.004% | 0.004% |
| 30 | 0.005% | 0.005% |
| 35 | 0.006% | 0.006% |
| 40 | 0.013% | 0.013% |
| 45 | 0.024% | 0.024% |
| 50 | 0.050% | 0.050% |
| 55 | 0.094% | 0.094% |
| Ref. | 19 | 19 |
| | 0.20 | 0.20 |

Valuation Assumptions

Police

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefits will be based.

| Salary Increase Assumptions for an Individual Member | | | |
|---|----------------------------------|---------------------------|-------------------------------|
| Service Index | Merit & Seniority | Base (Economy) | Increase Next Year |
| 1 | 25.00% | 2.75% | 27.75% |
| 2 | 19.00% | 2.75% | 21.75% |
| 3 | 6.00% | 2.75% | 8.75% |
| 4 | 4.50% | 2.75% | 7.25% |
| 5 | 3.50% | 2.75% | 6.25% |
| 6 | 2.75% | 2.75% | 5.50% |
| 7 | 2.25% | 2.75% | 5.00% |
| 8 | 1.80% | 2.75% | 4.55% |
| 9 | 1.50% | 2.75% | 4.25% |
| 10 | 1.50% | 2.75% | 4.25% |
| 11 | 1.50% | 2.75% | 4.25% |
| 12 | 1.50% | 2.75% | 4.25% |
| 13 | 1.50% | 2.75% | 4.25% |
| 14 | 1.50% | 2.75% | 4.25% |
| 15 | 1.50% | 2.75% | 4.25% |
| 16 | 1.50% | 2.75% | 4.25% |
| 17 | 1.50% | 2.75% | 4.25% |
| 18 | 1.50% | 2.75% | 4.25% |
| 19 | 1.50% | 2.75% | 4.25% |
| 20 | 1.50% | 2.75% | 4.25% |
| 21 | 1.50% | 2.75% | 4.25% |
| 22 | 1.50% | 2.75% | 4.25% |
| 23 | 1.50% | 2.75% | 4.25% |
| 24 | 1.50% | 2.75% | 4.25% |
| 25 | 1.50% | 2.75% | 4.25% |
| Ref: | 855 - -2.75% | | |

Valuation Assumptions

Police (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

(Applying to Eligible Members)

| For Members Hired Prior to July 1, 2011 Who Have Vested Status as of January 1, 2012 | | For Members Hired on or After July 1, 2011 and for Members Hired Prior to July 1, 2011 Who Have Non-Vested Status as of January 1, 2012 | | | | |
|--|--|--|-------------------------|-------------------------|-------------------------|-------------------------|
| Retirement Ages | % of Active Members Retiring within Next Year | Age 46 with 21 Years | Age 47 with 22 Years | Age 48 with 23 Years | Age 49 with 24 Years | Age 50 with 25 Years |
| 45 | 21% | | | | | |
| 46 | 21% | 27% | | | | |
| 47 | 21% | 27% | 31% | | | |
| 48 | 21% | 25% | 31% | 34% | | |
| 49 | 21% | 25% | 31% | 34% | 38% | |
| 50 | 21% | 25% | 27% | 34% | 38% | 40% |
| 51 | 21% | 21% | 27% | 31% | 38% | 40% |
| 52 | 21% | 21% | 21% | 31% | 33% | 40% |
| 53 | 21% | 21% | 21% | 21% | 33% | 38% |
| 54 | 21% | 21% | 21% | 21% | 21% | 38% |
| 55 | 21% | 21% | 21% | 21% | 21% | 21% |
| 56 | 21% | 21% | 21% | 21% | 21% | 21% |
| 57 | 21% | 21% | 21% | 21% | 21% | 21% |
| 58 | 21% | 21% | 21% | 21% | 21% | 21% |
| 59 | 21% | 21% | 21% | 21% | 21% | 21% |
| 60 | 21% | 21% | 21% | 21% | 21% | 21% |
| 61 | 21% | 21% | 21% | 21% | 21% | 21% |
| 62 | 21% | 21% | 21% | 21% | 21% | 21% |
| 63 | 21% | 21% | 21% | 21% | 21% | 21% |
| 64 | 21% | 21% | 21% | 21% | 21% | 21% |
| 65 | 21% | 21% | 21% | 21% | 21% | 21% |
| 66 | 21% | 21% | 21% | 21% | 21% | 21% |
| 67 | 21% | 21% | 21% | 21% | 21% | 21% |
| 68 | 21% | 21% | 21% | 21% | 21% | 21% |
| 69 | 21% | 21% | 21% | 21% | 21% | 21% |
| 70 | 100% | 100% | 100% | 100% | 100% | 100% |
| Ref. | 3090 45 | | | | | |

Valuation Assumptions

Police (Concluded)

Rates of separation from active membership were as shown below (rates do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

| Sample Ages | Years of Service | % of Active Members Separating within Next Year | |
|----------------|---------------------|--|--------|
| | | Male | Female |
| | 0 | 25.00% | 25.00% |
| | 1 | 16.00% | 16.00% |
| | 2 | 10.50% | 10.50% |
| | 3 | 7.00% | 7.00% |
| | 4 | 5.50% | 5.50% |
| 25 | 5+ | 6.58% | 6.58% |
| 30 | | 4.97% | 4.97% |
| 35 | | 3.84% | 3.84% |
| 40 | | 2.99% | 2.99% |
| 45 | | 2.39% | 2.39% |
| 50 | | 2.03% | 2.03% |
| 55 | | 1.88% | 1.88% |
| 60 | | 1.88% | 1.88% |
| Ref. | | 80 | 80 |
| | | 0.47 | 0.47 |
| | | 1270 | 1270 |

Rates of disability among active members. 25% percent are assumed to be ordinary disability and 75% percent are assumed to be accidental disability.

| Sample Ages | % of Active Members Becoming Disabled within Next Year | |
|----------------|---|------------|
| | Ordinary | Accidental |
| 20 | 0.013% | 0.039% |
| 25 | 0.013% | 0.039% |
| 30 | 0.013% | 0.039% |
| 35 | 0.029% | 0.088% |
| 40 | 0.064% | 0.191% |
| 45 | 0.114% | 0.343% |
| 50 | 0.183% | 0.549% |
| 55 | 0.272% | 0.818% |
| Ref. | 35 | 35 |
| | 0.16 | 0.49 |

Valuation Assumptions

Fire

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefits will be based.

| Service Index | Merit & Seniority | Base (Economy) | Increase Next Year |
|---------------|-------------------|----------------|--------------------|
| 1 | 25.00% | 2.75% | 27.75% |
| 2 | 15.00% | 2.75% | 17.75% |
| 3 | 7.00% | 2.75% | 9.75% |
| 4 | 5.00% | 2.75% | 7.75% |
| 5 | 3.75% | 2.75% | 6.50% |
| 6 | 2.50% | 2.75% | 5.25% |
| 7 | 2.00% | 2.75% | 4.75% |
| 8 | 1.50% | 2.75% | 4.25% |
| 9 | 1.00% | 2.75% | 3.75% |
| 10 | 1.00% | 2.75% | 3.75% |
| 11 | 1.00% | 2.75% | 3.75% |
| 12 | 1.00% | 2.75% | 3.75% |
| 13 | 1.00% | 2.75% | 3.75% |
| 14 | 1.00% | 2.75% | 3.75% |
| 15 | 1.00% | 2.75% | 3.75% |
| 16 | 1.00% | 2.75% | 3.75% |
| 17 | 1.00% | 2.75% | 3.75% |
| 18 | 1.00% | 2.75% | 3.75% |
| 19 | 1.00% | 2.75% | 3.75% |
| 20 | 1.00% | 2.75% | 3.75% |
| 21 | 1.00% | 2.75% | 3.75% |
| 22 | 1.00% | 2.75% | 3.75% |
| 23 | 1.00% | 2.75% | 3.75% |
| 24 | 1.00% | 2.75% | 3.75% |
| 25 | 1.00% | 2.75% | 3.75% |
| Ref: | 861 - -2.75% | | |

Valuation Assumptions

Fire (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

(Applying to Eligible Members)

| For Members Hired Prior to July 1, 2011 Who Have Vested Status as of January 1, 2012 | | For Members Hired on or After July 1, 2011 and for Members Hired Prior to July 1, 2011 Who Have Non-Vested Status as of January 1, 2012 | | | | |
|--|---|---|----------------------|----------------------|----------------------|----------------------|
| Retirement Ages | % of Active Members Retiring within Next Year | Age 46 with 21 Years | Age 47 with 22 Years | Age 48 with 23 Years | Age 49 with 24 Years | Age 50 with 25 Years |
| 45 | 11% | | | | | |
| 46 | 11% | 15% | | | | |
| 47 | 11% | 15% | 18% | | | |
| 48 | 11% | 15% | 18% | 22% | | |
| 49 | 11% | 15% | 18% | 22% | 26% | |
| 50 | 16% | 15% | 18% | 21% | 26% | 30% |
| 51 | 16% | 16% | 18% | 21% | 26% | 30% |
| 52 | 16% | 16% | 16% | 21% | 21% | 30% |
| 53 | 16% | 16% | 16% | 16% | 21% | 22% |
| 54 | 16% | 16% | 16% | 16% | 16% | 22% |
| 55 | 19% | 19% | 19% | 19% | 19% | 19% |
| 56 | 19% | 19% | 19% | 19% | 19% | 19% |
| 57 | 19% | 19% | 19% | 19% | 19% | 19% |
| 58 | 19% | 19% | 19% | 19% | 19% | 19% |
| 59 | 19% | 19% | 19% | 19% | 19% | 19% |
| 60 | 23% | 23% | 23% | 23% | 23% | 23% |
| 61 | 23% | 23% | 23% | 23% | 23% | 23% |
| 62 | 23% | 23% | 23% | 23% | 23% | 23% |
| 63 | 23% | 23% | 23% | 23% | 23% | 23% |
| 64 | 23% | 23% | 23% | 23% | 23% | 23% |
| 65 | 28% | 28% | 28% | 28% | 28% | 28% |
| 66 | 28% | 28% | 28% | 28% | 28% | 28% |
| 67 | 28% | 28% | 28% | 28% | 28% | 28% |
| 68 | 28% | 28% | 28% | 28% | 28% | 28% |
| 69 | 28% | 28% | 28% | 28% | 28% | 28% |
| 70 | 100% | 100% | 100% | 100% | 100% | 100% |
| Ref. | 3091 | | | | | |
| | 45 | | | | | |

Valuation Assumptions

Fire (Concluded)

Rates of separation from active membership were as shown below (rates do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

| Sample Ages | Years of Service | % of Active Members Separating within Next Year | |
|----------------|---------------------|--|--------|
| | | Male | Female |
| | 0 | 7.25% | 7.25% |
| | 1 | 5.00% | 5.00% |
| | 2 | 2.50% | 2.50% |
| | 3 | 2.00% | 2.00% |
| | 4 | 1.50% | 1.50% |
| 25 | 5 & Over | 1.15% | 1.15% |
| 30 | | 1.15% | 1.15% |
| 35 | | 1.15% | 1.15% |
| 40 | | 1.15% | 1.15% |
| 45 | | 1.15% | 1.15% |
| 50 | | 1.15% | 1.15% |
| 55 | | 1.15% | 1.15% |
| 60 | | 1.15% | 1.15% |
| Ref. | | 151 | 151 |
| | | 1.15 | 1.15 |
| | | 1271 | 1271 |

Rates of disability among active members. 40% percent are assumed to be ordinary disability and 60% percent are assumed to be accidental disability.

| Sample Ages | % of Active Members Becoming Disabled within Next Year | |
|----------------|---|------------|
| | Ordinary | Accidental |
| 20 | 0.029% | 0.043% |
| 25 | 0.042% | 0.063% |
| 30 | 0.051% | 0.076% |
| 35 | 0.062% | 0.093% |
| 40 | 0.085% | 0.127% |
| 45 | 0.125% | 0.187% |
| 50 | 0.182% | 0.274% |
| 55 | 0.275% | 0.413% |
| Ref | 3 | 3 |
| | 0.24 | 0.36 |

Valuation Assumptions

Healthy Mortality

The standard mortality tables for death after retirement are the Pub-2010 Healthy Retiree Mortality Tables with credibility adjustments for each group (Police and Fire combined) and projected fully generational mortality improvements using Scale MP-2019.

The applicable published healthy mortality tables for each valuation group are shown below.

Employees: *PubG-2010 amount-weighted Healthy Retiree General Mortality Tables*
Teachers: *PubT-2010 amount-weighted Healthy Retiree Teachers Mortality Tables*
Police and Fire: *PubS-2010 amount-weighted Healthy Retiree Safety Mortality Tables*

This assumption is used to measure the probabilities of each benefit payment being made after retirement.

Sample rates of mortality and future life expectancy years are shown in the following tables.

Employees

| Sample Attained Ages | Probability of Dying Next Year* | | Future Life Expectancy (years)* | |
|----------------------------|------------------------------------|--------|------------------------------------|--------|
| | Men | Women | Men | Women |
| 35 | 0.068% | 0.034% | 51.10 | 53.54 |
| 40 | 0.083% | 0.046% | 45.82 | 48.20 |
| 45 | 0.113% | 0.070% | 40.57 | 42.89 |
| 50 | 0.281% | 0.233% | 35.44 | 37.69 |
| 55 | 0.426% | 0.327% | 30.55 | 32.74 |
| 60 | 0.648% | 0.446% | 25.84 | 27.91 |
| 65 | 0.932% | 0.646% | 21.35 | 23.21 |
| 70 | 1.442% | 1.049% | 17.09 | 18.71 |
| 75 | 2.459% | 1.876% | 13.14 | 14.49 |
| 80 | 4.434% | 3.451% | 9.67 | 10.73 |
| Ref: | 2705 | x 1.01 | 2706 | x 1.09 |

* Applicable to calendar year 2020. Rates and life expectancy in future years are determined by the MP-2019 projection scale. The rates shown include the credibility adjustment for each member classification.

Valuation Assumptions

Teachers

| Sample Attained Ages | Probability of Dying Next Year* | | Future Life Expectancy (years)* | | | |
|-------------------------|------------------------------------|--------|------------------------------------|-------|---|------|
| | Men | Women | Men | Women | | |
| 35 | 0.044% | 0.028% | 53.61 | 55.69 | | |
| 40 | 0.053% | 0.038% | 48.32 | 50.38 | | |
| 45 | 0.070% | 0.050% | 43.05 | 45.08 | | |
| 50 | 0.109% | 0.082% | 37.81 | 39.81 | | |
| 55 | 0.223% | 0.213% | 32.66 | 34.65 | | |
| 60 | 0.380% | 0.321% | 27.69 | 29.68 | | |
| 65 | 0.610% | 0.453% | 22.91 | 24.84 | | |
| 70 | 1.021% | 0.732% | 18.37 | 20.13 | | |
| 75 | 1.888% | 1.402% | 14.14 | 15.66 | | |
| 80 | 3.607% | 2.788% | 10.39 | 11.66 | | |
| Ref: | 2701 | x | 1.02 | 2702 | x | 1.05 |

Police and Fire

| Sample Attained Ages | Probability of Dying Next Year* | | Future Life Expectancy (years)* | | | |
|-------------------------|------------------------------------|--------|------------------------------------|-------|---|------|
| | Men | Women | Men | Women | | |
| 35 | 0.064% | 0.048% | 51.66 | 53.53 | | |
| 40 | 0.076% | 0.059% | 46.38 | 48.21 | | |
| 45 | 0.119% | 0.085% | 41.15 | 42.92 | | |
| 50 | 0.172% | 0.142% | 35.97 | 37.68 | | |
| 55 | 0.287% | 0.268% | 30.89 | 32.56 | | |
| 60 | 0.508% | 0.471% | 25.99 | 27.66 | | |
| 65 | 0.855% | 0.737% | 21.36 | 23.02 | | |
| 70 | 1.408% | 1.191% | 17.04 | 18.60 | | |
| 75 | 2.473% | 2.076% | 13.07 | 14.51 | | |
| 80 | 4.505% | 3.696% | 9.61 | 10.89 | | |
| Ref: | 2703 | x | 0.96 | 2704 | x | 0.99 |

* Applicable to calendar year 2020. Rates and life expectancy in future years are determined by the MP-2019 projection scale. The rates shown include the credibility adjustment for each member classification.

Valuation Assumptions

Disabled Mortality

Disabled pension mortality is based on the Pub-2010 Disabled Retiree Mortality Tables for males and females with fully generational mortality improvements using Scale MP-2019. Due to limited disabled mortality experience, credibility adjustments were not applied.

The applicable published disabled mortality tables for each valuation group are shown below.

Employees: *PubG-2010 amount-weighted Disabled Retiree General Mortality Tables*
Teachers: *PubT-2010 amount-weighted Disabled Retiree Teachers Mortality Tables*
Police and Fire: *PubS-2010 amount-weighted Disabled Retiree Safety Mortality Tables*

The probabilities of disabled mortality at sample attained ages are as follows:

| Sample Ages | Employees | |
|----------------|--------------------------------------|--------|
| | Probability of Occurrence Next Year* | |
| | Disabled Death | |
| | Men | Women |
| 20 | 0.433% | 0.257% |
| 25 | 0.332% | 0.201% |
| 30 | 0.489% | 0.345% |
| 35 | 0.653% | 0.536% |
| 40 | 0.803% | 0.728% |
| 45 | 1.024% | 0.970% |
| 50 | 1.500% | 1.425% |
| 55 | 2.068% | 1.828% |
| Ref | 2711 | 2712 |
| | 1.00 | 1.00 |

* Applicable to calendar year 2020. Rates and life expectancy in future years are determined by the MP-2019 projection scale.

Valuation Assumptions

Teachers

| Sample Ages | Probability of Occurrence Next Year* | |
|----------------|--------------------------------------|--------|
| | Disabled Death | |
| | Men | Women |
| 20 | 0.433% | 0.257% |
| 25 | 0.332% | 0.201% |
| 30 | 0.489% | 0.345% |
| 35 | 0.653% | 0.536% |
| 40 | 0.803% | 0.728% |
| 45 | 1.024% | 0.970% |
| 50 | 1.500% | 1.425% |
| 55 | 2.068% | 1.828% |
| Ref | 2707 | 2708 |
| | 1.00 | 1.00 |

Police and Fire

| Sample Ages | Probability of Occurrence Next Year* | |
|----------------|--------------------------------------|--------|
| | Disabled Death | |
| | Men | Women |
| 20 | 0.127% | 0.058% |
| 25 | 0.128% | 0.080% |
| 30 | 0.168% | 0.120% |
| 35 | 0.197% | 0.162% |
| 40 | 0.217% | 0.190% |
| 45 | 0.246% | 0.220% |
| 50 | 0.330% | 0.292% |
| 55 | 0.470% | 0.484% |
| Ref | 2709 | 2710 |
| | 1.00 | 1.00 |

* Applicable to calendar year 2020. Rates and life expectancy in future years are determined by the MP-2019 projection scale.

Valuation Assumptions

Pre-Retirement Mortality

For active members dying before retirement, the Pub-2010 Employee Mortality Tables for males and females with fully generational mortality improvements using Scale MP-2019. Due to limited active member mortality experience, credibility adjustments were not applied.

The applicable published disabled mortality tables for each valuation group are shown below.

Employees: *PubG-2010 amount-weighted Employee General Mortality Tables*
Teachers: *PubT-2010 amount-weighted Employee Teachers Mortality Tables*
Police and Fire: *PubS-2010 amount-weighted Employee Safety Mortality Tables*

The probabilities of dying prior to retirement at sample attained ages are as follows:

Employees

| Sample Ages | Probability of Occurrence Next Year* | | | | | |
|----------------|--------------------------------------|---|--------|-------|---|--------|
| | Death Before Retirement | | | | | |
| | Men | | | Women | | |
| 20 | | | 0.039% | | | 0.014% |
| 25 | | | 0.033% | | | 0.011% |
| 30 | | | 0.050% | | | 0.020% |
| 35 | | | 0.067% | | | 0.031% |
| 40 | | | 0.082% | | | 0.042% |
| 45 | | | 0.100% | | | 0.055% |
| 50 | | | 0.139% | | | 0.080% |
| 55 | | | 0.214% | | | 0.129% |
| Ref | 2723 | x | 1.00 | 2724 | x | 1.00 |

* Applicable to calendar year 2020. Rates and life expectancy in future years are determined by the MP-2019 projection scale.

Valuation Assumptions

Teachers

| Sample Ages | Probability of Occurrence Next Year* | | | | | |
|----------------|--------------------------------------|---|-------|--------|---|------|
| | Death Before Retirement | | | | | |
| | Men | | Women | | | |
| 20 | 0.036% | | | 0.014% | | |
| 25 | 0.019% | | | 0.011% | | |
| 30 | 0.030% | | | 0.019% | | |
| 35 | 0.043% | | | 0.027% | | |
| 40 | 0.052% | | | 0.036% | | |
| 45 | 0.068% | | | 0.047% | | |
| 50 | 0.104% | | | 0.070% | | |
| 55 | 0.168% | | | 0.112% | | |
| Ref | 2719 | x | 1.00 | 2720 | x | 1.00 |

Police and Fire

| Sample Ages | Probability of Occurrence Next Year* | | | | | |
|----------------|--------------------------------------|---|-------|--------|---|------|
| | Death Before Retirement | | | | | |
| | Men | | Women | | | |
| 20 | 0.043% | | | 0.018% | | |
| 25 | 0.044% | | | 0.025% | | |
| 30 | 0.057% | | | 0.036% | | |
| 35 | 0.067% | | | 0.048% | | |
| 40 | 0.073% | | | 0.057% | | |
| 45 | 0.083% | | | 0.066% | | |
| 50 | 0.112% | | | 0.088% | | |
| 55 | 0.171% | | | 0.129% | | |
| Ref | 2721 | x | 1.00 | 2722 | x | 1.00 |

* Applicable to calendar year 2020. Rates and life expectancy in future years are determined by the MP-2019 projection scale.

Weighting of Mortality

The weighting of ordinary and accidental deaths by member classification is as follows:

| | Employees | Teachers | Police | Fire |
|------------|-----------|----------|--------|------|
| Ordinary | 98% | 98% | 50% | 50% |
| Accidental | 2% | 2% | 50% | 50% |



Miscellaneous and Technical Assumptions

| | |
|--|--|
| <i>Administrative & Investment Expenses</i> | The investment return assumption is intended to be the return net of investment expenses. Assumed administrative expenses are added to the Normal Cost, and were 0.35% of payroll. |
| <i>Benefit Service</i> | Exact Fractional service is used to determine the amount of benefit payable. |
| <i>COLA</i> | None assumed. |
| <i>Decrement Operation</i> | Disability and turnover decrements do not operate during normal retirement eligibility for Group I and Group II members. They do operate for early retirement for Group I members. |
| <i>Decrement Timing</i> | Normal and early retirement decrements for the Teachers group are assumed to occur at the beginning of the year. All other decrements for all groups were assumed to occur mid-year. |
| <i>Eligibility Testing</i> | Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur. |
| <i>Incidence of Contributions</i> | Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. |
| <i>Liability Adjustments</i> | Normal, early and vesting retirement liabilities are increased by 8.5%, 5.5%, 11.0% and 12.0% for Employees, Teachers, Police and Fire respectively to account for end of career pay increases. Members hired after July 1, 2011 or who have non-vested status as of January 1, 2012 are assumed to have no adjustment for end of career payments. |
| <i>Marriage Assumption</i> | Group I: 55% of males and 55% of females are assumed to be married for purposes of death-in-service benefits. Group II: 65% of males and 65% of females are assumed to be married for purposes of death-in-service and death after retirement benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes. |

Normal Form of Benefit

This valuation assumes that members will elect the normal form of payment. Alternate forms of payment are available and are actuarially adjusted based on the valuation interest and mortality.

Group I: The assumed normal form of benefit is a straight life benefit.

Group II: The assumed normal form of benefit is straight life for single members and joint and 50% survivor for married members.

Option Factors

Annuity values and factors are based on a 6.75% interest rate and the Pub-2010 Healthy Retiree mortality tables for males and females, adjusted for improvements using Scale MP-2019. While the tables used in the valuations are based on generational mortality, a static model with five years of projection was used for purposes of determining the option factors.

Unisex mortality was used based on active male/female blends observed in the June 30, 2019 valuation of 39%/61%, 22%/78%, 87%/13% and 97%/3% for Employees, Teachers, Police and Fire, respectively.

Disabled mortality is based on the Pub-2010 Disabled Retiree mortality tables using a static model with five years of mortality improvement projection.

For the Group I Straight Life factors, the current practice of not reflecting the changing benefit at age 65 is in the factor.

Each option factor is determined on an actuarial equivalent basis using valuation assumptions. No adjustment for optional forms of payment are reflected in the valuation.

Pay Increase Timing

Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

New Entrant Profile

For purposes of projecting the normal cost to the beginning of the rate setting biennium, the new entrant profile is based on actual members with 3-8 years of service on the valuation date.

Service Credit Accruals

It is assumed that members accrue one year of service credit per year.

Service Purchases

One month of service was added to the reported service for all active participants in consideration of potential subsidized service purchases in the future.

Split Benefits

Active members with service in more than one plan are valued as if all service accrued is in their current plan. Split benefits are valued upon retirement, as reported in the data.

Data Adjustments

Active Data

- New active member pays were annualized.
- 90 active records were excluded due to reported pays being \$0.
- 2 active records were excluded due to reported employment service being less than 0.
- 2 active members reported as being vested as of 12/31/2011 were also reported as being hired on or after 7/1/2011. For the purposes of retirement eligibility, it was assumed these members were not hired on or after 7/1/2011.
- Date of birth was adjusted for one active member who was new for the 6/30/2020 valuation.

Deferred Data

- 83 deferred members had a reported accrued benefit of \$0. Prior year reported accrued benefit was used to value 39 of these members and 44 were valued based on the contribution balance.

Retiree Data

- 894 payee records were excluded due to non-blank Benefit Termination Dates.

Medical Subsidy Data

- 357 records were excluded due to non-blank Benefit Termination Dates.

Medical Subsidy

Actual medical subsidy recipients are included in the valuation plus 25% of those who opted-out. For those members reported as eligible in the future but not currently receiving, we assumed that members would commence benefits at age eligibility.

The solvency rates for the medical subsidy benefits were determined to provide an estimated margin of 20% of the benefits (50% for Teachers) by the end of the first year of the biennium and thereafter. The margin is intended to mitigate the risk of insolvency due to adverse experience.

A retired member's medical subsidy amount is provided by System staff. If the member is under the age of 65, the pre-65 subsidy amount used is the amount reported by System staff, and the post-65 subsidy amount is assumed to be at the post-65 rates.

It is assumed that 80% of active married members will have their spouses continue to receive a medical subsidy under the plan.

IRC Section 415(b) and 401(a)(17)

For purposes of the valuation, the limitations under IRC Section 401(a)(17) and 415(b) were not reflected due to immateriality.

Plan Provisions – Group I

| | |
|---------------------------------|--|
| Statute | Amended and Restated under New Hampshire Revised Statutes Annotated (RSA) Chapter 100-A. Most recently amended under legislation passed in the year ending June 30, 2011. |
| Effective Date | July 1, 1967 |
| Plan Year | July 1 through June 30 |
| Type of Plan | Qualified, governmental defined benefit retirement plan; it is a single plan for financial reporting purposes. |
| Eligibility Requirements | Any employee or teacher becomes a Group I member as a condition of employment. Membership is optional for elected officials, officials appointed for fixed terms, unclassified state employees or employees of the general court. |
| Creditable Service | Service measured from date of employment to date of retirement or prior termination plus service credited under one or more of the predecessor systems. |
| Earnable Compensation | <p>For members who have attained vested status prior to January 1, 2012, full base rate of compensation paid plus any overtime pay, holiday and vacation pay, sick pay, longevity or severance pay, cost of living bonus, additional pay for extracurricular and instructional activities or any military differential pay, plus the fair market value of non-cash compensation such as meals or living quarters if subject to federal income tax. Earnable compensation in the final 12 months prior to termination shall be limited to 1 ½ times the higher of the earnable compensation in the 12-month period preceding the final 12 months or the highest compensation year excluding the final 12 months. Earnable compensation is subject to IRC section 401(a)(17) limits. Compensation for extra and special duty, as determined by the employer, shall be included but limited during the highest 3 years of creditable service as provided in paragraph RSA 100-A:1 XVIII as amended.</p> <p>For members who have not attained vested status prior to January 1, 2012, full base rate of compensation paid plus any overtime pay, longevity pay, cost of living bonus, additional pay for extracurricular and instructional activities, and any military differential pay, plus the fair market value of non-cash compensation such as meals or living quarters if subject to federal income tax, but excluding other compensation except supplemental pay paid by the employer while the member is receiving workers' compensation and teacher development pay that is not part of the contracted annual salary. Earnable compensation is subject to IRC section 401(a)(17) limits. Compensation for extra and special duty, as determined by the employer, shall be included but limited during the highest 5 years of creditable service as provided in paragraph RSA 100-A:1 XVIII as amended. Compensation for extra and special duty shall be eliminated for members who commence service on or after July 1, 2011. Earnable compensation shall not include incentives to encourage</p> |

Plan Provisions – Group I

members to retire, severance pay, or end-of-career longevity payments and pay for unused sick or vacation time. Earnable compensation in the final 12 months prior to termination shall be limited to $1\frac{1}{2}$ times the higher of the earnable compensation in the 12-month period preceding the final 12 months or the highest compensation year excluding the final 12 months.

The new definition of earnable compensation is applicable January 1, 2012 for members who have not attained vested status prior to January 1, 2012 and immediately for members who commence service on or after July 1, 2011.

Average Final Compensation

For members who have attained vested status prior to January 1, 2012 – Average annual earnable compensation during the highest 3 years of creditable service.

For members who commence service on or after July 1, 2011 or who have not attained vested status prior to January 1, 2012 – Average annual earnable compensation during the highest 5 years of creditable service.

Service Retirement

Eligibility: Age 60 years (age 65 for members who commence service on or after July 1, 2011).

Benefit: A member annuity that is the actuarial equivalent of the member's accumulated contributions plus a state annuity.

Prior to age 65, the state annuity, together with the member annuity, shall be equal to $1/60^{\text{th}}$ of AFC times creditable service ($1/66^{\text{th}}$ of AFC times creditable service for members who commence service on or after July 1, 2011).

After age 65, the state annuity, together with the member annuity, shall be equal to $1/66^{\text{th}}$ of AFC times creditable service.

Normal Form: Straight life annuity.

Early Retirement

Eligibility: Completion of 20 years of creditable service and age plus service at least 70, or attainment of age 50. (Age 60 with 30 years of creditable service for members who commence service on or after July 1, 2011.)

Benefit: Service Retirement Benefit accrued to date of retirement, reduced for each month prior to age 60 by $1/8$ of 1% if the member has 35 years or more of creditable service, by $1/4$ of 1% if the member has 30 years but less than 35, by $1/3$ of 1% if the member has at least 25 years but not 30, by $5/12$ of 1% if the member has at least 20 years but not 25, and by $5/9$ of 1% if the member has less than 20 years of creditable service.

For members who commence service on or after July 1, 2011, normal retirement benefit is reduced $1/4$ of 1% for each month prior to age 65.

Plan Provisions – Group I

| | |
|----------------------------------|--|
| Ordinary Disability | <p>Eligibility: 10 or more years of creditable service.</p> <p>Benefit: If age 60 or older, the Service Retirement Benefit at attained normal retirement eligibility age as calculated under benefit provisions for members hired prior to July 1, 2011. Under age 60, a member annuity plus state annuity that shall be equal to 1.5% times AFC times years of creditable service. The disability retirement allowance shall not be less than 25% of AFC.</p> |
| Accidental Disability | <p>Eligibility: Permanently disabled in the performance of duty.</p> <p>Benefit: Service Retirement Benefit if at least age 60, not less than 50% of AFC. Under age 60, a member annuity plus state annuity that shall be equal to 50% times AFC.</p> |
| Accidental Death Benefits | <p>Eligibility: Accidental death in the performance of duty.</p> <p>Benefit: 50% times AFC.</p> |
| Ordinary Death Benefits | <p>Eligibility: Death other than accidental death.</p> <p>Benefit: If 10 years creditable service or eligible for service retirement, surviving spouse receives 50% of the service retirement benefit until death or remarriage. If no surviving spouse, designated beneficiary receives a lump sum equal to the greater of \$3,600 or the member's annual compensation.</p> <p>If less than 10 years creditable service and not eligible for service retirement, the member's spouse or designated beneficiary receives a lump sum equal to the greater of \$3,600 or the member's annual compensation.</p> |
| Post Retirement Death | <p>Not applicable.</p> |
| Optional Forms | <p>Each of the following options shall be of equivalent actuarial value to the allowance payable in the absence of election of an option.</p> <p>Option 1. Full cash refund. Option 2. 100% Joint and Survivor. Option 3. 50% Joint and Survivor. Option 4. Other Joint and Survivor.</p> |
| Vested Termination | <p>If a member terminates with less than 10 years of service, the member's accumulated contributions are refunded. If a member terminates with 10 or more years of service, the member either receives a service retirement benefit beginning at any age after age 60 (age 65 for members who commence service on or after July 1, 2011) or a reduced early service retirement benefit beginning at any age after age 50 (age 60 for members who commence service on or after July 1, 2011 and have at least 30 years of creditable service) or the member may apply for a refund of the member's accumulated contributions.</p> |

Plan Provisions – Group I

Maximum Benefit

For members who commenced service prior to July 1, 2009 or have attained vested status prior to January 1, 2012, a member's retirement benefit shall not exceed 100% of the member's highest year of earnable compensation. For members who commenced service on or after July 1, 2009 and have not attained vested status prior to January 1, 2012, a member's retirement benefit shall not exceed the lesser of 85% of the member's highest average final compensation or \$120,000.

Refunds

1. Termination for reasons other than retirement or death and the member has not elected a vested deferred retirement benefit.
2. Upon death in service other than accidental death described above, the member's accumulated contributions are payable to the beneficiary or estate if, at the time of death, the member is not eligible for a service retirement.
3. Upon death prior to age 60 of a member electing vested deferred retirement, the member's accumulated contributions at the time of death are payable to the beneficiary or estate.
4. Upon death of a retired member prior to electing an optional allowance, any excess of the member's accumulated contributions at retirement over the sum of retirement allowance payments received.

Member Contributions

7.0% of earnable compensation. Interest on member contributions shall be 2 percentage points less than either the most recent board of trustees approved assumed rate of return determined under RSA 100-A:16, II (g) or the actual rate of return, whichever is lower.

Employer Contributions

As prescribed in RSA 100-A:16.

Temporary Supplemental Allowances

All System members who retired on or before July 1, 2014, or any beneficiaries of such members receiving a survivorship pension benefit shall receive a one-time 1.5% COLA on the first \$50,000 of an annual pension benefit. The COLA will take effect on the retired member's first anniversary date of retirement occurring after July 1, 2020. The adjustment shall become a permanent addition to the member's base retirement allowance.

Other Ancillary Benefits

There are no ancillary benefits - retirement type benefits not required by statutes but which might be deemed a liability if continued beyond the availability of funding by the current funding source.

Plan Provisions – Group II

| | |
|---------------------------------|---|
| Statute | Amended and Restated under New Hampshire Revised Statutes Annotated (RSA) Chapter 100-A. Most recently amended under legislation passed in the year ending June 30, 2011. |
| Effective Date | July 1, 1967 |
| Plan Year | July 1 through June 30 |
| Type of Plan | Qualified, governmental defined benefit retirement plan; it is a single plan for financial reporting purposes. |
| Eligibility Requirements | Any permanent policeman or permanent fireman becomes a Group II member as a condition of employment. |
| Creditable Service | Service measured from date of employment to date of retirement or prior termination plus service credited under one or more of the predecessor systems. |
| Earnable Compensation | <p>For members who have attained vested status prior to January 1, 2012, full base rate of compensation paid plus any overtime pay, holiday and vacation pay, sick pay, longevity or severance pay, cost of living bonus, additional pay for extracurricular and instructional activities or for other extra or special duty, and other compensation paid to the member by the employer, plus the fair market value of non-cash compensation such as meals or living quarters if subject to federal income tax. Earnable compensation in the final 12 months prior to termination shall be limited to 1 ½ times the higher of the earnable compensation in the 12 month period preceding the final 12 months or the highest compensation year excluding the final 12 months. Earnable compensation is subject to IRC section 401(a)(17) limits. Compensation for extra and special duty, as determined by the employer, shall be included but limited during the highest 3 years of creditable service as provided in paragraph RSA 100-A:1 XVIII as amended.</p> <p>For members who have not attained vested status prior to January 1, 2012, full base rate of compensation paid plus any overtime pay, longevity pay, cost of living bonus, additional pay for extracurricular and instructional activities, and any military differential pay, plus the fair market value of non-cash compensation such as meals or living quarters if subject to federal income tax, but excluding other compensation except supplemental pay paid by the employer while the member is receiving workers' compensation and teacher development pay that is not part of the contracted annual salary. Earnable compensation is subject to IRC section 401(a)(17) limits. Compensation for extra and special duty, as determined by the employer, shall be included but limited during the highest 5 years of creditable service as provided in paragraph RSA 100-A:1 XVIII as amended. Compensation for extra and special duty shall be eliminated for members who commence service on or after July 1, 2011.</p> |

Plan Provisions – Group II

Earnable compensation shall not include incentives to encourage members to retire, severance pay, or end-of-career longevity payments and pay for unused sick or vacation time. Earnable compensation in the final 12 months prior to termination shall be limited to 1 ½ times the higher of the earnable compensation in the 12 month period preceding the final 12 months or the highest compensation year excluding the final 12 months.

The new definition of earnable compensation is applicable January 1, 2012 for members who have not attained vested status prior to January 1, 2012 and immediately for members who commence service on or after July 1, 2011.

Average Final Compensation

For members who have attained vested status prior to January 1, 2012 – Average annual earnable compensation during the highest 3 years of creditable service.

For members who commence service on or after July 1, 2011 or who have not attained vested status prior to January 1, 2012 – Average annual earnable compensation during the highest 5 years of creditable service.

Service Retirement

Eligibility: Age 45 and 20 years of creditable service or age 60 (age 50 with 25 years of creditable service or age 60 for members who commence service on or after July 1, 2011).

Benefit: A member annuity that is the actuarial equivalent of the member's accumulated contributions plus a state annuity.

The state annuity, together with the member annuity, shall be equal to 2-1/2% of AFC times creditable service up to 40 years (2% of AFC times creditable service up to 42.5 years for members who commence service on or after July 1, 2011. However, a member who commenced service on or after July 1, 2011 shall not receive a service retirement allowance until attaining the age of 52.5, but may receive a reduced allowance after age 50 if the member has at least 25 years of creditable service where the allowance shall be reduced, for each month by which the benefit commencement date precedes the month after which the member attains 52.5 years of age, by ¼ of 1%).

Members hired prior to July 1, 2011 who have not attained vested status prior to January 1, 2012 shall be subject to transition provisions for years of service required for regular service retirement, the minimum age for regular service retirement, and the multiplier used to calculate the retirement annuity, which shall be applicable on January 1, 2012. The state annuity, together with the member annuity, shall be equal to the multiplier times AFC times creditable service up to 40.5 years. The transition provisions are provided in the following table.

Plan Provisions – Group II

| Creditable Service on January 1, 2012 | Minimum Years of | Minimum Age Attained | Annuity Multiplier |
|--|---------------------|-------------------------|-----------------------|
| (1) Less than 4 years | 24 Years | Age 49 | 2.1% |
| (2) At least 4 years but less than 6 years | 23 Years | Age 48 | 2.2% |
| (3) At least 6 years but less than 8 years | 22 Years | Age 47 | 2.3% |
| (4) At least 8 years but less than 10 years | 21 Years | Age 46 | 2.4% |

Members who have attained vested status prior to January 1, 2012 who have attained the age of 45 with at least 20 years of creditable service, members who commenced service on or after July 1, 2011 who have attained the age of 50 with at least 25 years of creditable service, and members hired prior to July 1, 2011 who have not attained vested status prior to January 1, 2012 who qualify as provided in the transition provisions shall receive a minimum annual service retirement allowance of \$10,000.

Normal Form: straight life annuity (with surviving spouse's benefit payable as described under post-retirement death benefit).

Ordinary Disability

Eligibility: 10 or more years of creditable service.

Benefit: Service Retirement Benefit. The disability retirement allowance shall not be less than 25% of the member's final compensation at the date of the member's disability.

Accidental Disability

Eligibility: Permanently disabled in the performance of duty.

Benefit: Members who have attained vested status prior to January 1, 2012 are eligible for an accidental disability benefit and shall receive a benefit equal to 2/3 of AFC. If a member has more than 26-2/3 years of service, the member will receive a supplemental disability benefit equal to 2-1/2% of AFC times years of creditable service in excess of 26-2/3 years but not in excess of 40 years.

Members hired prior to July 1, 2011 who have not attained vested status prior to January 1, 2012 are eligible for an accidental disability benefit and shall receive a benefit equal to 2/3 of AFC. The calculation of the supplemental allowance shall be as provided in the transition provisions with the number of years for the supplement adjusted proportionally.

Members who commence service on or after July 1, 2011 are eligible for an accidental disability benefit and shall receive a benefit equal to 2/3 of AFC. If a member has more than 33-1/3 years of service, the member will receive a supplemental disability benefit equal to 2% of AFC times years of creditable service in excess of 33-1/3 years but not in excess of 42.5 years.



Plan Provisions – Group II

Accidental Death Benefits

Eligibility: Accidental death in the performance of duty.

Benefit: 50% times the member's annual rate of earnable compensation at the date of the member's death.

Post Retirement Death

Retired prior to April 1, 1987, benefit payable to surviving spouse until death or remarriage equal to 50% of the member's service (if the member had at least 20 years of creditable service), ordinary disability or accidental disability retirement allowance. Upon the death of a member receiving a service or ordinary disability retirement, a lump sum of \$3,600 is payable also.

Retired on or after April 1, 1987, benefit payable to surviving spouse until death or remarriage equal to 50% of the member's service, ordinary disability or accidental disability retirement allowance plus a lump sum as defined below.

Retired on or after April 1, 1987, but before July 1, 1988, hired before July 1, 1988, lump sum of \$3,600.

Retired on or after July 1, 1988, hired before July 1, 1988, lump sum of \$10,000.

Retired on or after July 1, 1988, hired on or after July 1, 1988 but before July 1, 1993, lump sum of \$3,600.

Optional Forms

Each of the following options shall be of equivalent actuarial value to the straight life allowance payable in the absence of election of an option.

Option 1. Full cash refund.

Option 2. 100% Joint and Survivor.

Option 3. 50% Joint and Survivor.

Option 4. Other Joint and Survivor.

Vested Termination

If a member terminates with less than 10 years of service, the member's accumulated contributions are refunded. If a member terminates with 10 or more years of service, the member either receives his service retirement at the age the member would have attained service or reduced early service retirement eligibility requirement, or age 60 or the member may apply for a refund of accumulated contributions.

Plan Provisions – Group II

Maximum Benefit

For members who commenced service prior to July 1, 2009 or have attained vested status prior to January 1, 2012, a member's retirement benefit shall not exceed 100% of the member's highest year of earnable compensation. For members who commenced service on or after July 1, 2009 and have not attained vested status prior to January 1, 2012, a member's retirement benefit shall not exceed the lesser of 85% of the member's highest average final compensation or \$120,000.

Refunds

1. Termination for reasons other than retirement or death and the member has not elected a vested deferred retirement benefit.
2. Upon death in service other than accidental death described above, the member's accumulated contributions are payable to the beneficiary or estate, if at the time of death, the member is not eligible for a service retirement.
3. Upon death prior to commencement of benefits of a member electing vested deferred retirement, the member's accumulated contributions are payable to the beneficiary or estate at the time of death.
4. Upon death of a survivor of a member retired on accidental disability with spouse receiving accidental disability survivor benefits, the excess of the member's accumulated contributions at retirement over the sum of payments received.
5. Upon death of a retired member prior to electing an optional allowance, any excess of the member's accumulated contributions at retirement over the sum of retirement allowance payments received.

Member Contributions

Fire members: 11.80% of earnable compensation.

Police members: 11.55% of earnable compensation.

Member contributions cease for members who have attained vested status prior to January 1, 2012 with creditable service in excess of 40 years.

Member contributions cease for all other Group II members with creditable service in excess of 42.5 years.

Interest on member contributions shall be 2 percentage points less than either the most recent board of trustees approved assumed rate of return determined under RSA 100-A:16, II(g) or the actual rate of return, whichever is lower.

Employer Contributions

As prescribed in RSA 100-A:16.

Temporary Supplemental Allowances

All System members who retired on or before July 1, 2014, or any beneficiaries of such members receiving a survivorship pension benefit shall receive a one-time 1.5% COLA on the first \$50,000 of an annual pension benefit. The COLA will take effect on the retired member's first anniversary date of retirement occurring after July 1, 2020. The adjustment shall become a permanent addition to the member's base retirement allowance.

Other Ancillary Benefits

There are no ancillary benefits - retirement type benefits not required by statutes but which might be deemed a liability if continued beyond the availability of funding by the current funding source.



History of Recent Changes in Plan Provisions

2019 Legislative Session

House Bill No. 616:

This bill grants a one-time, 1.5% COLA on the first \$50,000 of an annual pension benefit to members who retired on or before July 1, 2014, or any beneficiaries of such member who is receiving a survivorship pension benefit. The COLA will take effect on the retired member's first anniversary date of retirement occurring after July 1, 2020. The adjustment shall become a permanent addition to the member's base retirement allowance.

2014 Legislative Session

House Bill No. 1494:

This bill: (1) adds definitions of terms used in RSA 100-A and clarifies existing definitions; (2) revises the procedure for calculating the cost of purchasing credit for certain types of prior service; (3) clarifies the ability to earn service credit while on a salary continuance plan; (4) corrects an inconsistency in the statute regarding the approval date of the comprehensive annual financial report; (5) adds penalties for employers who fail to remit correct data in a timely manner; and (6) repeals obsolete provisions.

2012 Legislative Session

- (a) Modifies the calculation of Average Final Compensation (AFC) for members not vested prior to Jan. 1, 2012, by changing the "compensation over base pay" factor used in the AFC formula from a dollar average to a percentage average.
- (b) Clarifies the date from which NHRS must begin calculating a 7-year average of Extra or Special Duty Pay for Group II (Police and Fire) members vested prior to Jan. 1, 2012. This change excludes from the calculation any months prior to July 1, 2009, which is when ESDP began to be separately reported to NHRS.
- (c) Clarifies the number of years of creditable service Group II (Police and Fire) members in service prior to July 1, 2011, but not vested prior to Jan. 1, 2012, must have in order to qualify for the supplemental disability benefit available to eligible Accidental Disability retirees.
- (d) Changes the annual effective date of changes to the member interest rate from a fiscal year to a calendar year.
- (e) Clarifies the definition of "compensation over base pay" for members not vested prior to Jan. 1, 2012.
- (f) Clarifies that the maximum benefit limit for members hired before July 1, 2009, is 100 percent of Earnable Compensation and the maximum benefit limit for members hired after that date, and not vested by Jan. 1, 2012, is the lesser of 85 percent of AFC or \$120,000 per year.
- (g) Modifies the definition of "part-time" for NHRS retirees employed by NHRS-participating employers.
- (h) Changes the date by which NHRS Trustees must approve the retirement system's Comprehensive Annual Financial Report from Dec. 1 to Dec. 31 of each year.



History of Recent Changes in Plan Provisions (Continued)

- (i) RSA 100-A:53, II; RSA 100-A:53-e, II; RSA 100-A:16, II(h); and RSA 100-A:16, II(j), relative to the Special Account, are repealed.
- (j) RSA 100-A:16, III-a, commonly known as the employer “spiking” assessment, is repealed.

2011 Legislative Session

Legislation enacted in the 2011 legislative session is summarized below:

House Bill No. 2 as Amended by 2011-2513-CofC:

- (a) Change the definition of Earnable Compensation for active members who begin service on or after July 1, 2011 or who are not in vested status on and after January 1, 2012.
- (b) For active members who commenced service on or after July 1, 2011 or who have non-vested status on or after January 1, 2012 AFC equals the average annual earnable compensation during the highest 5 years of creditable service.
- (c) For members who commenced service on or after July 1, 2009 or are non-vested as of January 1, 2012, a member’s retirement benefit shall not exceed the lesser of 85% of the member’s highest average final compensation or \$120,000.
- (d) Group I members commencing service on or after July 1, 2011 are eligible to retire at age 65 and are eligible for a reduced annuity at age 60 with 30 years of creditable service. Prior to age 65, the state annuity, together with the member annuity, shall be equal to 1/66th of AFC times creditable service reduced for each month prior to the month after the member attains age 65 by 1/4 of 1%. After age 65, the state annuity, together with the member annuity, shall be equal to 1/66th of AFC times creditable service, reduced for each month prior to the month after the member attains age 65 by 1/4 of 1%.
- (e) Group II members commencing service on or after July 1, 2011 are eligible to retire at age 50 with 25 years of creditable service or age 60. The benefit shall be equal to 2% of AFC times creditable service up to 42.5 years. However, a member who commenced service on or after July 1, 2011 shall not receive a service retirement allowance until attaining the age of 52.5, but may receive a reduced allowance after age 50 if the member has at least 25 years of creditable service where the allowance shall be reduced, for each month by which the benefit commencement date precedes the month after which the member attains 52.5 years of age, by ¼ of 1%.
- (f) Group II members hired prior to July 1, 2011 who have non-vested status as of January 1, 2012 shall be subject to transition provisions for years of service required for regular service retirement, the minimum age for regular service retirement, and the multiplier used to calculate the retirement annuity, which shall be applicable on January 1, 2012.

History of Recent Changes in Plan Provisions (Continued)

- (g) Group II members commencing service on or after July 1, 2011 are eligible for an accidental disability benefit and shall receive a benefit equal to 2/3 of AFC. If a member has more than 33-1/3 years of service, the member will receive a supplemental disability benefit equal to 2% of AFC times years of creditable service in excess of 33-1/3 years but not in excess of 42.5 years.
- (h) *Member Contributions*
 - Group I members: 7.0% of earnable compensation.
 - Group II fire members: 11.80% of earnable compensation.
 - Group II police members: 11.55% of earnable compensation.
 - Group II member contributions cease for members who are in vested status before January 1, 2012 with creditable service in excess of 40 years. Member contributions cease for all other Group II members with creditable service in excess of 42.5 years.
- (i) *Medical Subsidy* – After July 1, 2007 and including each July 1, thereafter, the rate payable shall not be increased.
- (j) Interest on the individual accounts of members in the member annuity savings fund shall be credited interest at 2 percentage points less than either the most recent board of trustees approved assumed rate of return determined under RSA 100-A:16, II(h) or the actual rate of return, whichever is lower for the immediately preceding fiscal year as reported in the CAFR as approved and accepted by the board of trustees by December 1, of each year, provided the rate shall not be less than zero.
- (k) Any retired member who is receiving a medical subsidy under RSA 100-A:52 or RSA 100-A:52-a shall be entitled to receive an additional supplemental allowance. The amount of the additional temporary supplemental allowance shall be \$500 for retirees taking a one-person medical benefit and \$1,000 for retirees taking a 2-person medical benefit, paid from the respective component of the reserve for TSAs. The supplemental allowance shall apply only for the fiscal years beginning July 1, 2008 up to and including the fiscal year beginning July 1, 2012.
- (l) Transfer the balance in each special account component (Employees, Teachers, Police and Fire) to the corresponding components of the State annuity accumulation fund except for funds necessary to comply with RSA 100-A:41-d, III as amended.

History of Recent Changes in Plan Provisions (Concluded)

2010 Legislative Session

Legislation enacted in the 2010 legislative session is summarized below:

- (a) **Special Session House Bill No. 1: COLA, TSA approved** - Provides cost-of-living adjustments (COLAs) and temporary supplemental allowances (TSAs) for eligible retirees or beneficiaries;
- (b) **Senate Bill 504: “Spiking” provision deferred** - Extends the effective date of the 2008 legislation creating the so-called “spiking” provision (125% assessment) from July 1, 2010 to July 1, 2011. A study commission continues to evaluate proposals for the assessment methodology;
- (c) **House Bill 1668: State medical subsidy insurance for Group II members** [RSA 21-130] - Requires Group II (Police and Fire) members whose service with a state agency or department began on or after July 1, 2010, complete at least 20 years of creditable service with the state in order to qualify for post-retirement state medical subsidy insurance coverage.

Medical Subsidy Plan Provisions

Subsidy Benefits as of July 1, 2007 and thereafter are as follows:

| | Monthly Amounts | |
|--------|-----------------|----------|
| | Pre-65 | Post-65 |
| Single | \$375.56 | \$236.84 |
| Couple | \$751.12 | \$473.68 |

The above amounts will not increase.

The following Group I members and their qualified spouses are eligible for coverage under the postretirement medical plan:

- Employee and Teacher members of political subdivisions who are eligible to retire as of July 1, 2008, on Service, Early Service or Ordinary Disability, have at least 20 years of credited service as of July 1, 2008 and who actually retire on or before July 1, 2009 would become eligible for the medical subsidy at age 60 with at least 20 years of creditable service; or as early as age 55 with at least 30 years of creditable service.
- Employee and Teacher members of political subdivisions who are eligible to retire as of July 1, 2008, on Vested Deferred retirement and who actually retire on or before July 1, 2009 would become eligible for the medical subsidy at age 60 with at least 20 years of creditable service; or as early as age 55 with at least 30 years of creditable service.
- Employee and Teacher members of political subdivisions who retired on Accidental Disability Retirement on or before July 1, 2004.
- Employee members of the State who retired on or before July 1, 2004, on Service, Ordinary Disability or Vested Deferred Retirement would become eligible for the medical subsidy at age 60 with at least 20 years of creditable service; or as early as age 55 with at least 30 years of creditable service.
- Employee and Teacher members of political subdivisions who are eligible to retire as of July 1, 2008 and who actually retire on or before July 1, 2009, on Service, Early Service, Vested Deferred or Ordinary Disability retirement after completing at least 20 years of creditable service and who subsequently attain age 60 or after completing at least 30 years of creditable service and who subsequently attain age 55.
- Surviving spouses of deceased Employee and Teacher members of political subdivisions who die while in service and would otherwise have been eligible for a medical subsidy benefit, provided that such surviving spouse was covered as the member's spouse in the employer-sponsored plan before the member's death and is entitled to a monthly allowance under Accidental Death, Ordinary Death, or an Optional Allowance.
- Surviving spouses and children of Employee and Teacher members of political subdivisions who die as the natural and proximate result of injuries suffered while in the performance of duty. Eligibility for the medical subsidy ceases when the dependent child attains age 18, or age 23 if attending school on a full-time basis.

Medical Subsidy Plan Provisions (Concluded)

- Surviving spouses and children of Employee members of the State who died as the natural and proximate result of injuries suffered while in the performance of duty. Payment of the subsidy ceases when the dependent child attains age 18 or age 23, if attending school on a full-time basis.
- Vested terminated Employee members of the State (and spouses) who completed at least 20 years of creditable service and prior to July 1, 2004 receives an allowance and who subsequently attains age 60.
- Employee members of the State (and spouses) who retire after completing at least 20 years of creditable service and who subsequently attains age 60 before July 1, 2004 or after completing at least 30 years of creditable service and who subsequently attains age 55 before July 1, 2004.
- Surviving spouses of deceased Employee members of the State who died while in service on or before July 1, 2004, provided that such surviving spouse was covered as the member's spouse in the employer-sponsored plan before the member's death and is entitled to a monthly allowance under Accidental Death, Ordinary Death, or an Optional Allowance.
- Any certifiably dependent child with a disability living in the household and being cared for by the qualified retired member, member's spouse, or qualified surviving spouse would also qualify.

The following Group II members are eligible for the postretirement medical premium subsidy:

- Active or Retired Group II police officer members (or beneficiaries) as of June 30, 2000.
- Active or Retired Group II firefighter members (or beneficiaries) as of June 30, 2000.
- Persons who prior to July 1, 1988 had completed at least 20 years of Group II service and are eligible as of July 1, 1993 for a vested deferred retirement benefit.
- Group II members retired as of July 1, 1991 with a split benefit under RSA 100-A:19-c who have at least 10 years of Group II service.
- Group II members as of June 30, 2005 who subsequently became disabled while in the performance of duty at any time in the future.
- Surviving spouses of deceased Group II members who retired prior to April 1, 1987 and who are not receiving a monthly allowance.

The System subsidy covers the retired member's spouse and any of the retired member's certifiably dependent and disabled children.

It is the legislative intent that future members shall be included only to the extent that the total cost can be terminally funded.

SECTION D

STATISTICAL SECTION

Historical Membership Data - Retired (Dollars in Thousands)

| Fiscal Year | Added to Rolls | | Removed from Rolls | | Rolls End of Year | | Average | % Increase in |
|-------------|----------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|
| | No.** | Annual Allowances* | No. | Annual Allowances | No. | Annual Allowances | Annual Allowances | Average Annual Allowances |
| 2007 | 3,211 | \$ 73,490 | 913 | \$ 12,081 | 21,248 | \$ 357,763 | \$ 16,837 | N/A |
| 2008 | 2,216 | 53,600 | 594 | 10,923 | 22,870 | 400,440 | 17,509 | 4.0 % |
| 2009 | 2,152 | 51,234 | 521 | 8,349 | 24,501 | 443,325 | 18,094 | 3.3 % |
| 2010 | 2,161 | 50,732 | 817 | 12,002 | 25,845 | 482,055 | 18,652 | 3.1 % |
| 2011 | 1,965 | 42,344 | 680 | 10,051 | 27,130 | 514,348 | 18,959 | 1.6 % |
| 2012 | 2,073 | 41,213 | 749 | 11,543 | 28,454 | 544,018 | 19,119 | 0.8 % |
| 2013 | 2,153 | 43,865 | 878 | 14,738 | 29,729 | 573,145 | 19,279 | 0.8 % |
| 2014 | 2,105 | 42,200 | 780 | 12,676 | 31,054 | 602,669 | 19,407 | 0.7 % |
| 2015 # | 2,731 | 54,769 | 2,435 | 20,416 | 31,350 | 637,022 | 20,320 | 4.7 % |
| 2016 | 2,208 | 53,489 | 782 | 12,236 | 32,776 | 678,275 | 20,694 | 1.8 % |
| 2017 | 3,794 | 55,619 | 876 | 20,782 | 35,694 | 713,112 | 19,978 | (3.5)% |
| 2018 | 2,168 | 51,057 | 850 | 14,738 | 37,012 | 749,431 | 20,248 | 1.4 % |
| 2019 | 2,355 | 56,216 | 1,015 | 17,011 | 38,352 | 788,636 | 20,563 | 1.6 % |
| 2020 | 2,222 | 53,529 | 962 | 16,622 | 39,612 | 825,543 | 20,841 | 1.4 % |

* Includes additional COLA allowances. The benefit amounts shown are the monthly benefits as of the valuation date annualized and are not the actual benefits paid during the fiscal year.

** Includes beneficiaries in receipt but excludes deferred vested terminations.

As part of a data cleaning process, some records for individual participants were merged into one record; others were split to reflect split benefits.

Retirees and Beneficiaries Age Distribution Employees

SERVICE RETIREMENTS

| Age Group | Males | | | Females | | |
|--------------|--------------|-----------------------|------------------|--------------|-----------------------|------------------|
| | Number | Amount | Average | Number | Amount | Average |
| 45 - 49 | 19 | \$ 86,030 | \$ 4,528 | 2 | \$ 3,351 | \$ 1,676 |
| 50 - 54 | 84 | 940,769 | 11,200 | 53 | 673,237 | 12,703 |
| 55 - 59 | 205 | 3,588,320 | 17,504 | 259 | 4,737,260 | 18,291 |
| 60 - 64 | 883 | 18,449,326 | 20,894 | 1,325 | 23,039,970 | 17,389 |
| 65 - 69 | 1,743 | 32,810,467 | 18,824 | 2,467 | 35,274,984 | 14,299 |
| 70 - 74 | 1,760 | 29,809,923 | 16,937 | 2,575 | 31,917,937 | 12,395 |
| 75 - 79 | 1,175 | 17,506,760 | 14,899 | 1,615 | 16,696,830 | 10,339 |
| 80 - 84 | 610 | 8,198,540 | 13,440 | 834 | 7,620,415 | 9,137 |
| 85 - 89 | 336 | 4,609,017 | 13,717 | 468 | 4,097,878 | 8,756 |
| 90 - 94 | 120 | 1,512,260 | 12,602 | 212 | 1,618,298 | 7,633 |
| 95 - 99 | 26 | 265,986 | 10,230 | 57 | 473,900 | 8,314 |
| 100 & Over | 3 | 13,905 | 4,635 | 3 | 10,123 | 3,374 |
| TOTAL | 6,964 | \$ 117,791,303 | \$ 16,914 | 9,870 | \$ 126,164,183 | \$ 12,783 |

DISABILITY RETIREMENTS

| Age Group | Males | | | Females | | |
|--------------|------------|---------------------|------------------|------------|---------------------|------------------|
| | Number | Amount | Average | Number | Amount | Average |
| 25 - 29 | | | | 1 | \$ 11,156 | \$ 11,156 |
| 30 - 34 | 1 | \$ 22,032 | \$ 22,032 | | | |
| 35 - 39 | 1 | 13,901 | 13,901 | 2 | 30,555 | 15,278 |
| 40 - 44 | 2 | 18,156 | 9,078 | 8 | 117,762 | 14,720 |
| 45 - 49 | 11 | 203,683 | 18,517 | 10 | 141,408 | 14,141 |
| 50 - 54 | 34 | 508,076 | 14,943 | 29 | 374,528 | 12,915 |
| 55 - 59 | 56 | 874,401 | 15,614 | 69 | 1,018,813 | 14,765 |
| 60 - 64 | 81 | 1,194,530 | 14,747 | 115 | 1,666,923 | 14,495 |
| 65 - 69 | 93 | 1,341,862 | 14,429 | 111 | 1,439,112 | 12,965 |
| 70 - 74 | 73 | 979,889 | 13,423 | 90 | 1,042,461 | 11,583 |
| 75 - 79 | 40 | 611,059 | 15,276 | 51 | 614,874 | 12,056 |
| 80 - 84 | 16 | 178,651 | 11,166 | 19 | 275,854 | 14,519 |
| 85 - 89 | 6 | 77,916 | 12,986 | 5 | 76,570 | 15,314 |
| 90 - 94 | 1 | 17,672 | 17,672 | 3 | 40,221 | 13,407 |
| 95 - 99 | | | | | | |
| 100 & Over | | | | | | |
| TOTAL | 415 | \$ 6,041,828 | \$ 14,559 | 513 | \$ 6,850,237 | \$ 13,353 |



Retirees and Beneficiaries Age Distribution Employees

BENEFICIARIES OF DECEASED MEMBERS

| Age Group | Males | | | Females | | |
|--------------|------------|---------------------|-----------------|--------------|----------------------|------------------|
| | Number | Amount | Average | Number | Amount | Average |
| Under 20 | | | | | | |
| 20 - 24 | 2 | \$ 3,695 | \$ 1,848 | 2 | \$ 6,839 | \$ 3,420 |
| 25 - 29 | 2 | 17,889 | 8,945 | 3 | 10,940 | 3,647 |
| 30 - 34 | 4 | 34,712 | 8,678 | 1 | 1,774 | 1,774 |
| 35 - 39 | 7 | 53,059 | 7,580 | 2 | 6,539 | 3,270 |
| 40 - 44 | 2 | 16,326 | 8,163 | 7 | 36,416 | 5,202 |
| 45 - 49 | 6 | 31,388 | 5,231 | 12 | 62,041 | 5,170 |
| 50 - 54 | 10 | 88,543 | 8,854 | 21 | 166,372 | 7,922 |
| 55 - 59 | 18 | 134,268 | 7,459 | 49 | 507,212 | 10,351 |
| 60 - 64 | 24 | 245,707 | 10,238 | 98 | 1,322,166 | 13,491 |
| 65 - 69 | 49 | 466,428 | 9,519 | 154 | 2,151,969 | 13,974 |
| 70 - 74 | 50 | 408,721 | 8,174 | 223 | 2,806,997 | 12,587 |
| 75 - 79 | 66 | 621,650 | 9,419 | 233 | 2,905,523 | 12,470 |
| 80 - 84 | 44 | 294,213 | 6,687 | 225 | 3,144,035 | 13,973 |
| 85 - 89 | 28 | 209,753 | 7,491 | 189 | 2,117,996 | 11,206 |
| 90 - 94 | 11 | 100,613 | 9,147 | 97 | 1,036,390 | 10,684 |
| 95 - 99 | 2 | 2,779 | 1,390 | 28 | 258,011 | 9,215 |
| 100 & Over | | | | 3 | 35,049 | 11,683 |
| TOTAL | 325 | \$ 2,729,744 | \$ 8,399 | 1,347 | \$ 16,576,269 | \$ 12,306 |

Retirees and Beneficiaries Age Distribution Teachers

SERVICE RETIREMENTS

| Age Group | Males | | | Females | | |
|--------------|--------------|----------------------|------------------|--------------|-----------------------|------------------|
| | Number | Amount | Average | Number | Amount | Average |
| 40 - 44 | | | | 1 | \$ 4,337 | \$ 4,337 |
| 45 - 49 | 1 | \$ 2,306 | \$ 2,306 | | | |
| 50 - 54 | 5 | 91,751 | 18,350 | 23 | 371,060 | 16,133 |
| 55 - 59 | 55 | 1,266,683 | 23,031 | 185 | 4,115,128 | 22,244 |
| 60 - 64 | 294 | 8,397,230 | 28,562 | 1,156 | 29,480,448 | 25,502 |
| 65 - 69 | 800 | 20,183,539 | 25,229 | 2,896 | 67,455,672 | 23,293 |
| 70 - 74 | 1,134 | 27,814,355 | 24,528 | 3,011 | 65,030,059 | 21,597 |
| 75 - 79 | 603 | 14,122,654 | 23,421 | 1,419 | 27,555,834 | 19,419 |
| 80 - 84 | 287 | 7,038,928 | 24,526 | 631 | 12,261,981 | 19,433 |
| 85 - 89 | 165 | 4,128,081 | 25,019 | 334 | 6,655,962 | 19,928 |
| 90 - 94 | 54 | 1,220,572 | 22,603 | 126 | 2,294,910 | 18,214 |
| 95 - 99 | 2 | 48,511 | 24,256 | 36 | 439,075 | 12,197 |
| 100 & Over | | | | 9 | 123,226 | 13,692 |
| TOTAL | 3,400 | \$ 84,314,610 | \$ 24,798 | 9,827 | \$ 215,787,692 | \$ 21,959 |

DISABILITY RETIREMENTS

| Age Group | Males | | | Females | | |
|--------------|-----------|-------------------|------------------|------------|---------------------|------------------|
| | Number | Amount | Average | Number | Amount | Average |
| 40 - 44 | | | | | \$ - | \$ - |
| 45 - 49 | 2 | \$ 30,944 | \$ 15,472 | 5 | 77,507 | 15,501 |
| 50 - 54 | 3 | 69,080 | 23,027 | 5 | 99,203 | 19,841 |
| 55 - 59 | 5 | 106,459 | 21,292 | 23 | 387,859 | 16,863 |
| 60 - 64 | 6 | 85,273 | 14,212 | 25 | 493,082 | 19,723 |
| 65 - 69 | 3 | 43,763 | 14,588 | 29 | 558,344 | 19,253 |
| 70 - 74 | 8 | 136,023 | 17,003 | 29 | 531,167 | 18,316 |
| 75 - 79 | 6 | 126,145 | 21,024 | 19 | 275,616 | 14,506 |
| 80 - 84 | 3 | 56,880 | 18,960 | 12 | 210,855 | 17,571 |
| 85 - 89 | 2 | 41,261 | 20,631 | 4 | 83,639 | 20,910 |
| 90 - 94 | 1 | 10,074 | 10,074 | | | |
| 95 - 99 | | | | 1 | 12,009 | 12,009 |
| 100 & Over | | | | | | |
| TOTAL | 39 | \$ 705,902 | \$ 18,100 | 152 | \$ 2,729,281 | \$ 17,956 |

Retirees and Beneficiaries Age Distribution Teachers

BENEFICIARIES OF DECEASED MEMBERS

| Age Group | Males | | | Females | | |
|--------------|------------|--------------------|-----------------|------------|---------------------|-----------------|
| | Number | Amount | Average | Number | Amount | Average |
| Under 20 | | | | | | |
| 20 - 24 | | \$ 0 | \$ 0 | \$ - | \$ - | |
| 25 - 29 | 3 | 26,981 | 8,994 | 2 | 18,533 | 9,267 |
| 30 - 34 | 1 | 9,582 | 9,582 | 4 | 30,084 | 7,521 |
| 35 - 39 | 1 | 4,741 | 4,741 | 5 | 37,397 | 7,479 |
| 40 - 44 | 4 | 47,089 | 11,772 | 4 | 11,224 | 2,806 |
| 45 - 49 | 5 | 50,845 | 10,169 | | | |
| 50 - 54 | 12 | 145,568 | 12,131 | 5 | 48,569 | 9,714 |
| 55 - 59 | 10 | 91,617 | 9,162 | 7 | 57,255 | 8,179 |
| 60 - 64 | 21 | 343,501 | 16,357 | 27 | 646,098 | 23,930 |
| 65 - 69 | 38 | 664,375 | 17,484 | 63 | 1,166,010 | 18,508 |
| 70 - 74 | 67 | 1,277,199 | 19,063 | 109 | 2,436,203 | 22,350 |
| 75 - 79 | 59 | 836,997 | 14,186 | 100 | 2,538,779 | 25,388 |
| 80 - 84 | 41 | 734,365 | 17,911 | 85 | 2,187,473 | 25,735 |
| 85 - 89 | 20 | 336,893 | 16,845 | 52 | 1,112,677 | 21,398 |
| 90 - 94 | 11 | 202,641 | 18,422 | 17 | 299,524 | 17,619 |
| 95 - 99 | 2 | 31,923 | 15,962 | 5 | 36,663 | 7,333 |
| 100 & Over | | | | | | |
| TOTAL | 295 | \$4,804,317 | \$16,286 | 485 | \$10,626,489 | \$21,910 |

Retirees and Beneficiaries Age Distribution Police

SERVICE RETIREMENTS

| Age Group | Males | | | Females | | |
|--------------|--------------|-----------------------|------------------|------------|----------------------|------------------|
| | Number | Amount | Average | Number | Amount | Average |
| 35 - 39 | | | | 2 | \$ 5,672 | \$ 2,836 |
| 40 - 44 | | | | 4 | 28,216 | 7,054 |
| 45 - 49 | 180 | \$ 9,123,658 | \$ 50,687 | 46 | 1,367,177 | 29,721 |
| 50 - 54 | 366 | 19,751,242 | 53,965 | 87 | 2,507,921 | 28,827 |
| 55 - 59 | 488 | 26,859,147 | 55,039 | 112 | 2,886,351 | 25,771 |
| 60 - 64 | 513 | 24,226,338 | 47,225 | 104 | 2,262,560 | 21,755 |
| 65 - 69 | 421 | 17,426,514 | 41,393 | 91 | 1,737,042 | 19,088 |
| 70 - 74 | 364 | 13,453,722 | 36,961 | 67 | 1,122,725 | 16,757 |
| 75 - 79 | 186 | 5,912,636 | 31,788 | 44 | 579,418 | 13,169 |
| 80 - 84 | 123 | 3,660,474 | 29,760 | 14 | 223,354 | 15,954 |
| 85 - 89 | 53 | 1,295,089 | 24,436 | 11 | 176,758 | 16,069 |
| 90 - 94 | 15 | 426,167 | 28,411 | 2 | 31,834 | 15,917 |
| 95 - 99 | | | | | | |
| 100 & Over | 1 | 47,166 | 47,166 | | | |
| TOTAL | 2,710 | \$ 122,182,153 | \$ 45,086 | 584 | \$ 12,929,028 | \$ 22,139 |

DISABILITY RETIREMENTS

| Age Group | Males | | | Females | | |
|--------------|------------|----------------------|------------------|-----------|---------------------|------------------|
| | Number | Amount | Average | Number | Amount | Average |
| 25 - 29 | | \$ - | \$ - | | | |
| 30 - 34 | 4 | 110,536 | 27,634 | 1 | \$ 9,349 | \$ 9,349 |
| 35 - 39 | 4 | 167,870 | 41,968 | 3 | 87,988 | 29,329 |
| 40 - 44 | 16 | 624,096 | 39,006 | 6 | 215,984 | 35,997 |
| 45 - 49 | 30 | 1,242,867 | 41,429 | 7 | 252,443 | 36,063 |
| 50 - 54 | 52 | 2,137,823 | 41,112 | 5 | 183,384 | 36,677 |
| 55 - 59 | 50 | 1,629,046 | 32,581 | 13 | 439,351 | 33,796 |
| 60 - 64 | 46 | 1,526,293 | 33,180 | 10 | 288,896 | 28,890 |
| 65 - 69 | 37 | 1,171,740 | 31,669 | 6 | 171,365 | 28,561 |
| 70 - 74 | 47 | 1,422,666 | 30,269 | 11 | 263,583 | 23,962 |
| 75 - 79 | 28 | 864,118 | 30,861 | 2 | 48,562 | 24,281 |
| 80 - 84 | 13 | 397,132 | 30,549 | 1 | 12,357 | 12,357 |
| 85 - 89 | 6 | 142,954 | 23,826 | | | |
| 95 - 99 | | | | | | |
| 100 & Over | | | | | | |
| TOTAL | 333 | \$ 11,437,141 | \$ 34,346 | 65 | \$ 1,973,262 | \$ 30,358 |

Retirees and Beneficiaries Age Distribution Police

BENEFICIARIES OF DECEASED MEMBERS

| Age Group | Males | | | Females | | |
|--------------|-----------|-------------------|------------------|------------|---------------------|------------------|
| | Number | Amount | Average | Number | Amount | Average |
| Under 20 | | | | | | |
| 20 - 24 | | | | | | |
| 25 - 29 | 3 | \$ 36,502 | \$ 12,167 | | | |
| 30 - 34 | 1 | 11,314 | 11,314 | 1 | \$ 75,544 | |
| 35 - 39 | 1 | 3,427 | 3,427 | 3 | 22,208 | \$ 7,403 |
| 40 - 44 | | | | 4 | 47,122 | 11,781 |
| 45 - 49 | 1 | 3,427 | 3,427 | 6 | 87,343 | 14,557 |
| 50 - 54 | 4 | 53,388 | 13,347 | 7 | 240,570 | 34,367 |
| 55 - 59 | 2 | 16,824 | 8,412 | 33 | 775,851 | 23,511 |
| 60 - 64 | 4 | 55,144 | 13,786 | 48 | 1,047,481 | 21,823 |
| 65 - 69 | 8 | 135,320 | 16,915 | 66 | 1,174,598 | 17,797 |
| 70 - 74 | 4 | 54,449 | 13,612 | 98 | 1,966,023 | 20,061 |
| 75 - 79 | 2 | 34,094 | 17,047 | 84 | 1,436,994 | 17,107 |
| 80 - 84 | 1 | 6,586 | 6,586 | 66 | 867,970 | 13,151 |
| 85 - 89 | 3 | 21,970 | 7,323 | 48 | 703,406 | 14,654 |
| 90 - 94 | 2 | 20,243 | 10,122 | 22 | 308,986 | 14,045 |
| 95 - 99 | | | | 9 | 123,034 | 13,670 |
| 100 & Over | 1 | 12,498 | 12,498 | 3 | 43,500 | 14,500 |
| TOTAL | 37 | \$ 465,186 | \$ 12,573 | 498 | \$ 8,920,630 | \$ 17,913 |

Retirees and Beneficiaries Age Distribution Fire

SERVICE RETIREMENTS

| Age Group | Males | | | Females | | |
|--------------|--------------|---------------------|-----------------|------------|--------------------|-----------------|
| | Number | Amount | Average | Number | Amount | Average |
| 35 - 39 | | | | 1 | \$ 5,721 | \$ 5,721 |
| 45 - 49 | 30 | \$ 1,538,467 | \$51,282 | 7 | 131,679 | 18,811 |
| 50 - 54 | 125 | 7,143,899 | 57,151 | 21 | 464,871 | 22,137 |
| 55 - 59 | 182 | 11,098,655 | 60,982 | 28 | 529,020 | 18,894 |
| 60 - 64 | 262 | 15,044,990 | 57,424 | 29 | 511,807 | 17,649 |
| 65 - 69 | 266 | 12,874,820 | 48,402 | 32 | 485,798 | 15,181 |
| 70 - 74 | 137 | 5,932,013 | 43,299 | 8 | 162,267 | 20,283 |
| 75 - 79 | 92 | 3,722,614 | 40,463 | 3 | 26,791 | 8,930 |
| 80 - 84 | 59 | 2,013,529 | 34,128 | 3 | 47,821 | 15,940 |
| 85 - 89 | 29 | 836,767 | 28,854 | | | |
| 90 - 94 | 11 | 300,189 | 27,290 | | | |
| 95 - 99 | 3 | 84,680 | 28,227 | | | |
| 100 & Over | | | | | | |
| TOTAL | 1,196 | \$60,590,623 | \$50,661 | 132 | \$2,365,775 | \$17,923 |

DISABILITY RETIREMENTS

| Age Group | Males | | | Females | | |
|--------------|------------|--------------------|-----------------|----------|------------------|-----------------|
| | Number | Amount | Average | Number | Amount | Average |
| 35 - 39 | 1 | \$ 10,482 | \$ 10,482 | | | |
| 40 - 44 | 5 | 194,169 | 38,834 | | | |
| 45 - 49 | 7 | 195,538 | 27,934 | | | |
| 50 - 54 | 10 | 442,610 | 44,261 | 1 | \$ 37,715 | \$ 37,715 |
| 55 - 59 | 17 | 607,143 | 35,714 | 3 | 91,038 | 30,346 |
| 60 - 64 | 15 | 527,210 | 35,147 | 2 | 67,353 | 33,677 |
| 65 - 69 | 16 | 543,150 | 33,947 | | | |
| 70 - 74 | 12 | 377,563 | 31,464 | | | |
| 75 - 79 | 14 | 416,842 | 29,774 | | | |
| 80 - 84 | 11 | 293,255 | 26,660 | | | |
| 85 - 89 | 2 | 48,541 | 24,271 | | | |
| 90 - 94 | 4 | 121,310 | 30,328 | | | |
| 95 - 99 | | | | | | |
| 100 & Over | | | | | | |
| TOTAL | 114 | \$3,777,813 | \$33,139 | 6 | \$196,106 | \$32,684 |

Retirees and Beneficiaries Age Distribution Fire

BENEFICIARIES OF DECEASED MEMBERS

| Age Group | Males | | | Females | | |
|--------------|-----------|------------------|----------------|------------|--------------------|-----------------|
| | Number | Amount | Average | Number | Amount | Average |
| Under 20 | 1 | \$ 5,913 | \$ 5,913 | | | |
| 20 - 24 | | | | | | |
| 25 - 29 | | | | | | |
| 30 - 34 | 1 | 5,913 | 5,913 | 1 | \$ 5,913 | \$ 5,913 |
| 35 - 39 | | | | | | |
| 40 - 44 | | | | | | |
| 45 - 49 | 2 | 26,396 | 13,198 | | | |
| 50 - 54 | 2 | 12,785 | 6,393 | 9 | 246,805 | 27,423 |
| 55 - 59 | | | | 11 | 188,820 | 17,165 |
| 60 - 64 | 2 | 6,780 | 3,390 | 34 | 648,945 | 19,087 |
| 65 - 69 | 1 | 2,783 | 2,783 | 39 | 806,819 | 20,688 |
| 70 - 74 | | | | 53 | 1,122,320 | 21,176 |
| 75 - 79 | | | | 48 | 871,435 | 18,155 |
| 80 - 84 | 1 | 15,853 | 15,853 | 28 | 481,839 | 17,209 |
| 85 - 89 | | | | 33 | 512,376 | 15,527 |
| 90 - 94 | 1 | 25,074 | 25,074 | 32 | 520,310 | 16,260 |
| 95 - 99 | | | | 5 | 69,524 | 13,905 |
| 100 & Over | | | | 1 | 6,801 | 6,801 |
| TOTAL | 11 | \$101,497 | \$9,227 | 294 | \$5,481,907 | \$18,646 |

Active Members by Valuation Division

| Valuation Group | Active Members | Valuation Payroll | Average | | |
|-----------------|----------------|-------------------|---------|----------|----------|
| | | | Age | Service* | Pay |
| Employees: | | | | | |
| Male | 9,656 | \$ 556,121,181 | 48.4 | 11.0 | \$57,593 |
| Female | 14,946 | 718,475,323 | 49.3 | 10.7 | 48,071 |
| Total | 24,602 | 1,274,596,504 | 49.0 | 10.8 | 51,809 |
| Teachers: | | | | | |
| Male | 3,757 | 258,644,060 | 46.1 | 14.3 | 68,843 |
| Female | 14,160 | 902,239,733 | 45.8 | 13.1 | 63,717 |
| Total | 17,917 | 1,160,883,793 | 45.8 | 13.3 | 64,792 |
| Police: | | | | | |
| Male | 3,639 | 282,453,550 | 39.1 | 11.2 | 77,618 |
| Female | 617 | 40,540,559 | 38.6 | 8.4 | 65,706 |
| Total | 4,256 | 322,994,109 | 39.0 | 10.8 | 75,891 |
| Fire: | | | | | |
| Male | 1,656 | 132,923,200 | 41.4 | 13.2 | 80,268 |
| Female | 48 | 3,310,673 | 38.5 | 10.1 | 68,972 |
| Total | 1,704 | 136,233,873 | 41.3 | 13.1 | 79,949 |
| Total: | | | | | |
| Male | 18,708 | 1,230,141,991 | 45.5 | 11.9 | 65,755 |
| Female | 29,771 | 1,664,566,288 | 47.4 | 11.8 | 55,912 |
| Grand Total | 48,479 | \$2,894,708,279 | 46.7 | 11.8 | \$59,711 |

* One month of service was added to the reported service for all active participants in consideration of potential subsidized service purchases in the future.

| Valuation Group | Active Members | Valuation Payroll |
|------------------------|----------------|-------------------|
| Employees: | | |
| State | 9,820 | \$ 580,597,922 |
| Political Subdivisions | 14,782 | \$693,998,582 |
| Subtotal | 24,602 | 1,274,596,504 |
| Teachers: | 17,917 | 1,160,883,793 |
| Police: | | |
| State | 1,106 | 90,112,441 |
| Political Subdivisions | 3,150 | 232,881,668 |
| Subtotal | 4,256 | 322,994,109 |
| Fire: | | |
| State | 66 | 4,395,125 |
| Political Subdivisions | 1,638 | 131,838,748 |
| Subtotal | 1,704 | 136,233,873 |
| Total | 48,479 | \$ 2,894,708,279 |

Active Members Age and Service Distribution

Employees June 30, 2020

| Attained Age | Years of Service to Valuation Date | | | | | | | Totals | |
|-----------------|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|-------------------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus | No. | Valuation Payroll |
| 15-19 | 32 | | | | | | | 32 | \$ 826,687 |
| 20-24 | 630 | 4 | | | | | | 634 | 19,898,601 |
| 25-29 | 1,326 | 164 | 2 | | | | | 1,492 | 58,309,335 |
| 30-34 | 1,194 | 458 | 135 | 2 | | | | 1,789 | 82,971,577 |
| 35-39 | 1,082 | 513 | 420 | 162 | 2 | | | 2,179 | 108,011,747 |
| 40-44 | 977 | 444 | 379 | 351 | 112 | | | 2,263 | 119,451,598 |
| 45-49 | 1,065 | 506 | 462 | 386 | 302 | 86 | 7 | 2,814 | 152,929,826 |
| 50-54 | 1,063 | 598 | 619 | 492 | 359 | 248 | 175 | 3,554 | 195,720,814 |
| 55-59 | 1,013 | 675 | 748 | 742 | 480 | 300 | 424 | 4,382 | 241,919,077 |
| 60-64 | 719 | 553 | 669 | 693 | 412 | 260 | 375 | 3,681 | 196,945,918 |
| 65-69 | 193 | 229 | 262 | 261 | 213 | 94 | 151 | 1,403 | 77,516,943 |
| 70+ | 57 | 45 | 70 | 71 | 56 | 33 | 47 | 379 | 20,094,381 |
| TOTAL | 9,351 | 4,189 | 3,766 | 3,160 | 1,936 | 1,021 | 1,179 | 24,602 | \$ 1,274,596,504 |

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 49.0 years
Service: 10.8 years
Annual Pay: \$51,809

Active Members Age and Service Distribution

Teachers June 30, 2020

| Attained Age | Years of Service to Valuation Date | | | | | | | Totals | |
|-----------------|------------------------------------|--------------|--------------|--------------|--------------|------------|--------------|---------------|-------------------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus | No. | Valuation Payroll |
| 20-24 | 227 | | | | | | | 227 | \$ 8,843,907 |
| 25-29 | 1,086 | 239 | | | | | | 1,325 | 59,068,276 |
| 30-34 | 734 | 969 | 163 | | | | | 1,866 | 96,165,231 |
| 35-39 | 516 | 623 | 969 | 198 | | | | 2,306 | 136,625,015 |
| 40-44 | 470 | 430 | 645 | 956 | 132 | | | 2,633 | 176,408,068 |
| 45-49 | 380 | 380 | 415 | 569 | 662 | 66 | 3 | 2,475 | 170,508,255 |
| 50-54 | 307 | 327 | 443 | 462 | 481 | 332 | 78 | 2,430 | 170,480,107 |
| 55-59 | 176 | 212 | 370 | 420 | 359 | 243 | 394 | 2,174 | 155,750,211 |
| 60-64 | 94 | 113 | 222 | 362 | 330 | 178 | 433 | 1,732 | 129,887,635 |
| 65-69 | 33 | 39 | 87 | 118 | 140 | 78 | 165 | 660 | 50,436,079 |
| 70+ | 2 | 2 | 14 | 17 | 23 | 11 | 20 | 89 | 6,711,009 |
| TOTAL | 4,025 | 3,334 | 3,328 | 3,102 | 2,127 | 908 | 1,093 | 17,917 | \$ 1,160,883,793 |

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 45.8 years
Service: 13.3 years
Annual Pay: \$64,792

Active Members Age and Service Distribution

Police June 30, 2020

| Attained Age | Years of Service to Valuation Date | | | | | | | Totals | |
|-----------------|------------------------------------|------------|------------|------------|------------|------------|-----------|--------------|-----------------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus | No. | Valuation Payroll |
| 15-19 | 3 | | | | | | | 3 | \$ 94,646 |
| 20-24 | 263 | | | | | | | 263 | 11,997,249 |
| 25-29 | 564 | 129 | | | | | | 693 | 41,603,206 |
| 30-34 | 281 | 338 | 96 | | | | | 715 | 49,324,424 |
| 35-39 | 121 | 146 | 297 | 90 | | | | 654 | 51,447,543 |
| 40-44 | 44 | 59 | 123 | 272 | 73 | 1 | | 572 | 50,970,575 |
| 45-49 | 44 | 45 | 97 | 182 | 185 | 44 | | 597 | 53,914,770 |
| 50-54 | 55 | 36 | 40 | 86 | 93 | 60 | 19 | 389 | 33,686,021 |
| 55-59 | 24 | 23 | 35 | 58 | 34 | 26 | 26 | 226 | 18,763,087 |
| 60-64 | 13 | 15 | 10 | 24 | 11 | 8 | 15 | 96 | 7,816,542 |
| 65-69 | 2 | 5 | 10 | 12 | 4 | 1 | 3 | 37 | 2,623,253 |
| 70+ | 2 | 1 | 2 | | 2 | 2 | 2 | 11 | 752,793 |
| TOTAL | 1,416 | 797 | 710 | 724 | 402 | 142 | 65 | 4,256 | \$ 322,994,109 |

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 39.0 years
Service: 10.8 years
Annual Pay: \$75,891

Active Members Age and Service Distribution

Fire June 30, 2020

| Attained Age | Years of Service to Valuation Date | | | | | | | Totals | |
|-----------------|------------------------------------|------------|------------|------------|------------|-----------|-----------|--------------|-----------------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus | No. | Valuation Payroll |
| 20-24 | 58 | 1 | | | | | | 59 | \$ 3,221,053 |
| 25-29 | 140 | 44 | | | | | | 184 | 11,152,914 |
| 30-34 | 115 | 102 | 45 | | | | | 262 | 17,654,591 |
| 35-39 | 52 | 83 | 100 | 35 | | | | 270 | 20,356,862 |
| 40-44 | 25 | 26 | 55 | 110 | 34 | | | 250 | 21,111,843 |
| 45-49 | 9 | 12 | 46 | 89 | 72 | 17 | | 245 | 22,159,178 |
| 50-54 | 8 | 7 | 28 | 84 | 58 | 48 | 16 | 249 | 23,040,192 |
| 55-59 | 8 | 4 | 9 | 36 | 26 | 18 | 34 | 135 | 12,729,742 |
| 60-64 | | 5 | 2 | 11 | 9 | 5 | 10 | 42 | 4,029,287 |
| 65-69 | | | | 2 | 1 | | 4 | 7 | 724,944 |
| 70+ | | | 1 | | | | | 1 | 53,267 |
| TOTAL | 415 | 284 | 286 | 367 | 200 | 88 | 64 | 1,704 | \$ 136,233,873 |

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 41.3 years
Service: 13.1 years
Annual Pay: \$79,949

Active Members Age and Service Distribution

**Total
June 30, 2020**

| Attained Age | Years of Service to Valuation Date | | | | | | | Totals | |
|-----------------|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|-------------------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30 Plus | No. | Valuation Payroll |
| 15-19 | 35 | | | | | | | 35 | \$ 921,333 |
| 20-24 | 1,178 | 5 | | | | | | 1,183 | 43,960,810 |
| 25-29 | 3,116 | 576 | 2 | | | | | 3,694 | 170,133,731 |
| 30-34 | 2,324 | 1,867 | 439 | 2 | | | | 4,632 | 246,115,823 |
| 35-39 | 1,771 | 1,365 | 1,786 | 485 | 2 | | | 5,409 | 316,441,167 |
| 40-44 | 1,516 | 959 | 1,202 | 1,689 | 351 | 1 | | 5,718 | 367,942,084 |
| 45-49 | 1,498 | 943 | 1,020 | 1,226 | 1,221 | 213 | 10 | 6,131 | 399,512,029 |
| 50-54 | 1,433 | 968 | 1,130 | 1,124 | 991 | 688 | 288 | 6,622 | 422,927,134 |
| 55-59 | 1,221 | 914 | 1,162 | 1,256 | 899 | 587 | 878 | 6,917 | 429,162,117 |
| 60-64 | 826 | 686 | 903 | 1,090 | 762 | 451 | 833 | 5,551 | 338,679,382 |
| 65-69 | 228 | 273 | 359 | 393 | 358 | 173 | 323 | 2,107 | 131,301,219 |
| 70+ | 61 | 48 | 87 | 88 | 81 | 46 | 69 | 480 | 27,611,450 |
| TOTAL | 15,207 | 8,604 | 8,090 | 7,353 | 4,665 | 2,159 | 2,401 | 48,479 | \$ 2,894,708,279 |

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 46.7 years
Service: 11.8 years
Annual Pay: \$59,711

Historical Membership Data - Active

Total

| Valuation Date | Active Members | | Covered Payroll | | Average Salary | | Average | |
|----------------|----------------|---------|------------------|---------|----------------|---------|---------|---------|
| | No. | % Inc.* | \$ Amount | % Inc.* | \$ Amount | % Inc.* | Age | Service |
| 2007 | 50,802 | (0.3%) | \$ 2,195,339,382 | 3.6% | \$ 43,214 | 3.9% | 45.6 | 10.6 |
| 2008 | 50,988 | 0.2% | 2,308,320,669 | 5.1% | 45,272 | 4.8% | 45.7 | 10.6 |
| 2009 | 51,032 | 0.0% | 2,448,287,042 | 6.1% | 47,976 | 6.0% | 46.0 | 10.9 |
| 2010 | 50,467 | (0.6%) | 2,481,383,620 | 1.4% | 49,168 | 2.5% | 46.3 | 11.1 |
| 2011 | 49,738 | (0.7%) | 2,517,779,470 | 1.5% | 50,621 | 3.0% | 46.6 | 11.4 |
| 2012 | 48,625 | (1.1%) | 2,487,757,437 | (1.2%) | 51,162 | 1.1% | 46.9 | 11.8 |
| 2013 | 48,688 | 0.1% | 2,501,741,708 | 0.6% | 51,383 | 0.4% | 47.0 | 12.0 |
| 2014 | 48,307 | (0.4%) | 2,507,898,809 | 0.2% | 51,916 | 1.0% | 47.1 | 12.1 |
| 2015 | 47,812 | (0.5%) | 2,575,031,210 | 2.7% | 53,857 | 3.7% | 47.0 | 12.1 |
| 2016 | 48,069 | 0.3% | 2,601,403,606 | 1.0% | 54,118 | 0.5% | 46.9 | 12.1 |
| 2017 | 47,886 | (0.2%) | 2,667,611,532 | 2.5% | 55,708 | 2.9% | 46.9 | 12.1 |
| 2018 | 48,121 | 0.2% | 2,752,235,069 | 3.2% | 57,194 | 2.7% | 46.8 | 12.0 |
| 2019 | 48,288 | 0.2% | 2,825,006,022 | 2.6% | 58,503 | 2.3% | 46.7 | 11.9 |
| 2020 | 48,479 | 0.2% | 2,894,708,279 | 2.5% | 59,711 | 2.1% | 46.7 | 11.8 |

* Average annual increase.

By Valuation Group (Valuation Payroll in Thousands)

| | Fiscal Year | Active Members [#] | Valuation Payroll | Average Compensation | % Inc.* |
|-----------|-------------|-----------------------------|-------------------|----------------------|---------|
| Employees | 2020 | 24,602 | \$1,274,597 | \$51,809 | 2.60 % |
| Teachers | | 17,917 | 1,160,884 | 64,792 | 1.16 % |
| Police | | 4,256 | 322,994 | 75,891 | 2.22 % |
| Fire | | 1,704 | 136,234 | 79,949 | 2.66 % |
| Total | | 48,479 | \$2,894,709 | \$59,711 | 2.06 % |

| | Fiscal Year | Active Members [#] | Valuation Payroll | Average Compensation | % Inc.* |
|-----------|-------------|-----------------------------|-------------------|----------------------|---------|
| Employees | 2019 | 24,654 | \$1,244,930 | \$50,496 | 2.70 % |
| Teachers | | 17,730 | 1,135,607 | 64,050 | 1.86 % |
| Police | | 4,216 | 313,016 | 74,245 | 3.11 % |
| Fire | | 1,688 | 131,453 | 77,874 | 0.51 % |
| Total | | 48,288 | \$2,825,006 | \$58,503 | 2.29 % |

[#] Excludes temporary inactive members.

* Average annual increase.



Summary of Membership Data by Category

| | June 30 | | | | | | | | | |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 |
| Active Members | | | | | | | | | | |
| Number | 48,479 | 48,288 | 48,121 | 47,886 | 48,069 | 47,812 | 48,307 | 48,688 | 48,625 | 49,738 |
| Average age (years) | 46.7 | 46.7 | 46.8 | 46.9 | 46.9 | 47.0 | 47.1 | 47.0 | 46.9 | 46.6 |
| Average service* (years) | 11.8 | 11.9 | 12.0 | 12.1 | 12.1 | 12.2 | 12.1 | 12.0 | 11.8 | 11.4 |
| Average salary | \$59,711 | \$58,503 | \$57,194 | \$55,708 | \$54,118 | \$53,857 | \$51,916 | \$51,383 | \$51,162 | \$50,621 |
| Total payroll supplied, annualized | \$ 2,894,708,279 | \$ 2,825,006,022 | \$ 2,752,235,069 | \$ 2,667,611,532 | \$ 2,601,403,606 | \$ 2,575,031,210 | \$ 2,507,898,809 | \$ 2,501,741,708 | \$ 2,487,757,437 | \$ 2,517,779,470 |
| Vested Inactive Members | | | | | | | | | | |
| Number | 2,661 | 2,552 | 2,420 | 2,281 | 1,785 | 1,999 | 1,297 | 1,261 | 1,372 | 1,496 |
| Average age (years) | 52.2 | 52.1 | 52.2 | 51.8 | 52.1 | 51.7 | 52.3 | 52.3 | 51.5 | 51.5 |
| Non-Vested Inactive Members | | | | | | | | | | |
| Number | 13,760 | 12,530 | 11,454 | 10,477 | 9,528 | 8,690 | 8,102 | 7,273 | 7,041 | 5,677 |
| Service Retirees | | | | | | | | | | |
| Number | 34,683 | 33,573 | 32,385 | 31,186 | 28,403 | 27,114 | 26,958 | 25,785 | 24,622 | 23,390 |
| Average age (years) | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 69.0 | 69.0 | 69.2 | 69.0 | 69.0 |
| Total annual benefits | \$ 742,125,367 | \$ 708,597,132 | \$ 673,359,556 | \$ 639,679,378 | \$ 608,332,888 | \$ 570,043,185 | \$ 537,980,513 | \$ 511,111,807 | \$ 484,434,150 | \$ 457,444,791 |
| Average annual benefit | \$ 21,397 | \$ 21,106 | \$ 20,792 | \$ 20,512 | \$ 21,418 | \$ 21,024 | \$ 19,956 | \$ 19,822 | \$ 19,675 | \$ 19,557 |
| Disability Retirees | | | | | | | | | | |
| Number | 1,637 | 1,627 | 1,616 | 1,600 | 1,600 | 1,586 | 1,561 | 1,558 | 1,542 | 1,511 |
| Average age (years) | 65.0 | 64.6 | 64.2 | 64.0 | 63.7 | 63.4 | 62.0 | 62.0 | 62.0 | 62.0 |
| Total annual benefits | \$ 33,711,570 | \$ 33,041,012 | \$ 32,273,693 | \$ 31,739,977 | \$ 31,124,304 | \$ 30,483,173 | \$ 30,088,288 | \$ 29,774,641 | \$ 29,220,458 | \$ 27,994,176 |
| Average annual benefit | \$ 20,594 | \$ 20,308 | \$ 19,971 | \$ 19,837 | \$ 19,453 | \$ 19,220 | \$ 19,275 | \$ 19,111 | \$ 18,950 | \$ 18,527 |
| Beneficiaries | | | | | | | | | | |
| Number | 3,292 | 3,152 | 3,011 | 2,908 | 2,773 | 2,650 | 2,535 | 2,386 | 2,290 | 2,229 |
| Average age (years) | 74.8 | 74.5 | 74.2 | 73.9 | 73.9 | 73.6 | 73.4 | 73.4 | 73.0 | 73.0 |
| Total annual benefits | \$ 49,706,039 | \$ 46,998,152 | \$ 43,797,864 | \$ 41,692,950 | \$ 38,818,283 | \$ 36,495,210 | \$ 34,600,022 | \$ 32,258,707 | \$ 30,363,269 | \$ 28,908,530 |
| Average annual benefit | \$ 15,099 | \$ 14,911 | \$ 14,546 | \$ 14,337 | \$ 13,999 | \$ 13,772 | \$ 13,649 | \$ 13,520 | \$ 13,259 | \$ 12,969 |
| Total Covered Lives | 104,512 | 101,722 | 99,007 | 96,338 | 92,158 | 89,851 | 88,760 | 86,951 | 85,492 | 84,041 |

* One month of service was added to the reported service for all active participants in consideration of potential subsidized service purchases in the future.



Other Schedules of Interest

Schedule of Average Pension Benefit Payment Amounts as of June 30, 2020

| Service | Employees | | | | | | | Total |
|----------------------------|--------------|---------------|---------------|---------------|---------------|---------------|-----------------|----------------|
| | 0 - 4 yrs.* | 5 - 9 yrs. | 10 - 14 yrs. | 15 - 19 yrs. | 20 - 24 yrs. | 25 - 29 yrs. | 30 or more yrs. | |
| Total annual benefit | \$ 5,341,560 | \$ 10,390,823 | \$ 35,394,289 | \$ 37,291,309 | \$ 46,507,437 | \$ 41,277,305 | \$ 99,950,841 | \$ 276,153,564 |
| Average annual benefit | \$ 3,998 | \$ 5,675 | \$ 7,651 | \$ 11,492 | \$ 14,973 | \$ 20,608 | \$ 30,408 | \$ 14,210 |
| Average monthly benefit | \$ 333 | \$ 473 | \$ 638 | \$ 958 | \$ 1,248 | \$ 1,717 | \$ 2,534 | \$ 1,184 |
| Average final compensation | \$ 47,221 | \$ 44,300 | \$ 43,143 | \$ 49,404 | \$ 52,773 | \$ 60,083 | \$ 68,462 | \$ 52,218 |
| Number of retired members | 1,336 * | 1,831 | 4,626 | 3,245 | 3,106 | 2,003 | 3,287 | 19,434 ** |

* Includes 361 members who did not have service reported.

** Includes 5,944 members who did not have AFC reported.

| Service | Teachers | | | | | | | Total |
|----------------------------|--------------|--------------|---------------|---------------|---------------|---------------|-----------------|----------------|
| | 0 - 4 yrs.* | 5 - 9 yrs. | 10 - 14 yrs. | 15 - 19 yrs. | 20 - 24 yrs. | 25 - 29 yrs. | 30 or more yrs. | |
| Total annual benefit | \$ 1,983,271 | \$ 2,620,731 | \$ 15,413,690 | \$ 26,154,607 | \$ 51,002,783 | \$ 55,538,657 | \$ 166,254,552 | \$ 318,968,291 |
| Average annual benefit | \$ 6,256 | \$ 6,897 | \$ 9,046 | \$ 14,191 | \$ 18,553 | \$ 23,573 | \$ 34,286 | \$ 22,466 |
| Average monthly benefit | \$ 521 | \$ 575 | \$ 754 | \$ 1,183 | \$ 1,546 | \$ 1,964 | \$ 2,857 | \$ 1,872 |
| Average final compensation | \$ 53,539 | \$ 58,164 | \$ 52,193 | \$ 61,708 | \$ 66,165 | \$ 70,452 | \$ 75,239 | \$ 67,196 |
| Number of retired members | 317 * | 380 | 1,704 | 1,843 | 2,749 | 2,356 | 4,849 | 14,198 ** |

* Includes 153 members who did not have service reported.

** Includes 4,610 members who did not have AFC reported.

| Service | Police | | | | | | | Total |
|----------------------------|--------------|--------------|--------------|---------------|---------------|---------------|-----------------|----------------|
| | 0 - 4 yrs.* | 5 - 9 yrs. | 10 - 14 yrs. | 15 - 19 yrs. | 20 - 24 yrs. | 25 - 29 yrs. | 30 or more yrs. | |
| Total annual benefit | \$ 5,576,314 | \$ 3,474,616 | \$ 9,068,645 | \$ 11,674,761 | \$ 66,332,661 | \$ 41,067,863 | \$ 20,712,540 | \$ 157,907,400 |
| Average annual benefit | \$ 12,070 | \$ 16,949 | \$ 19,461 | \$ 28,475 | \$ 39,111 | \$ 57,277 | \$ 76,430 | \$ 37,357 |
| Average monthly benefit | \$ 1,006 | \$ 1,412 | \$ 1,622 | \$ 2,373 | \$ 3,259 | \$ 4,773 | \$ 6,369 | \$ 3,113 |
| Average final compensation | \$ 54,972 | \$ 57,300 | \$ 56,107 | \$ 69,655 | \$ 84,335 | \$ 97,751 | \$ 109,507 | \$ 81,762 |
| Number of retired members | 462 * | 205 | 466 | 410 | 1,696 | 717 | 271 | 4,227 ** |

* Includes 320 members who did not have service reported.

** Includes 1,803 members who did not have AFC reported.

| Service | Fire | | | | | | | Total |
|----------------------------|--------------|------------|--------------|--------------|---------------|---------------|-----------------|---------------|
| | 0 - 4 yrs.* | 5 - 9 yrs. | 10 - 14 yrs. | 15 - 19 yrs. | 20 - 24 yrs. | 25 - 29 yrs. | 30 or more yrs. | |
| Total annual benefit | \$ 2,287,644 | \$ 566,309 | \$ 2,193,509 | \$ 4,139,804 | \$ 22,425,320 | \$ 22,715,691 | \$ 18,185,444 | \$ 72,513,721 |
| Average annual benefit | \$ 14,121 | \$ 15,731 | \$ 21,718 | \$ 28,355 | \$ 35,040 | \$ 52,461 | \$ 77,385 | \$ 41,365 |
| Average monthly benefit | \$ 1,177 | \$ 1,311 | \$ 1,810 | \$ 2,363 | \$ 2,920 | \$ 4,372 | \$ 6,449 | \$ 3,447 |
| Average final compensation | \$ 61,360 | \$ 65,855 | \$ 63,385 | \$ 77,517 | \$ 81,246 | \$ 94,282 | \$ 105,160 | \$ 88,316 |
| Number of retired members | 162 * | 36 | 101 | 146 | 640 | 433 | 235 | 1,753 ** |

* Includes 141 members who did not have service reported.

** Includes 893 members who did not have AFC reported.



Other Schedules of Interest

Schedule of Retired and Vested Members by Type of Benefit

Employees

| June 30, 2020 | | | | | | | | | | | | | | | | | | | |
|---------------------------|---------------------|----------------------|-----|-----|----|----|-------|-------|------------|-------------------|-------|-----|-------|-------|----|----|---|---|--------|
| | | Type of Retirement** | | | | | | | | Option Selected # | | | | | | | | | |
| Amount of Monthly Benefit | Number of Retirees* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | No. Option | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Other& |
| \$1 - \$500 | 5,226 | 4,296 | 48 | 2 | 15 | - | 594 | 271 | 3,170 | 110 | 359 | 135 | 838 | 317 | 13 | 13 | - | - | 271 |
| 501 - 1,000 | 5,906 | 4,471 | 260 | 103 | 13 | 2 | 469 | 588 | 3,272 | 88 | 456 | 133 | 980 | 369 | 14 | 6 | - | - | 588 |
| 1,001 - 1,500 | 3,677 | 2,831 | 85 | 231 | 14 | 4 | 219 | 293 | 1,880 | 61 | 348 | 96 | 700 | 286 | 10 | 3 | - | - | 293 |
| 1,501 - 2,000 | 2,203 | 1,801 | 28 | 103 | 6 | 3 | 126 | 136 | 1,096 | 28 | 218 | 91 | 451 | 173 | 6 | 4 | - | - | 136 |
| 2,001 - 2,500 | 1,362 | 1,182 | 10 | 28 | - | 2 | 85 | 55 | 600 | 11 | 170 | 56 | 335 | 129 | 2 | 4 | - | - | 55 |
| 2,501 - 3,000 | 883 | 781 | 6 | 10 | 2 | 1 | 52 | 31 | 362 | 17 | 122 | 47 | 202 | 100 | 1 | 1 | - | - | 31 |
| 3,001 - 3,500 | 563 | 518 | - | 7 | 2 | - | 22 | 14 | 221 | 5 | 101 | 31 | 135 | 54 | 1 | 1 | - | - | 14 |
| 3,501 - 4,000 | 420 | 392 | 2 | 1 | - | - | 18 | 7 | 157 | 7 | 71 | 31 | 103 | 42 | 2 | - | - | - | 7 |
| Over 4,000 | 596 | 562 | 2 | 2 | 4 | - | 19 | 7 | 224 | 5 | 102 | 46 | 134 | 76 | 1 | 1 | - | - | 7 |
| Totals | 20,836 | 16,834 | 441 | 487 | 56 | 12 | 1,604 | 1,402 | 10,982 | 332 | 1,947 | 666 | 3,878 | 1,546 | 50 | 33 | - | - | 1,402 |

Teachers

| June 30, 2020 | | | | | | | | | | | | | | | | | | | |
|---------------------------|---------------------|----------------------|-----|----|----|---|-----|-------|------------|-------------------|-------|-----|-------|-------|----|----|---|---|--------|
| | | Type of Retirement** | | | | | | | | Option Selected # | | | | | | | | | |
| Amount of Monthly Benefit | Number of Retirees* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | No. Option | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Other& |
| \$1 - \$500 | 1,407 | 1,262 | 1 | - | - | - | 92 | 52 | 716 | 22 | 111 | 42 | 356 | 100 | 3 | 5 | - | - | 52 |
| 501 - 1,000 | 2,381 | 1,724 | 32 | - | 5 | - | 157 | 463 | 1,203 | 35 | 154 | 38 | 387 | 93 | 6 | 2 | - | - | 463 |
| 1,001 - 1,500 | 2,267 | 1,756 | 76 | 3 | 6 | - | 121 | 305 | 1,057 | 40 | 186 | 62 | 465 | 141 | 5 | 6 | - | - | 305 |
| 1,501 - 2,000 | 2,240 | 1,924 | 31 | 4 | 9 | - | 124 | 148 | 1,033 | 43 | 180 | 53 | 557 | 215 | 2 | 9 | - | - | 148 |
| 2,001 - 2,500 | 2,181 | 1,992 | 17 | 10 | - | 1 | 94 | 67 | 949 | 34 | 203 | 82 | 594 | 239 | 5 | 8 | - | - | 67 |
| 2,501 - 3,000 | 1,704 | 1,593 | 8 | 4 | - | - | 66 | 33 | 712 | 35 | 155 | 59 | 483 | 222 | 1 | 4 | - | - | 33 |
| 3,001 - 3,500 | 1,424 | 1,343 | 3 | 2 | - | - | 59 | 17 | 611 | 20 | 141 | 54 | 428 | 144 | 3 | 6 | - | - | 17 |
| 3,501 - 4,000 | 859 | 826 | - | - | 2 | - | 22 | 9 | 364 | 16 | 103 | 28 | 224 | 114 | - | 1 | - | - | 9 |
| Over 4,000 | 835 | 807 | - | - | 1 | - | 21 | 6 | 388 | 6 | 101 | 37 | 186 | 111 | - | - | - | - | 6 |
| Totals | 15,298 | 13,227 | 168 | 23 | 23 | 1 | 756 | 1,100 | 7,033 | 251 | 1,334 | 455 | 3,680 | 1,379 | 25 | 41 | - | - | 1,100 |

See Page 114 for footnotes.



Other Schedules of Interest

Schedule of Retired and Vested Members by Type of Benefit

Police

| June 30, 2020 | | | | | | | | | | | | | | | | | | | | |
|---------------------------|----------------------|--------------|-----------|------------|-----------|----------|------------|------------|--------------|-------------------|---|------------|------------|------------|--------------|----------|----------|----------|----------|------------|
| Type of Retirement** | | | | | | | | | | Option Selected # | | | | | | | | | | |
| Amount of Monthly Benefit | Number of Retirants* | | | | | | | | No. Option | | | | | | | | | | Other& | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| \$1 - \$500 | 259 | 193 | - | - | - | 1 | 38 | 27 | 161 | 1 | | 10 | 14 | 21 | 25 | - | - | - | - | 27 |
| 501 - 1,000 | 365 | 203 | 12 | 1 | 1 | - | 140 | 8 | 273 | 5 | | 14 | 10 | 21 | 31 | 1 | 2 | - | - | 8 |
| 1,001 - 1,500 | 426 | 198 | 24 | 3 | 2 | 1 | 163 | 35 | 298 | 7 | | 15 | 17 | 19 | 35 | - | - | - | - | 35 |
| 1,501 - 2,000 | 375 | 221 | 19 | 31 | 2 | 1 | 76 | 25 | 226 | 11 | | 8 | 25 | 17 | 63 | - | - | - | - | 25 |
| 2,001 - 2,500 | 418 | 296 | 11 | 58 | 1 | 1 | 30 | 21 | 199 | 17 | | 13 | 54 | 16 | 96 | - | 2 | - | - | 21 |
| 2,501 - 3,000 | 448 | 314 | 2 | 92 | - | - | 33 | 7 | 192 | 21 | | 14 | 73 | 16 | 124 | 1 | - | - | - | 7 |
| 3,001 - 3,500 | 417 | 352 | 1 | 42 | 2 | 3 | 13 | 4 | 150 | 15 | | 10 | 97 | 9 | 131 | - | 1 | - | - | 4 |
| 3,501 - 4,000 | 368 | 315 | 4 | 34 | 1 | - | 10 | 4 | 127 | 8 | | 4 | 73 | 9 | 143 | - | - | - | - | 4 |
| Over 4,000 | 1,284 | 1,202 | 2 | 62 | 2 | 1 | 13 | 2 | 351 | 18 | | 14 | 352 | 18 | 526 | 3 | - | - | - | 2 |
| Totals | 4,360 | 3,294 | 75 | 323 | 11 | 8 | 516 | 133 | 1,977 | 103 | | 102 | 715 | 146 | 1,174 | 5 | 5 | - | - | 133 |

Fire

| June 30, 2020 | | | | | | | | | | | | | | | | | | | | |
|---------------------------|----------------------|--------------|-----------|-----------|----------|-----------|------------|-----------|------------|-------------------|---|-----------|------------|-----------|------------|----------|----------|----------|----------|-----------|
| Type of Retirement** | | | | | | | | | | Option Selected # | | | | | | | | | | |
| Amount of Monthly Benefit | Number of Retirants* | | | | | | | | No. Option | | | | | | | | | | Other& | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| \$1 - \$500 | 57 | 29 | - | - | - | 2 | 21 | 5 | 44 | - | | 2 | - | 2 | 4 | - | - | - | - | 5 |
| 501 - 1,000 | 101 | 42 | 2 | - | - | - | 56 | 1 | 95 | - | | 1 | - | 1 | 3 | - | - | - | - | 1 |
| 1,001 - 1,500 | 178 | 72 | 7 | 2 | 1 | 3 | 81 | 12 | 134 | 4 | | 7 | 8 | 8 | 5 | - | - | - | - | 12 |
| 1,501 - 2,000 | 155 | 67 | 7 | 7 | - | 1 | 71 | 2 | 120 | 5 | | 5 | 7 | 6 | 10 | - | - | - | - | 2 |
| 2,001 - 2,500 | 166 | 100 | 7 | 17 | 1 | 3 | 35 | 3 | 93 | 8 | | 6 | 20 | 7 | 29 | - | - | - | - | 3 |
| 2,501 - 3,000 | 164 | 128 | 3 | 23 | - | - | 9 | 1 | 62 | 8 | | 3 | 28 | 9 | 53 | - | - | - | - | 1 |
| 3,001 - 3,500 | 168 | 143 | - | 18 | - | 2 | 4 | 1 | 48 | 6 | | 4 | 40 | 3 | 66 | - | - | - | - | 1 |
| 3,501 - 4,000 | 155 | 141 | - | 10 | - | 1 | 2 | 1 | 51 | 5 | | 3 | 30 | 2 | 63 | - | - | - | - | 1 |
| Over 4,000 | 635 | 606 | - | 17 | 1 | - | 11 | - | 181 | 11 | | 2 | 166 | 6 | 267 | 1 | 1 | - | - | - |
| Totals | 1,779 | 1,328 | 26 | 94 | 3 | 12 | 290 | 26 | 828 | 47 | | 33 | 299 | 44 | 500 | 1 | 1 | - | - | 26 |

See Page 114 for footnotes.



**** Type of Retirement**

- 1-Service & early retirement
- 2-Ordinary disability retirement
- 3-Accidental disability retirement
- 4-Ordinary death in active service
- 5-Accidental death in active service
- 6-Beneficiaries of deceased members who retired on a service or disability allowance
- 7-Vested member with future benefit

Option Selected

- No option - Straight life
- Option 1 - Cash refund
- Option 2 - 100% Joint & Survivorship
- Option 3 - 50% Joint & Survivorship
- Option 4 - 100% Pop-Up
- Option 5 - 50% Pop-Up
- Option 6 - Other % Joint & Survivorship
- Option 7 - Other % Pop-Up
- Option 8 - Fixed amount to Beneficiaries
- Option 9 - Widow's benefit (accidental disability) 50%

** Including Vested members with a future benefit.
& Elections for Vested members are made at the time of commencement.*

Other Schedules of Interest

Schedule of Average Benefit Payment Amounts as of June 30, 2020

Medical Benefits

State Employees

| Service | 0 - 4 yrs.* | 5 - 9 yrs. | 10 - 14 yrs. | 15 - 19 yrs. | 20 - 24 yrs. | 25 - 29 yrs. | 30 or more yrs. | Total |
|---------------------------|-------------|------------|--------------|--------------|--------------|--------------|-----------------|-------------|
| Average annual benefit | \$ 4,147 | \$ 4,544 | \$ 3,998 | \$ 4,100 | \$ 3,882 | \$ 4,123 | \$ 4,196 | \$ 4,102 |
| Average monthly benefit | \$ 346 | \$ 379 | \$ 333 | \$ 342 | \$ 324 | \$ 344 | \$ 350 | \$ 342 |
| Annual Benefits | \$298,581 | \$254,481 | \$255,897 | \$147,585 | \$1,467,447 | \$1,096,639 | \$2,500,586 | \$6,021,216 |
| Number of retired members | 72 | 56 | 64 | 36 | 378 | 266 | 596 | 1,468 |

* Includes 6 members who did not have service reported.

Political Subdivision Employees

| Service | 0 - 4 yrs.* | 5 - 9 yrs. | 10 - 14 yrs. | 15 - 19 yrs. | 20 - 24 yrs. | 25 - 29 yrs. | 30 or more yrs. | Total |
|---------------------------|-------------|------------|--------------|--------------|--------------|--------------|-----------------|-------------|
| Average annual benefit | \$ 3,080 | \$ 3,507 | \$ 4,014 | \$ 4,344 | \$ 4,118 | \$ 4,100 | \$ 4,703 | \$ 4,253 |
| Average monthly benefit | \$ 257 | \$ 292 | \$ 335 | \$ 362 | \$ 343 | \$ 342 | \$ 392 | \$ 354 |
| Annual Benefits | \$43,118 | \$28,055 | \$32,113 | \$13,033 | \$2,087,738 | \$1,037,241 | \$1,368,596 | \$4,609,894 |
| Number of retired members | 14 | 8 | 8 | 3 | 507 | 253 | 291 | 1,084 |

* Includes 8 members who did not have service reported.

Teachers

| Service | 0 - 4 yrs.* | 5 - 9 yrs. | 10 - 14 yrs. | 15 - 19 yrs. | 20 - 24 yrs. | 25 - 29 yrs. | 30 or more yrs. | Total |
|---------------------------|-------------|------------|--------------|--------------|--------------|--------------|-----------------|--------------|
| Average annual benefit | \$ 2,909 | \$2,842 | \$ 3,969 | \$0 | \$ 4,296 | \$ 4,416 | \$ 4,892 | \$ 4,646 |
| Average monthly benefit | \$ 242 | \$ 237 | \$ 331 | \$ 0 | \$ 358 | \$ 368 | \$ 408 | \$ 387 |
| Annual Benefits | \$52,368 | \$11,368 | \$15,875 | \$0 | \$3,892,202 | \$3,802,053 | \$11,056,948 | \$18,830,814 |
| Number of retired members | 18 | 4 | 4 | 0 | 906 | 861 | 2,260 | 4,053 |

* Includes 12 members who did not have service reported.

Police and Fire

| Service | 0 - 4 yrs.* | 5 - 9 yrs. | 10 - 14 yrs. | 15 - 19 yrs. | 20 - 24 yrs. | 25 - 29 yrs. | 30 or more yrs. | Total |
|---------------------------|-------------|------------|--------------|--------------|--------------|--------------|-----------------|--------------|
| Average annual benefit | \$ 4,316 | \$ 4,169 | \$ 4,927 | \$ 4,884 | \$ 5,700 | \$ 6,171 | \$ 6,200 | \$ 5,732 |
| Average monthly benefit | \$ 360 | \$ 347 | \$ 411 | \$ 407 | \$ 475 | \$ 514 | \$ 517 | \$ 478 |
| Annual Benefits | \$237,360 | \$295,981 | \$773,541 | \$849,734 | \$7,517,665 | \$4,535,562 | \$2,436,636 | \$16,646,479 |
| Number of retired members | 55 | 71 | 157 | 174 | 1,319 | 735 | 393 | 2,904 |

* Includes 18 members who did not have service reported.

Number counts include 22 retirees who are eligible for a deferred subsidy.



Other Schedules of Interest

Schedule of Retired Members by Type of Benefits

Medical Benefits

State Employees

| June 30, 2020 | | | | | |
|-----------------|-----------------|----------|---------|----------|---------|
| Monthly Benefit | No. of Retirees | 1 Person | | 2 Person | |
| | | Pre-65 | Post-65 | Pre-65 | Post-65 |
| \$1-\$500 | 1,393 | 47 | 1,309 | 0 | 37 |
| 501-1,000 | 75 | 5 | 34 | 11 | 25 |
| 1,001-1,500 | 0 | 0 | 0 | 0 | 0 |
| 1,501-2,000 | 0 | 0 | 0 | 0 | 0 |
| Over 2,000 | 0 | 0 | 0 | 0 | 0 |
| Total | 1,468 | 52 | 1,343 | 11 | 62 |

Political Subdivision Employees

| June 30, 2020 | | | | | |
|-----------------|-----------------|----------|---------|----------|---------|
| Monthly Benefit | No. of Retirees | 1 Person | | 2 Person | |
| | | Pre-65 | Post-65 | Pre-65 | Post-65 |
| \$1-\$500 | 1,034 | 20 | 1,006 | 0 | 8 |
| 501-1,000 | 50 | 2 | 22 | 1 | 25 |
| 1,001-1,500 | 0 | 0 | 0 | 0 | 0 |
| 1,501-2,000 | 0 | 0 | 0 | 0 | 0 |
| Over 2,000 | 0 | 0 | 0 | 0 | 0 |
| Total | 1,084 | 22 | 1,028 | 1 | 33 |

Other Schedules of Interest

Schedule of Retired Members by Type of Benefits

Medical Benefits

Teachers

| June 30, 2020 | | | | | |
|-----------------|-----------------|----------|---------|----------|---------|
| Monthly Benefit | No. of Retirees | 1-Person | | 2-Person | |
| | | Pre-65 | Post-65 | Pre-65 | Post-65 |
| \$1-\$500 | 3,682 | 28 | 3,586 | 0 | 68 |
| 501-1,000 | 370 | 1 | 83 | 3 | 283 |
| 1,001-1,500 | 1 | 0 | 0 | 0 | 1 |
| 1,501-2,000 | 0 | 0 | 0 | 0 | 0 |
| Over 2,000 | 0 | 0 | 0 | 0 | 0 |
| Total | 4,053 | 29 | 3,669 | 3 | 352 |

Police and Fire

| June 30, 2020 | | | | | |
|-----------------|-----------------|----------|---------|----------|---------|
| Monthly Benefit | No. of Retirees | 1-Person | | 2-Person | |
| | | Pre-65 | Post-65 | Pre-65 | Post-65 |
| \$1-\$500 | 1,959 | 445 | 1,485 | 14 | 15 |
| 501-1,000 | 926 | 34 | 250 | 620 | 22 |
| 1,001-1,500 | 11 | 0 | 3 | 2 | 6 |
| 1,501-2,000 | 8 | 0 | 0 | 8 | 0 |
| Over 2,000 | 0 | 0 | 0 | 0 | 0 |
| Total | 2,904 | 479 | 1,738 | 644 | 43 |

Other Schedules of Interest

Historical Membership Data - Retiree

EMPLOYEES (aggregate compensation and annual allowance dollars in thousands)

RETIRED MEMBERSHIP DATA

| Fiscal Year | Added to Rolls | | Removed from Rolls | | Rolls End of Year | | % Increase in Annual Allowances | Average Annual Allowances |
|-------------|----------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------------------------------|---------------------------|
| | No.** | Annual Allowances* | No.** | Annual Allowances* | No.** | Annual Allowances* | | |
| 2020 | 1,208 | \$ 20,619 | 598 | \$ 7,641 | 19,434 | \$ 276,154 | 4.93% | \$ 14,210 |
| 2019 | 1,271 | 21,869 | 640 | 7,801 | 18,824 | 263,176 | 5.65% | 13,981 |
| 2018 | 1,133 | 19,288 | 513 | 6,556 | 18,193 | 249,109 | 5.39% | 13,693 |
| 2017 | 1,950 | 22,224 | 519 | 8,977 | 17,573 | 236,377 | 5.94% | 13,451 |
| 2016 | 1,134 | 19,332 | 475 | 4,636 | 16,142 | 223,130 | 7.05% | 13,823 |
| 2015 + | 1,504 | 21,357 | 1335 | 10,968 | 15,483 | 208,434 | 5.25% | 13,462 |
| 2014 | 1,094 | 15,784 | 492 | 5,431 | 15,314 | 198,045 | 5.52% | 12,932 |
| 2013 | 1,110 | 16,335 | 539 | 6,699 | 14,712 | 187,692 | 5.41% | 12,758 |
| 2012 | 1,111 | 14,711 | 457 | 4,890 | 14,141 | 178,056 | 5.84% | 12,591 |
| 2011 | 1,113 | 16,521 | 428 | 4,578 | 13,487 | 168,235 | 7.64% | 12,474 |
| 2010 | 1,070 | 18,300 | 460 | 4,624 | 12,802 | 156,292 | 9.59% | 12,208 |
| 2009 | 934 | 14,703 | 322 | 3,864 | 12,192 | 142,616 | 8.23% | 11,697 |
| 2008 | 1,083 | 17,897 | 362 | 4,199 | 11,580 | 131,777 | 11.60% | 11,380 |
| 2007 | 1,465 | 22,691 | 579 | 5,471 | 10,859 | 118,079 | 17.07% | 10,874 |
| 2005 | 1,620 | 19,183 | 739 | 5,972 | 9,973 | 100,859 | 18.56% | 10,113 |
| 2003 | 1,258 | 13,588 | 572 | 4,029 | 9,092 | 85,067 | 18.11% | 9,356 |
| 2001 | 1,095 | 10,078 | 617 | 3,965 | 8,406 | 72,025 | 17.11% | 8,568 |
| 1999 | 1,183 | 10,077 | 571 | 3,195 | 7,928 | 61,501 | 20.00% | 7,757 |

TEACHERS (aggregate compensation and annual allowance dollars in thousands)

RETIRED MEMBERSHIP DATA

| Fiscal Year | Added to Rolls | | Removed from Rolls | | Rolls End of Year | | % Increase in Annual Allowances | Average Annual Allowances |
|-------------|----------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------------------------------|---------------------------|
| | No.** | Annual Allowances* | No.** | Annual Allowances* | No.** | Annual Allowances* | | |
| 2020 | 718 | \$ 19,654 | 260 | \$ 6,213 | 14,198 | \$ 318,968 | 4.40% | \$ 22,466 |
| 2019 | 774 | 20,617 | 257 | 6,371 | 13,740 | 305,527 | 4.89% | 22,236 |
| 2018 | 766 | 20,526 | 239 | 6,075 | 13,223 | 291,281 | 5.22% | 22,028 |
| 2017 | 1,523 | 21,713 | 237 | 8,847 | 12,696 | 276,830 | 4.87% | 21,804 |
| 2016 | 760 | 19,954 | 209 | 5,325 | 11,410 | 263,964 | 5.87% | 23,134 |
| 2015+ | 840 | 21,563 | 946 | 6,891 | 10,859 | 249,335 | 6.25% | 22,961 |
| 2014 | 744 | 17,222 | 186 | 4,802 | 10,965 | 234,663 | 5.59% | 21,401 |
| 2013 | 698 | 15,844 | 247 | 5,860 | 10,407 | 222,243 | 4.70% | 21,355 |
| 2012 | 712 | 16,420 | 183 | 5,150 | 9,956 | 212,259 | 5.61% | 21,320 |
| 2011 | 504 | 10,402 | 164 | 3,644 | 9,427 | 200,989 | 3.48% | 21,321 |
| 2010 | 849 | 22,231 | 269 | 5,199 | 9,087 | 194,231 | 9.61% | 21,375 |
| 2009 | 1,001 | 26,668 | 148 | 3,214 | 8,507 | 177,199 | 15.26% | 20,830 |
| 2008 | 891 | 23,743 | 165 | 4,238 | 7,654 | 153,745 | 14.53% | 20,087 |
| 2007 | 1,254 | 29,350 | 230 | 4,004 | 6,928 | 134,240 | 23.28% | 19,376 |
| 2005 | 1,121 | 21,842 | 344 | 4,591 | 5,904 | 108,894 | 24.34% | 18,444 |
| 2003 | 848 | 15,910 | 239 | 2,735 | 5,127 | 87,580 | 26.86% | 17,082 |
| 2001 | 501 | 8,375 | 272 | 2,691 | 4,518 | 69,036 | 12.62% | 15,280 |
| 1999 | 685 | 11,458 | 292 | 2,504 | 4,289 | 61,301 | 25.29% | 14,293 |

* Includes additional COLA allowances. The benefit amounts shown are the monthly benefits as of the valuation date annualized and are not the actual benefits paid during the fiscal year.

** Includes beneficiaries in receipt but excludes deferred vested terminations.

+ June 30, 2015 data included a reclassification of members with split benefits resulting in an artificially high number of new additions to the rolls.



Other Schedules of Interest

Historical Membership Data - Retiree

POLICE OFFICERS (aggregate compensation and annual allowance dollars in thousands)

RETIRED MEMBERSHIP DATA

| Fiscal Year | Added to Rolls | | Removed from Rolls | | Rolls End of Year | | % Increase in Annual Allowances | Average Annual Allowances |
|-------------|----------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------------------------------|---------------------------|
| | No.** | Annual Allowances* | No.** | Annual Allowances* | No.** | Annual Allowances* | | |
| 2020 | 209 | \$ 8,967 | 64 | \$ 1,720 | 4,227 | \$ 157,907 | 4.81% | \$ 37,357 |
| 2019 | 230 | 9,739 | 71 | 1,595 | 4,082 | 150,660 | 5.71% | 36,908 |
| 2018 | 201 | 7,976 | 64 | 1,390 | 3,923 | 142,516 | 4.85% | 36,328 |
| 2017 | 233 | 7,985 | 76 | 1,745 | 3,786 | 135,930 | 4.81% | 35,903 |
| 2016 | 239 | 10,027 | 67 | 1,339 | 3,629 | 129,690 | 7.18% | 35,737 |
| 2015+ | 282 | 7,303 | 107 | 1,675 | 3,457 | 121,002 | 4.88% | 35,002 |
| 2014 | 178 | 6,420 | 59 | 1,304 | 3,282 | 115,374 | 4.64% | 35,154 |
| 2013 | 247 | 8,189 | 65 | 1,464 | 3,163 | 110,258 | 6.50% | 34,859 |
| 2012 | 171 | 6,977 | 70 | 1,008 | 2,981 | 103,533 | 6.12% | 34,731 |
| 2011 | 237 | 10,370 | 59 | 1,133 | 2,880 | 97,564 | 10.46% | 33,876 |
| 2010 | 189 | 7,711 | 52 | 1,413 | 2,702 | 88,327 | 7.68% | 32,689 |
| 2009 | 157 | 7,235 | 28 | 627 | 2,565 | 82,029 | 8.76% | 31,980 |
| 2008 | 179 | 8,504 | 36 | 1,376 | 2,436 | 75,421 | 10.44% | 30,961 |
| 2007 | 361 | 14,045 | 80 | 1,540 | 2,293 | 68,293 | 22.42% | 29,783 |
| 2005 | 308 | 8,934 | 83 | 1,492 | 2,012 | 55,788 | 17.68% | 27,728 |
| 2003 | 262 | 7,903 | 61 | 971 | 1,787 | 47,406 | 23.81% | 26,528 |
| 2001 | 280 | 6,085 | 63 | 960 | 1,586 | 38,290 | 25.58% | 24,142 |
| 1999 | 238 | 5,790 | 39 | 604 | 1,369 | 30,490 | 30.00% | 22,272 |

FIREFIGHTERS (aggregate compensation and annual allowance dollars in thousands)

RETIRED MEMBERSHIP DATA

| Fiscal Year | Added to Rolls | | Removed from Rolls | | Rolls End of Year | | % Increase in Annual Allowances | Average Annual Allowances |
|-------------|----------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------------------------------|---------------------------|
| | No.** | Annual Allowances* | No.** | Annual Allowances* | No.** | Annual Allowances* | | |
| 2020 | 87 | \$ 4,289 | 40 | \$ 1,048 | 1,753 | \$ 72,514 | 4.68% | \$ 41,365 |
| 2019 | 80 | 3,992 | 47 | 1,244 | 1,706 | 69,273 | 4.13% | 40,606 |
| 2018 | 68 | 3,266 | 34 | 717 | 1,673 | 66,525 | 3.98% | 39,764 |
| 2017 | 88 | 3,697 | 44 | 1,213 | 1,639 | 63,976 | 4.04% | 39,033 |
| 2016 | 75 | 4,177 | 31 | 936 | 1,595 | 61,492 | 5.56% | 38,553 |
| 2015+ | 105 | 4,546 | 47 | 882 | 1,551 | 58,251 | 6.71% | 37,557 |
| 2014 | 89 | 2,774 | 43 | 1,139 | 1,493 | 54,587 | 3.09% | 36,562 |
| 2013 | 98 | 3,497 | 27 | 715 | 1,447 | 52,952 | 5.55% | 36,595 |
| 2012 | 79 | 3,105 | 39 | 495 | 1,376 | 50,170 | 5.49% | 36,461 |
| 2011 | 111 | 5,051 | 29 | 696 | 1,336 | 47,560 | 10.08% | 35,599 |
| 2010 | 53 | 2,490 | 36 | 766 | 1,254 | 43,205 | 4.16% | 34,454 |
| 2009 | 60 | 2,628 | 23 | 644 | 1,237 | 41,481 | 5.02% | 33,533 |
| 2008 | 63 | 3,456 | 31 | 1,110 | 1,200 | 39,497 | 6.31% | 32,914 |
| 2007 | 131 | 7,404 | 24 | 1,066 | 1,168 | 37,151 | 20.57% | 31,807 |
| 2005 | 128 | 4,393 | 66 | 1,290 | 1,061 | 30,813 | 15.83% | 29,041 |
| 2003 | 142 | 4,747 | 49 | 1,067 | 999 | 26,602 | 30.26% | 26,629 |
| 2001 | 164 | 3,861 | 39 | 541 | 906 | 20,422 | 29.36% | 22,541 |
| 1999 | 108 | 2,684 | 41 | 514 | 781 | 15,787 | 25.03% | 20,214 |

* Includes additional COLA allowances. The benefit amounts shown are the monthly benefits as of the valuation date annualized and are not the actual benefits paid during the fiscal year.

** Includes beneficiaries in receipt but excludes deferred vested terminations.

+ June 30, 2015 data included a reclassification of members with split benefits resulting in an artificially high number of new additions to the rolls.

