

Town of Brookline

Actuarial Valuation and Review of Other Postemployment Benefits (OPEB)

Measured at June 30, 2020



This report has been prepared at the request of the Town of Brookline to assist in administering the Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Town of Brookline and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

© 2021 by The Segal Group, Inc. All rights reserved.

Segal



116 Huntington Avenue, 8th Floor
Boston, MA 02116
segalco.com
T 617.424.7300

January 21, 2021

Mr. Michael DiPietro
Comptroller
333 Washington Street
Town Hall
Brookline, MA 02445

Dear Mr. DiPietro:

We are pleased to submit this report on our actuarial valuation of postemployment welfare benefits as of June 30, 2020. The purpose of this report is to calculate an Actuarially Determined Contribution for the Town of Brookline Other Postemployment Benefit (OPEB) Plan for the fiscal year ending June 30, 2021. It summarizes the actuarial data used in the valuation and analyzes the experience and changes in assumptions since the prior valuation. The GASB Statements No. 74 and 75 disclosure information for the fiscal year ending June 30, 2021 will be provided in a separate report when the June 30, 2021 financial information is available.

This report is based on information received from the Town of Brookline and vendors employed by the Town of Brookline. Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. Segal, however, does review the data for reasonableness and consistency.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security at termination of the plan, or determining short-term cash flow requirements.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience or rates of return on assets differing from that anticipated by the assumptions; changes in 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); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements.

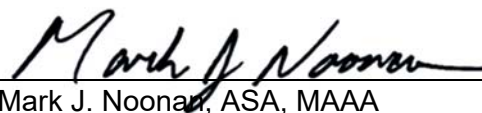
The actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. The actuarial calculations were directed under our supervision. We are members of the American Academy of Actuaries and collectively meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Town of Brookline are reasonably related to the experience of and the expectations for the Plan.

We look forward to discussing this with you at your convenience.

Sincerely,
Segal



Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary



Mark J. Noonan, ASA, MAAA
Vice President and Health Actuary

Table of Contents

| | |
|--|----|
| Section 1: Actuarial Valuation Summary..... | 5 |
| Purpose and basis | 5 |
| Highlights of the valuation | 5 |
| Other considerations | 9 |
| Important information about actuarial valuations..... | 10 |
| Section 2: Valuation Results | 12 |
| Summary of valuation results | 12 |
| Projection of actuarially determined contribution..... | 13 |
| Department Results..... | 14 |
| Section 3: Supporting Information..... | 16 |
| Exhibit I: Summary of Participant Data..... | 16 |
| Exhibit II: Statements of Actuarial Assumption, Methods and Models | 17 |
| Exhibit III: Summary of Plan | 29 |
| Exhibit IV: Definition of Terms | 33 |

Section 1: Actuarial Valuation Summary

Purpose and basis

This report presents the results of our actuarial valuation of the Town of Brookline other postemployment welfare benefit plan as of June 30, 2020. The purpose of this report is to calculate an Actuarially Determined Contribution for the OPEB plan for the fiscal year ending June 30, 2021. Determinations for purposes other than meeting funding requirements may be significantly different from the results reported here. This valuation is based on:

- The benefit provisions of the OPEB plan, as administered by the Town of Brookline;
- The characteristics of covered active members, retired members and beneficiaries as of June 30, 2020, provided by the Town of Brookline;
- The assets of the Plan as of June 30, 2020, provided by the Town of Brookline;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Highlights of the valuation

- The Coronavirus (COVID-19) pandemic is still rapidly evolving and had a significant impact on the US economy in 2020, including most retiree health plans, and will likely continue to have an impact in the future. Our results do not include the impact of the following:
 - Short-term increases in health plan costs related to the testing or treatment of COVID-19;
 - Changes in the market value of plan assets since June 30, 2020;
 - Changes in interest rates since June 30, 2020;
 - Short-term or long-term impacts on mortality of the covered population; or
 - The potential for federal or state fiscal relief.
- The discount rate used to determine the liabilities that are the basis of the Actuarially Determined Contribution is the expected return on assets. Based on the investment allocation of the OPEB Trust, we recommend lowering the expected return on assets from 7.20% to 7.00%.

Section 1: Actuarial Valuation Summary

- The unfunded actuarial accrued liability (UAAL) as of June 30, 2020 is \$226,322,000 based on an actuarial accrued liability (AAL) of \$285,411,000 and an actuarial value of assets of \$59,089,000. Going forward, net unfunded plan obligations will be expected to change due to normal plan operations, which consist of continuing accruals for active members, plus interest on the unfunded actuarial accrued liability, less employer contributions. Future valuations will analyze the difference between actual and expected unfunded actuarial accrued liabilities.
- As of June 30, 2020 the ratio of assets to the AAL (the funded ratio) is 20.70%, compared to 16.27% in the prior valuation. This funded percentage is not necessarily appropriate for assessing the sufficiency of OPEB assets to cover the estimated cost of settling the benefit obligations or the need for or the amount of future contributions.
- The following assumptions were revised with this valuation:
 - The per capita health costs, retiree contributions and trends were updated to reflect current experience.
 - The mortality projection scale for teachers was updated.
 - The impact of the excise tax on high cost health plans (part of the Patient Protection and Affordable Care Act) was removed, as the tax was repealed effective December 20, 2019.
 - The discount rate was decreased from 7.20% to 7.00%.
- The UAAL was expected to increase by \$17,431,000 from \$236,866,000 as of June 30, 2018 to \$254,297,000 as of June 30, 2020. The actual unfunded liability of \$226,322,000 is \$27,975,000 less than expected. The difference between the actual and expected increase was the net effect of the following:

| | |
|--|----------------------|
| June 30, 2018 unfunded actuarial liability | \$236,866,000 |
| June 30, 2020 expected unfunded actuarial liability | 254,297,000 |
| • Change due to: | |
| • Experience gain | -\$11,740,000 |
| • Investment loss | 3,310,000 |
| • Removing excise tax | -3,711,000 |
| • Updating future trends | -391,000 |
| • Updating per capita costs, contributions | -19,113,000 |
| • Updating the mortality projection scale for teachers | -3,172,000 |
| • Lowering the discount rate | 6,842,000 |
| Net decrease | -\$27,975,000 |
| June 30, 2020 unfunded actuarial accrued liability | \$226,322,000 |

Section 1: Actuarial Valuation Summary

- The participant data received for the June 30, 2020 actuarial valuation included 1,607 active employees with health coverage and 1,686 retirees and beneficiaries receiving retiree health benefits compared to 1,583 active employees and 1,696 retirees and beneficiaries in the prior valuation.
- The Actuarially Determined Contribution (ADC) for fiscal year 2021 is \$22,274,000. The ADC is calculated using a 28-year amortization of the UAAL.
- A projection of the ADC appears on page 13. The projection reflects the Town of Brookline's policy to contribute \$4,521,536 in fiscal 2021 through 2023, increasing \$250,000 per year thereafter. The liabilities are projected to be fully funded in 2053, if all assumptions are met and there are no future changes in assumptions or the plan of benefits. This is one year earlier than in the prior valuation report.

Section 1: Actuarial Valuation Summary

OPEB Trust information

As of June 30, 2020, the Town of Brookline has \$59,089,126 in assets. The table below shows the increase in assets from June 30, 2018 to June 30, 2020.

| Reconciliation of OPEB Balance from June 30, 2018 through June 30, 2020 | Total |
|---|---------------------|
| Balance as of June 30, 2018 | \$46,036,209 |
| • Contributions | 4,570,465 |
| • Net investment income | <u>2,575,122</u> |
| Balance as of June 30, 2019 | \$53,181,796 |
| • Contributions | 5,071,743 |
| • Net investment income | <u>835,587</u> |
| Balance as of June 30, 2020 | \$59,089,126 |

Section 1: Actuarial Valuation Summary

Other considerations

Employer decisions regarding plan design, cost sharing between the Employer and its retirees, actuarial cost method, amortization techniques, and integration with Medicare are just some of the decisions that affect the magnitude of OPEB obligations. We are available to assist you with any investigation of such options you may wish to undertake.

Calculations are based on the benefits provided under the terms of the substantive plan in effect at the time of the valuation and on the pattern of sharing costs between the employer and plan members. The projection of benefits does not incorporate the potential effect of legal or contractual funding limitations on the pattern of cost sharing between the employer and plan members in the future.

Actuarial calculations reflect a long-term perspective, and the methods and assumptions use techniques designed to reduce short-term volatility in accrued liabilities and the actuarial value of assets, if any.

The calculation of an accounting obligation does not, in and of itself, imply that there is any legal liability to provide the benefits valued, nor is there any implication that the Employer is required to implement a funding policy to satisfy the projected expense.

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and the actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to defining future uncertain obligations of a postretirement health plan. As such, it will never forecast the precise future stream of benefit payments. It is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare a valuation, Segal relies on a number of input items. These include:

| | |
|------------------------------|--|
| Plan of benefits | Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. For example, a plan may provide health benefits to post-65 retirees that coordinates with Medicare. If so, changes in the Medicare law or administration may change the plan's costs without any change in the terms of the plan itself. It is important for the Town of Brookline to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits. |
| Participant data | An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is not necessary to have perfect data for an actuarial valuation: the valuation is an estimated forecast, not a prediction. The uncertainties in other factors are such that even perfect data does not produce a "perfect" result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data. |
| Assets | The valuation is based on the market value of assets as of the valuation date, as provided by the Town of Brookline. |
| Actuarial assumptions | In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. To determine the future costs of benefits, Segal collects claims, premiums, and enrollment data in order to establish a baseline cost for the valuation measurement, and then develops short- and long-term health care cost trend rates to project increases in costs in future years. This forecast also requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets or, if there are no assets, a rate of return based on a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale). All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model necessarily uses approximations and estimates that may lead to significant changes in our results but will have no impact on the actual cost of the plan. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong. |

Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The actuarial valuation is prepared for use by the Town of Brookline. It includes information for compliance with accounting standards and for the plan's auditor. Segal is not responsible for the use or misuse of its report, particularly by any other party.

If the Town of Brookline is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

An actuarial valuation is a measurement at a specific date – it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

Sections of this report include actuarial results that are not rounded, but that does not imply precision.

Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in plan enrollment, emerging claims experience, health care cost trend, and investment losses, not just the current valuation results.

Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Town of Brookline should look to their other advisors for expertise in these areas.

While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

Segal's report shall be deemed to be final and accepted by the Town of Brookline upon delivery and review. The Town of Brookline should notify Segal immediately of any questions or concerns about the final content.

As Segal has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

Section 2: Valuation Results

Summary of valuation results

| | 7.00% discount rate June 30, 2020 | 7.20% discount rate June 30, 2018 |
|--|--------------------------------------|--------------------------------------|
| Actuarial Accrued Liability | | |
| 1. Current retirees, beneficiaries and dependents | \$150,511,447 | \$151,640,057 |
| 2. Current active employees | <u>134,899,824</u> | <u>131,262,379</u> |
| 3. Total: (1) + (2) | \$285,411,271 | \$282,902,437 |
| 4. Actuarial value of assets as of June 30, 2020 and 2018 | <u>59,089,126</u> | <u>46,036,209</u> |
| 5. Unfunded actuarial accrued liability | \$226,322,145 | \$236,866,228 |
| 6. Funded ratio: (4) / (3) | 20.70% | 16.27% |
| Actuarially Determined Contribution for Fiscal Year Ending | | |
| | June 30, 2021 | June 30, 2019 |
| 7. Normal cost, including adjustment for timing | \$9,635,291 | \$9,137,035 |
| 8. Amortization payment, including adjustment for timing | <u>12,638,271</u> | <u>12,995,138</u> |
| 9. Total Actuarially Determined Contribution (ADC): (7) + (8) | \$22,273,562 | \$22,132,173 |
| 10. Projected benefit payments | 12,390,484 | 11,673,505 |

Notes:

Assumes payment in the middle of the fiscal year.

June 30, 2018 figures reflect 30-year increasing (3.50% per year) amortization.

June 30, 2020 figures reflect 28-year increasing (3.50% per year) amortization.

Section 2: Valuation Results

Projection of actuarially determined contribution

7.00% Discount Rate, 28-Year Closed Amortization with Funding Policy Contributions

| Fiscal Year Ending June 30 | (1) Normal Cost | (2) Amortization of UAAL | (3) Total Funding Requirement (ADC): (1) + (2) | (4) Projected Benefits Paid by the Town | (5) Additional Funding: (3) - (4) | (6) Assets at End of Year | (7) AAL at End of Year | (8) UAAL at End of Year: (7) - (6) |
|----------------------------------|--------------------|--------------------------------|--|--|--|---------------------------------|------------------------------|---|
| 2021 | \$9,635,291 | \$12,638,271 | \$22,273,562 | \$12,390,484 | \$4,521,536 | \$68,063,408 | \$302,540,066 | \$234,476,658 |
| 2022 | 9,987,485 | 13,388,088 | 23,375,573 | 13,398,808 | 4,521,536 | 77,504,960 | 320,189,171 | 242,684,211 |
| 2023 | 10,352,553 | 14,186,538 | 24,539,091 | 14,533,750 | 4,521,536 | 87,607,420 | 338,277,349 | 250,669,929 |
| 2024 | 10,730,965 | 15,023,028 | 25,753,993 | 15,653,985 | 4,771,536 | 98,675,655 | 356,864,352 | 258,188,697 |
| 2025 | 11,123,209 | 15,888,011 | 27,011,220 | 16,830,292 | 5,021,536 | 110,777,268 | 375,941,404 | 265,164,136 |
| 2026 | 11,529,790 | 16,781,858 | 28,311,648 | 18,022,207 | 5,271,536 | 123,984,596 | 395,541,494 | 271,556,898 |
| 2027 | 11,951,233 | 17,707,689 | 29,658,922 | 19,125,508 | 5,521,536 | 138,375,039 | 415,808,271 | 277,433,232 |
| 2028 | 12,388,080 | 18,676,461 | 31,064,541 | 20,361,639 | 5,771,536 | 154,031,415 | 436,666,936 | 282,635,521 |
| 2029 | 12,840,895 | 19,685,421 | 32,526,316 | 21,564,403 | 6,021,536 | 171,042,339 | 458,209,955 | 287,167,616 |
| 2030 | 13,310,262 | 20,743,559 | 34,053,821 | 22,730,160 | 6,271,536 | 189,502,630 | 480,540,634 | 291,038,004 |
| 2031 | 13,796,785 | 21,862,146 | 35,658,931 | 23,986,519 | 6,521,536 | 209,513,743 | 503,638,136 | 294,124,393 |
| 2032 | 14,301,092 | 23,044,781 | 37,345,873 | 25,134,614 | 6,771,536 | 231,184,236 | 527,686,523 | 296,502,287 |
| 2033 | 14,823,833 | 24,312,745 | 39,136,578 | 26,284,218 | 7,021,536 | 254,630,266 | 552,769,865 | 298,139,599 |
| 2034 | 15,365,681 | 25,683,272 | 41,048,953 | 27,467,008 | 7,271,536 | 279,976,120 | 578,946,046 | 298,969,926 |
| 2035 | 15,927,335 | 27,175,520 | 43,102,855 | 28,703,023 | 7,521,536 | 307,354,786 | 606,256,995 | 298,902,209 |
| 2036 | 16,509,519 | 28,812,507 | 45,322,026 | 29,994,659 | 7,771,536 | 336,908,560 | 634,745,847 | 297,837,287 |
| 2037 | 17,112,983 | 30,624,591 | 47,737,574 | 31,344,419 | 8,021,536 | 368,789,701 | 664,456,945 | 295,667,244 |
| 2038 | 17,738,505 | 32,652,806 | 50,391,311 | 32,754,918 | 8,271,536 | 403,161,124 | 695,435,833 | 292,274,709 |
| 2039 | 18,386,892 | 34,954,167 | 53,341,059 | 34,228,889 | 8,521,536 | 440,197,148 | 727,729,252 | 287,532,104 |
| 2040 | 19,058,979 | 37,610,532 | 56,669,511 | 35,769,189 | 8,771,536 | 480,084,296 | 761,385,124 | 281,300,828 |
| 2041 | 19,755,632 | 40,744,102 | 60,499,734 | 37,378,803 | 9,021,536 | 523,022,147 | 796,452,533 | 273,430,386 |
| 2042 | 20,477,750 | 44,546,199 | 65,023,949 | 39,060,849 | 9,271,536 | 569,224,249 | 832,981,704 | 263,757,455 |
| 2043 | 21,226,263 | 49,334,835 | 70,561,098 | 40,818,587 | 9,521,536 | 618,919,100 | 871,023,966 | 252,104,866 |
| 2044 | 22,002,136 | 55,681,347 | 77,683,483 | 42,655,423 | 9,771,536 | 672,351,192 | 910,631,717 | 238,280,525 |
| 2045 | 22,806,369 | 64,726,991 | 87,533,360 | 44,574,917 | 10,021,536 | 729,782,133 | 951,858,376 | 222,076,243 |
| 2046 | 23,639,999 | 79,132,714 | 102,772,713 | 46,580,789 | 10,271,536 | 791,491,842 | 994,758,325 | 203,266,483 |
| 2047 | 24,504,100 | 106,878,251 | 131,382,351 | 48,676,924 | 10,521,536 | 857,779,832 | 1,039,386,844 | 181,607,012 |
| 2048 | 25,399,786 | 187,855,754 | 213,255,540 | 50,867,386 | 10,771,536 | 928,966,584 | 1,085,800,033 | 156,833,449 |
| 2049 | 26,328,212 | 162,229,781 | 188,557,993 | 53,156,418 | 11,021,536 | 1,005,395,010 | 1,134,054,723 | 128,659,713 |
| 2050 | 27,290,574 | 133,086,642 | 160,377,216 | 55,548,457 | 11,271,536 | 1,087,432,028 | 1,184,208,372 | 96,776,344 |
| 2051 | 28,288,113 | 100,106,229 | 128,394,342 | 58,048,137 | 11,521,536 | 1,175,470,239 | 1,236,318,949 | 60,848,710 |
| 2052 | 29,322,114 | 62,942,395 | 92,264,509 | 60,660,304 | 11,771,536 | 1,269,929,728 | 1,290,444,800 | 20,515,072 |
| 2053 | 30,393,911 | 21,220,955 | 51,614,866 | 51,614,866 | - | 1,346,644,498 | 1,346,644,498 | - |

Notes:

Assumes payment in the middle of the fiscal year.

Normal cost is projected to increase at the payroll growth assumption of 3.50% per year and 0.15% for future mortality improvement and does not reflect the future impact of pension reform for new hires.

Amortization payments are assumed to increase 3.50% per year.

Assets are assumed to return 7.00% per year.

Section 2: Valuation Results

Department Results

| | School Enterprise Funds | | | | |
|--|-------------------------|-----------------|------------------|------------------|------------------|
| | School | Adult Education | Early Childhood | Food Services | METCO |
| Actuarial Accrued Liability (AAL) by Participant Category | | | | | |
| 1. Current retirees, beneficiaries and dependents | \$65,120,582 | \$82,114 | \$477,183 | \$992,937 | \$270,594 |
| 2. Current active employees | <u>70,396,512</u> | <u>515,251</u> | <u>1,942,069</u> | <u>1,942,241</u> | <u>1,164,741</u> |
| 3. Total AAL as of June 30, 2020: (1) + (2) | \$135,517,094 | \$597,365 | \$2,419,252 | \$2,935,178 | \$1,435,335 |
| 4. Actuarial value of assets as of June 30, 2020 | <u>15,214,726</u> | <u>206,902</u> | <u>1,275,626</u> | <u>1,263,697</u> | <u>457,604</u> |
| 5. Unfunded actuarial accrued liability (UAAL) as of June 30, 2020: (3) - (4) | \$120,302,368 | \$390,463 | \$1,143,626 | \$1,671,481 | \$977,731 |
| 6. Funded ratio: (4)/(3) | 11.23% | 34.64% | 52.73% | 43.05% | 31.88% |
| Annual Required Contribution for Fiscal Year Ending June 30, 2021 | | | | | |
| 7. Normal Cost, including adjustment for timing | \$5,074,037 | \$34,319 | \$147,699 | \$142,420 | \$86,178 |
| 8. 28-year amortization increasing (3.50% per year) of the unfunded actuarial accrued liability (UAAL), including adjustment for timing: | <u>6,717,920</u> | <u>21,804</u> | <u>63,862</u> | <u>93,339</u> | <u>54,598</u> |
| 9. Total Actuarially Determined Contribution (ADC): (7) + (8) | \$11,791,957 | \$56,123 | \$211,561 | \$235,759 | \$140,776 |
| 10. Projected Benefit Payments | <u>5,495,735</u> | <u>5,445</u> | <u>30,965</u> | <u>103,054</u> | <u>29,290</u> |
| 11. Contribution to OPEB Trust Needed to fully fund the ADC: (9) - (10) | \$6,296,222 | \$50,678 | \$180,596 | \$132,705 | \$111,486 |
| 12. Budgeted Town contribution | <u>822,000</u> | <u>17,389</u> | <u>70,422</u> | <u>85,440</u> | <u>41,781</u> |
| 13. Shortfall: (11)-(12) | \$5,474,222 | \$33,289 | \$110,174 | \$47,265 | \$69,705 |
| Annual Required Contribution for Fiscal Year Ending June 30, 2022 | | | | | |
| 14. Normal Cost, including adjustment for timing | \$5,259,506 | \$35,573 | \$153,098 | \$147,626 | \$89,328 |
| 15. 27-year amortization increasing (3.50% per year) of the unfunded actuarial accrued liability (UAAL), including adjustment for timing | <u>7,116,488</u> | <u>23,098</u> | <u>67,651</u> | <u>98,877</u> | <u>57,837</u> |
| 16. Total Actuarially Determined Contribution (ADC): (14) + (15) | \$12,375,994 | \$58,671 | \$220,749 | \$246,503 | \$147,165 |
| 17. Projected Benefit Payments | <u>5,994,713</u> | <u>10,174</u> | <u>38,312</u> | <u>120,396</u> | <u>40,586</u> |
| 18. Contribution to OPEB Trust Needed to Fully Fund the ADC: (16) - (17) | \$6,381,281 | \$48,497 | \$182,437 | \$126,107 | \$106,579 |
| 19. Expected Town contribution | <u>822,000</u> | <u>17,389</u> | <u>70,422</u> | <u>85,440</u> | <u>41,781</u> |
| 20. Shortfall: (18) - (19) | \$5,559,281 | \$31,108 | \$112,015 | \$40,667 | \$64,798 |

Notes:

Assumes payment in the middle of the year.

The asset allocation as of June 30, 2020 was based on contributions provided by the Town and a pro-rata allocation of investment income. For School Enterprise Funds, contributions were allocations in proportion to actuarial accrued liability.

Section 2: Valuation Results

| | Enterprise Funds | | | | | | Total |
|--|------------------|------------------|------------------|-------------------|----------------|------------------|---------------------------|
| | Golf | Rec | Water | Town | CDBG | Ret | |
| Actuarial Accrued Liability (AAL) by Participant Category | | | | | | | |
| 1. Current retirees, beneficiaries and dependents | \$0 | \$1,386,718 | \$3,396,314 | \$78,445,388 | \$276,534 | \$63,083 | \$150,511,447 |
| 2. Current active employees | <u>194,688</u> | <u>955,803</u> | <u>3,131,326</u> | <u>53,891,859</u> | <u>474,062</u> | <u>291,272</u> | <u>134,899,824</u> |
| 3. Total AAL as of June 30, 2020: (1) + (2) | \$194,688 | \$2,342,521 | \$6,527,640 | \$132,337,247 | \$750,596 | \$354,355 | \$285,411,271 |
| 4. Actuarial value of assets as of June 30, 2020 | <u>119,486</u> | <u>1,142,180</u> | <u>2,568,574</u> | <u>36,129,258</u> | <u>262,204</u> | <u>448,869</u> | <u>59,089,126</u> |
| 5. Unfunded actuarial accrued liability (UAAL) as of June 30, 2020: (3) - (4) | \$75,202 | \$1,200,341 | \$3,959,066 | \$96,207,989 | \$488,392 | -\$94,514 | \$226,322,145 |
| 6. Funded ratio: (4)/(3) | 61.37% | 48.76% | 39.35% | 27.30% | 34.93% | 126.67% | 20.70% |
| Annual Required Contribution for Fiscal Year Ending June 30, 2021 | | | | | | | |
| 7. Normal Cost, including adjustment for timing | \$8,660 | \$84,442 | \$166,822 | \$3,844,326 | \$30,141 | \$16,247 | \$9,635,291 |
| 8. 28-year amortization increasing (3.50% per year) of the unfunded actuarial accrued liability (UAAL), including adjustment for timing: | <u>4,200</u> | <u>67,030</u> | <u>221,082</u> | <u>5,372,441</u> | <u>27,273</u> | -5,278 | <u>12,638,271</u> |
| 9. Total Actuarially Determined Contribution (ADC): (7) + (8) | \$12,860 | \$151,472 | \$387,904 | \$9,216,767 | \$57,414 | \$10,969 | \$22,273,562 |
| 10. Projected Benefit Payments | <u>112</u> | <u>123,227</u> | <u>278,149</u> | <u>6,295,921</u> | <u>22,917</u> | <u>5,669</u> | <u>12,390,484</u> |
| 11. Contribution to OPEB Trust Needed to fully fund the ADC: (9) - (10) | \$12,748 | \$28,245 | \$109,755 | \$2,920,846 | \$34,497 | \$5,300 | \$9,883,078 |
| 12. Budgeted Town contribution | <u>12,700</u> | <u>40,261</u> | <u>74,991</u> | <u>3,353,092</u> | <u>0</u> | <u>3,460</u> | <u>4,521,536</u> |
| 13. Shortfall: (11)-(12) | \$48 | -\$12,016 | \$34,764 | -\$432,246 | \$34,497 | \$1,840 | \$5,361,542 |
| Annual Required Contribution for Fiscal Year Ending June 30, 2022 | | | | | | | |
| 14. Normal Cost, including adjustment for timing | \$8,977 | \$87,529 | \$172,920 | \$3,984,844 | \$31,243 | \$16,841 | \$9,987,485 |
| 15. 27-year amortization increasing (3.50% per year) of the unfunded actuarial accrued liability (UAAL), including adjustment for timing | <u>4,449</u> | <u>71,007</u> | <u>234,199</u> | <u>5,691,182</u> | <u>28,891</u> | -5,591 | <u>13,388,088</u> |
| 16. Total Actuarially Determined Contribution (ADC): (14) + (15) | \$13,426 | \$158,536 | \$407,119 | \$9,676,026 | \$60,134 | \$11,250 | \$23,375,573 |
| 17. Projected Benefit Payments | <u>268</u> | <u>134,655</u> | <u>298,753</u> | <u>6,726,063</u> | <u>27,966</u> | <u>6,922</u> | <u>13,398,808</u> |
| 18. Contribution to OPEB Trust Needed to Fully Fund the ADC: (16) - (17) | \$13,158 | \$23,881 | \$108,366 | \$2,949,963 | \$32,168 | \$4,328 | \$9,976,765 |
| 19. Expected Town contribution | <u>12,700</u> | <u>40,261</u> | <u>74,991</u> | <u>3,353,092</u> | <u>0</u> | <u>3,460</u> | <u>4,521,536</u> |
| 20. Shortfall: (18) - (19) | \$458 | -\$16,380 | \$33,375 | -\$403,129 | \$32,168 | \$868 | \$5,455,229 |

Notes:

Assumes payment in the middle of the year.

The asset allocation as of June 30, 2020 was based on contributions provided by the Town and a pro-rata allocation of investment income. For School Enterprise Funds, contributions were allocations in proportion to actuarial accrued liability.

Section 3: Supporting Information

Exhibit I: Summary of Participant Data

| | June 30, 2020 | June 30, 2018 |
|--|---------------|---------------|
| Retirees, Beneficiaries and Dependents Covered for Medical Benefits | | |
| • Number | 1,686 | 1,696 |
| • Average age | 73.8 | 72.5 |
| Retired employees with life insurance coverage | | |
| • Number of Individuals ¹ | 940 | 927 |
| • Average Age | 74.4 | 73.8 |
| Active Employees Covered for Medical Benefits | | |
| • Number of employees | | |
| – Male | 645 | 647 |
| – Female | <u>962</u> | <u>936</u> |
| – Total | 1,607 | 1,583 |
| • Average age | 43.5 | 43.1 |
| • Average service | 10.6 | 10.9 |

¹ June 30, 2018 and 2020 counts include 81 and 103 retirees with life insurance only, respectively
 9215377v4/04111.015
 Town of Brookline

Section 3: Supplemental Information

Exhibit II: Statements of Actuarial Assumption, Methods and Models

| | |
|-------------------------------------|--|
| Data: | Detailed census data for postemployment welfare benefits were provided by the Town of Brookline. |
| Actuarial Cost Method: | Entry Age Normal – Level percentage of payroll |
| Per Capita Cost Development: | Per capita costs were based on the fully-insured premium rates effective July 1, 2020. Premiums were combined by taking a weighted average based on the number of participants in each plan, and were then trended to the midpoint of the valuation year at assumed trend rates. Actuarial factors were then applied to the weighted average cost to estimate individuals retiree and spouse costs by age and by gender. |
| Valuation Date: | June 30, 2020 |
| Actuarial Models | <p>Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems Unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the model and reviews the test lives and results, under the supervision of the responsible actuary.</p> <p>Our claims costs assumptions are based on proprietary modeling software as well as models that were developed by others. These models generate per capita claims cost calculations that are used in our valuation software. Our Health Technical Services Unit, comprised of actuaries and programmers, is responsible for the initial development and maintenance of our health models. They are also responsible for testing models that we purchase from other vendors for reasonableness. The client team inputs the paid claims, enrollments, plan provisions and assumptions into these models and reviews the results for reasonableness, under the supervision of the responsible actuary.</p> |
| Roll-Forward Technique: | To project the Actuarially Determined Contribution for fiscal year 2022 and later, liabilities were rolled forward from June 30, 2020 using standard actuarial techniques. |
| Expected Return on Assets: | <p>7.00% (previously, 7.20%)</p> <p>Long-term rate of return on investments expected to be used to finance the benefits. The expected return was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce a long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.</p> |
| Discount Rate: | <p>7.00% (previously, 7.20%)</p> <p>The discount rate is equal to the expected return on assets.</p> |

Section 3: Supplemental Information

Salary Increases:

4.50% for Group 1 (excluding Teachers) and Group 2 employees
 4.75% for Group 4 employees

Service-related increases for Teachers:

| Years of Service | Rate per year (%) | Years of Service | Rate per year (%) |
|------------------|-------------------|------------------|-------------------|
| 0 | 7.50 | 9 | 6.10 |
| 1 | 7.10 | 10 | 5.90 |
| 2 | 7.00 | 11 | 5.70 |
| 3 | 6.90 | 12 | 5.20 |
| 4 | 6.80 | 13 | 4.70 |
| 5 | 6.70 | 14 | 4.35 |
| 6 | 6.60 | 15-16 | 4.20 |
| 7 | 6.50 | 17-19 | 4.10 |
| 8 | 6.30 | 20 and later | 4.00 |

Note:
 Total payroll is assumed to increase 3.50% per year.

Asset Valuation Method:

Market Value

Section 3: Supplemental Information

Mortality Rates:

Pre-Retirement: RP-2014 Blue Collar Employee Mortality Table projected generationally using Scale MP-2017

Healthy Retiree: RP-2014 Blue Collar Healthy Annuitant Mortality Table projected generationally using Scale MP-2017

Disabled Retiree: RP-2014 Blue Collar Healthy Annuitant Mortality Table set forward one year projected generationally using Scale MP-2017

Pre-Retirement (Teachers): RP-2014 White Collar Employee Mortality Table projected generationally with Scale MP-2019 (previously, MP-2016)

Healthy (Teachers): RP-2014 White Collar Healthy Annuitant Mortality Table projected generationally using Scale MP-2019 (previously, MP-2016)

Disabled (Teachers): RP-2014 White Collar Healthy Annuitant Mortality Table projected generationally with Scale MP-2019 (previously, MP-2016)

The underlying tables with generational projection to the ages of participants as of the measurement date reasonably reflect the mortality experience of the plan as of the measurement date. The mortality tables were then adjusted to future years using generational projection to reflect future mortality improvement between the measurement date and those years.

Non-Teacher Annuitant Mortality Rates:

| Age | Rate per year (%) | | | |
|-----|-------------------|--------|----------|--------|
| | Healthy | | Disabled | |
| | Male | Female | Male | Female |
| 60 | 0.85 | 0.57 | 0.91 | 0.62 |
| 70 | 1.97 | 1.40 | 2.16 | 1.54 |
| 80 | 5.19 | 3.82 | 5.74 | 4.24 |
| 90 | 14.64 | 11.19 | 16.18 | 12.43 |

Note:

Rates shown are before generational projection.

Section 3: Supplemental Information

Teacher Annuitant Mortality Rates:

| Age | Rate per year (%) | | | |
|-----|-------------------|--------|----------|--------|
| | Healthy | | Disabled | |
| | Male | Female | Male | Female |
| 60 | 0.52 | 0.39 | 0.52 | 0.39 |
| 70 | 1.24 | 1.06 | 1.24 | 1.06 |
| 80 | 3.73 | 3.04 | 3.73 | 3.04 |
| 90 | 12.62 | 10.02 | 12.62 | 10.02 |

Note:
Rates shown are before generational projection.

Termination Rates Before Retirement:

| Age | Groups 1 and 2 (excluding Teachers) - Rate per year (%) | | |
|-----|---|--------|------------|
| | Mortality | | |
| | Male | Female | Disability |
| 20 | 0.05 | 0.02 | 0.01 |
| 25 | 0.06 | 0.02 | 0.02 |
| 30 | 0.06 | 0.02 | 0.03 |
| 35 | 0.07 | 0.03 | 0.06 |
| 40 | 0.08 | 0.04 | 0.10 |
| 45 | 0.13 | 0.07 | 0.15 |
| 50 | 0.22 | 0.12 | 0.19 |
| 55 | 0.36 | 0.19 | 0.24 |
| 60 | 0.61 | 0.27 | 0.28 |

Notes:
55% of the disability rates shown represent accidental disability.
55% of the mortality rates shown represent accidental death.
Rates shown are before generational projection.

Section 3: Supplemental Information

| Group 4 - Rate per year (%) | | | |
|------------------------------------|-------------|---------------|-------------------|
| Mortality | | | |
| Age | Male | Female | Disability |
| 20 | 0.05 | 0.02 | 0.10 |
| 25 | 0.06 | 0.02 | 0.20 |
| 30 | 0.06 | 0.02 | 0.30 |
| 35 | 0.07 | 0.03 | 0.30 |
| 40 | 0.08 | 0.04 | 0.30 |
| 45 | 0.13 | 0.07 | 1.00 |
| 50 | 0.22 | 0.12 | 1.25 |
| 55 | 0.36 | 0.19 | 1.20 |
| 60 | 0.61 | 0.27 | 0.85 |

Notes:

90% of the disability rates shown represent accidental disability.

90% of the mortality rates shown represent accidental death.

Rates shown are before generational projection.

Section 3: Supplemental Information

| Teachers – Rate per year (%) | | | |
|-------------------------------------|-------------|---------------|-------------------|
| Mortality | | | |
| Age | Male | Female | Disability |
| 20 | 0.03 | 0.01 | 0.00 |
| 25 | 0.03 | 0.01 | 0.01 |
| 30 | 0.03 | 0.02 | 0.01 |
| 35 | 0.04 | 0.02 | 0.01 |
| 40 | 0.04 | 0.03 | 0.01 |
| 45 | 0.07 | 0.06 | 0.03 |
| 50 | 0.12 | 0.09 | 0.05 |
| 55 | 0.20 | 0.14 | 0.07 |
| 60 | 0.33 | 0.21 | 0.07 |

Notes:

75% of the death rates shown represent accidental death.

35% of the disability rates shown represent accidental disability.

Rates shown are before generational projection.

Section 3: Supplemental Information

Withdrawal Rates:

| | | Rate per year (%) | |
|------------------|----------------|-------------------|---------|
| Years of Service | Groups 1 and 2 | Years of Service | Group 4 |
| 0 | 15.0 | 0 – 10 | 1.5 |
| 1 | 12.0 | 11+ | 0.0 |
| 2 | 10.0 | | |
| 3 | 9.0 | | |
| 4 | 8.0 | | |
| 5 - 9 | 7.6 | | |
| 10 - 14 | 5.4 | | |
| 15 - 19 | 3.3 | | |
| 20 - 24 | 2.0 | | |
| 25 - 29 | 5.9 | | |
| 30+ | 5.4 | | |

Teachers - Rate per year (%)

| Age | 0 – 4 Years of Service | | 5 – 9 Years of Service | | 10+ Years of Service | |
|-----|------------------------|--------|------------------------|--------|----------------------|--------|
| | Male | Female | Male | Female | Male | Female |
| 20 | 13.0 | 10.0 | 5.5 | 7.0 | 1.5 | 5.0 |
| 30 | 15.0 | 15.0 | 5.4 | 8.8 | 1.5 | 4.5 |
| 40 | 13.3 | 10.5 | 5.2 | 5.0 | 1.7 | 2.2 |
| 50 | 16.2 | 9.8 | 7.0 | 5.0 | 2.3 | 2.0 |

Section 3: Supplemental Information

| Retirement Rates: | Rate per year (%) | | |
|-------------------|-------------------|--|---------|
| | Age | Groups 1 and 2 (excluding Teachers) | Group 4 |
| | 55 | 5.0 | 15.0 |
| | 56 – 58 | 2.5 | 10.0 |
| | 59 | 2.5 | 15.0 |
| | 60 | 10.0 | 20.0 |
| | 61 | 15.0 | 20.0 |
| | 62 - 63 | 10.0 | 25.0 |
| | 64 | 10.0 | 30.0 |
| | 65 | 40.0 | 100.0 |
| | 66 - 67 | 25.0 | -- |
| | 68 - 69 | 30.0 | -- |
| | 70 | 100.0 | -- |

Section 3: Supplemental Information

| Age | Teachers - Rate per year (%) | | | | | |
|---------|------------------------------|--------|---------|--------|------------|--------|
| | Years of Service | | | | | |
| | Less than 20 | | 20 - 29 | | 30 or more | |
| | Male | Female | Male | Female | Male | Female |
| 50 – 52 | -- | -- | 1.0 | 1.0 | 2.0 | 1.5 |
| 53 | -- | -- | 1.5 | 1.0 | 2.0 | 1.5 |
| 54 | -- | -- | 2.5 | 1.0 | 2.0 | 2.0 |
| 55 | 5.0 | 3.0 | 3.0 | 3.0 | 6.0 | 5.0 |
| 56 | 5.0 | 3.0 | 6.0 | 5.0 | 20.0 | 15.0 |
| 57 | 5.0 | 4.0 | 10.0 | 8.0 | 40.0 | 35.0 |
| 58 | 5.0 | 8.0 | 15.0 | 10.0 | 50.0 | 35.0 |
| 59 | 10.0 | 8.0 | 20.0 | 15.0 | 50.0 | 35.0 |
| 60 | 10.0 | 10.0 | 25.0 | 20.0 | 40.0 | 35.0 |
| 61 | 20.0 | 12.0 | 30.0 | 25.0 | 40.0 | 35.0 |
| 62 | 20.0 | 12.0 | 35.0 | 30.0 | 35.0 | 35.0 |
| 63 | 25.0 | 15.0 | 40.0 | 30.0 | 35.0 | 35.0 |
| 64 | 25.0 | 20.0 | 40.0 | 30.0 | 35.0 | 35.0 |
| 65 | 25.0 | 25.0 | 40.0 | 40.0 | 35.0 | 35.0 |
| 66 | 30.0 | 25.0 | 30.0 | 30.0 | 40.0 | 35.0 |
| 67 | 30.0 | 30.0 | 30.0 | 30.0 | 40.0 | 30.0 |
| 68 | 30.0 | 30.0 | 30.0 | 30.0 | 40.0 | 30.0 |
| 69 | 30.0 | 30.0 | 30.0 | 30.0 | 40.0 | 30.0 |
| 70 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Dependents:

Demographic data was available for spouses of current retirees. For future retirees, husbands were assumed to be three years older than their wives. For future retirees who elect to continue their health coverage at retirement, 65% were assumed to have an eligible spouse who also opts for health coverage at that time.

Section 3: Supplemental Information

Per Capita Health Costs:

Fiscal year 2020 - 2021 medical and prescription drug claims costs are shown in the table below for retirees and for spouses at selected ages. These costs are net of deductibles and other benefit plan cost sharing provisions.

| Age | Non-Medicare Plans | | | | Medicare Plans | | | |
|-----|--------------------|----------|---------|---------|----------------|---------|---------|---------|
| | Retiree | | Spouse | | Retiree | | Spouse | |
| | Male | Female | Male | Female | Male | Female | Male | Female |
| 45 | \$9,013 | \$11,306 | \$5,590 | \$8,439 | N/A | N/A | N/A | N/A |
| 50 | 10,697 | 12,184 | 7,472 | 9,783 | N/A | N/A | N/A | N/A |
| 55 | 12,704 | 13,116 | 9,998 | 11,324 | N/A | N/A | N/A | N/A |
| 60 | 15,087 | 14,137 | 13,385 | 13,134 | N/A | N/A | N/A | N/A |
| 65 | 17,918 | 15,230 | 17,918 | 15,230 | \$4,404 | \$3,743 | \$4,404 | \$3,743 |
| 70 | 20,767 | 16,413 | 20,767 | 16,413 | 5,104 | 4,034 | 5,104 | 4,034 |
| 75 | 22,380 | 17,667 | 22,380 | 17,667 | 5,501 | 4,342 | 5,501 | 4,342 |
| 80 | 24,100 | 19,047 | 24,100 | 19,047 | 5,923 | 4,681 | 5,923 | 4,681 |

Annual Medicare Part B Reimbursement:

\$1,128 (portion paid by Town)

Weighted Average Annual Retiree Contribution Amount:

| Non-Medicare | Medicare |
|--------------|----------|
| \$1,904 | \$812 |

Section 3: Supplemental Information

Health Care Cost Trend Rates:

Health care trend measures the anticipated overall rate at which health plan costs are expected to increase in future years. The rates shown below are “net” and are applied to the net per capita costs shown above. The trend shown for a particular plan year is the rate that is applied to that year’s cost to yield the next year’s projected cost.

| Year Ending June 30 | Medical/ Prescription Drug | Medicare Part B Premium |
|---------------------|-------------------------------|----------------------------|
| 2021 | 7.00% | 4.50% |
| 2022 | 6.75% | 4.50% |
| 2023 | 6.50% | 4.50% |
| 2024 | 6.25% | 4.50% |
| 2025 | 6.00% | 4.50% |
| 2026 | 5.75% | 4.50% |
| 2027 | 5.50% | 4.50% |
| 2028 | 5.25% | 4.50% |
| 2029 | 5.00% | 4.50% |
| 2030 | 4.75% | 4.50% |
| 2031 & later | 4.50% | 4.50% |

The trend rate assumptions were developed using Segal’s internal guidelines, which are established each year using data sources such as the 2020 Segal Health Trend Survey, internal client results, trends from other published surveys prepared by the S&P Dow Jones Indices, consulting firms and brokers, and CPI statistics published by the Bureau of Labor Statistics.

Retiree Contribution Increase Rate:

Retiree contributions for medical and prescription drug coverage are expected to increase with medical trend.

Administrative Expenses:

Administrative expenses are assumed to be included in the fully insured premium rates.

Participation and Coverage Election:

100% of active employees with coverage are assumed to elect retiree coverage. We have loaded active liabilities by 20% to account for current employees who have waived health coverage but are expected to receive coverage through the Town as retirees.

100% of retirees over age 65 are assumed to remain in their current medical plan for life.

For future retirees hired before 1986 and current retirees under age 65, 95% are assumed to be eligible for Medicare and are assumed to enroll in a Medicare plan upon reaching age 65 and 5% are assumed to be ineligible for Medicare and to remain enrolled in a non-Medicare indemnity plan.

For future over-65 retirees hired in 1986 or later, 100% are assumed to enroll in a Medicare plan.

Section 3: Supplemental Information

| | |
|--|---|
| | Life insurance elections were available for current retirees. 100% future retirees with medical coverage are assumed to have life insurance coverage. |
| Plan Design: | Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit III. |
| Missing Participant Data: | A missing census item for a given participant was assumed to equal the average value of that item over all other participants of the same status for whom the item is known. |
| Health Care Reform Assumption: | <p>This valuation does not include the potential impact of any future changes due to the Patient Protection and Affordable Care Act (PPACA) and the Health Care and Education Reconciliation Act (HCERA) of 2010 other than those previously adopted as of the valuation date.</p> <p>The excise tax on high cost health plans (part of the Patient Protection and Affordable Care Act) was repealed effective December 20, 2019.</p> |
| Demographic and Salary Increase Assumptions: | <p>Many of the demographic assumptions used in this valuation for non-teachers (including mortality, disability, turnover, and retirement) and the salary increase assumptions are the same as used in the Town of Brookline Contributory Retirement System Actuarial Valuation and Review as of January 1, 2020, dated July 27, 2020, completed by Segal. The assumptions used in this valuation for teachers are the same as used in the Massachusetts Teachers' Retirement System Actuarial Valuation Report as of January 1, 2019, dated October 17, 2019, completed by PERAC, with the exception of the mortality improvement scale which was updated. A review of these demographic assumptions is beyond the scope of this assignment, however, we have no reason to doubt the reasonableness of these assumptions.</p> <p>The remaining demographic assumptions, such as percent married, relative ages of spouses, and enrollment elections, were based on the experience of the Plan and the experience of similar plans.</p> |
| Justification for Assumption Changes Since Prior Valuation: | <p>Based on past experience and future expectations, the following actuarial assumptions were changed:</p> <ul style="list-style-type: none">• The per capita health costs, retiree contributions and trends were updated to reflect current experience.• The mortality projection scale for teachers was updated.• The impact of the excise tax on high cost health plans (part of the Patient Protection and Affordable Care Act) was removed, as the tax was repealed effective December 20, 2019.• The discount rate was decreased from 7.20% to 7.00%. |

Section 3: Supplemental Information

Exhibit III: Summary of Plan

This exhibit summarizes the major benefit provisions as included in the valuation. To the best of our knowledge, the summary represents the substantive plans as of the measurement date. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

| | |
|-------------------------------|--|
| Eligibility: | <p>Retired and receiving a pension from the Town of Brookline Contributory Retirement System or the Massachusetts Teachers' Retirement System.</p> <ul style="list-style-type: none">• Members hired before April 2, 2012<ul style="list-style-type: none">– Group 1 and Group 2 (including Teachers):<ul style="list-style-type: none">• Retirees with at least 10 years of creditable service are eligible at age 55;• Retirees with at least 20 years of creditable service are eligible at any age.– Group 4<ul style="list-style-type: none">• Retirees are eligible at age 55;• Retirees with at least 20 years of creditable service are eligible at any age.• Members hired on or after April 2, 2012<ul style="list-style-type: none">– Group 1 (including Teachers):<ul style="list-style-type: none">• Retirees with at least 10 years of creditable service are eligible at age 60.– Group 2<ul style="list-style-type: none">• Retirees with at least 10 years of creditable service are eligible at age 55.– Group 4<ul style="list-style-type: none">• Retirees are eligible at age 55;• Retirees with at least 10 years of creditable service are eligible at age 50. |
| Disability: | <p>Accidental (job-related) Disability has no age or service requirement.</p> <p>Ordinary (non-job related) Disability has no age requirement but requires 10 years of creditable service.</p> |
| Pre-Retirement Death: | <p>Surviving spouses of members who die in active service on Accidental (job-related) Death are eligible at any age.</p> <p>Surviving spouses of members who die in active service on Ordinary (non-job related) Death are eligible after two years of service.</p> |
| Post-Retirement Death: | <p>Surviving spouse is eligible.</p> |
| Benefit Types: | <p>Medical and prescription drug benefits are provided to all eligible retirees through plans offered through the Commonwealth of Massachusetts Group Insurance Commission (GIC). (Dental coverage is offered but is 100% retiree paid and therefore has no impact on this valuation.) A life insurance benefit of \$5,000 is provided, and the Town pays 50% of the retiree life insurance premium and a portion of the Medicare Part B premium.</p> |

Section 3: Supplemental Information

| | |
|--------------------------------------|--|
| Duration of Coverage: | Lifetime. |
| Dependent Benefits: | Medical and Prescription Drugs. |
| Dependent Coverage: | Benefits are payable to a spouse for their lifetime, regardless of when the retirees dies. |
| MGL Chapter 32B, Section 18A: | Effective July 1, 2011. |
| Retiree Contributions: | Premium rates and retiree contributions as of July 1, 2020 are summarized below: |

| Non-Medicare Actives and Retirees | Subscribers | | | Monthly Premium | Town Cost | Retiree Cost | Retiree Cost % |
|---|-------------|----------|-------|-----------------|------------|--------------|----------------|
| | Active | Retirees | Total | | | | |
| Allways Health Partners (formerly NHP) | | | | | | | |
| • Individual | 86 | 5 | 91 | \$687.87 | \$570.93 | \$116.94 | 17% |
| • Family | 58 | 2 | 60 | \$1,789.45 | \$1,485.24 | \$304.21 | 17% |
| Fallon Community Health Plan Direct Care | | | | | | | |
| • Individual | 26 | 0 | 26 | \$618.59 | \$513.43 | \$105.16 | 17% |
| • Family | 6 | 0 | 6 | \$1,561.48 | \$1,296.03 | \$265.45 | 17% |
| Fallon Community Health Plan Select Care | | | | | | | |
| • Individual | 10 | 0 | 10 | \$836.19 | \$694.04 | \$142.15 | 17% |
| • Family | 12 | 1 | 13 | \$2,033.04 | \$1,687.42 | \$345.62 | 17% |
| Harvard Pilgrim Independence Plan | | | | | | | |
| • Individual | 137 | 44 | 184 | \$917.18 | \$761.26 | \$155.92 | 17% |
| • Family | 208 | 30 | 238 | \$2,239.19 | \$1,858.53 | \$380.66 | 17% |
| Harvard Pilgrim Primary Choice | | | | | | | |
| • Individual | 182 | 11 | 193 | \$665.43 | \$552.31 | \$113.12 | 17% |
| • Family | 129 | 3 | 132 | \$1,697.02 | \$1,408.53 | \$288.49 | 17% |

Section 3: Supplemental Information

| | | | | | | | |
|--|--------------|------------|--------------|------------|------------|----------|-----|
| Health New England | | | | | | | |
| • Individual | 1 | 0 | 1 | \$594.29 | \$493.26 | \$101.03 | 17% |
| • Family | 2 | 0 | 2 | \$1,414.80 | \$1,174.28 | \$240.52 | 17% |
| Tufts Health Plan Navigator | | | | | | | |
| • Individual | 171 | 32 | 206 | \$799.04 | \$663.20 | \$135.84 | 17% |
| • Family | 252 | 24 | 276 | \$1,951.46 | \$1,619.71 | \$331.75 | 17% |
| Tufts Health Plan Spirit | | | | | | | |
| • Individual | 71 | 2 | 73 | \$606.68 | \$503.54 | \$103.14 | 17% |
| • Family | 22 | 1 | 23 | \$1,461.55 | \$1,213.09 | \$248.46 | 17% |
| Unicare State Indemnity Plan/Basic with CIC | | | | | | | |
| • Individual | 3 | 14 | 19 | \$1,163.76 | \$756.44 | \$407.32 | 35% |
| • Family | 4 | 6 | 10 | \$2,582.71 | \$1,678.76 | \$903.95 | 35% |
| Unicare State Indemnity Plan/Community Choice | | | | | | | |
| • Individual | 62 | 1 | 63 | \$552.57 | \$458.63 | \$93.94 | 17% |
| • Family | 38 | 3 | 41 | \$1,368.05 | \$1,135.48 | \$232.57 | 17% |
| Unicare State Indemnity Plan/PLUS | | | | | | | |
| • Individual | 59 | 18 | 78 | \$723.74 | \$600.70 | \$123.04 | 17% |
| • Family | 67 | 9 | 76 | \$1,722.50 | \$1,429.68 | \$292.83 | 17% |
| Non-Medicare Total | 1,606 | 206 | 1,812 | | | | |

Section 3: Supplemental Information

| | Subscribers | | Monthly Premium | Town Cost | Retiree Cost | Retiree Cost % |
|--|--------------|------------|-----------------|-----------|--------------|----------------|
| | Active | Retirees | | | | |
| Harvard Pilgrim Medicare Enhanced | N/A | 338 | \$404.04 | \$335.35 | \$68.69 | 17% |
| Tufts Health Plan Medicare Complement | N/A | 74 | \$383.88 | \$318.62 | \$65.26 | 17% |
| Tufts Health Plan Medicare Preferred | N/A | 22 | \$325.13 | \$269.86 | \$55.27 | 17% |
| Unicare State Indemnity Plan/OME with CIC | N/A | 356 | \$399.86 | \$331.88 | \$67.98 | 17% |
| Unicare State Indemnity Plan/OME without CIC | N/A | 2 | \$388.80 | \$322.70 | \$66.10 | 17% |
| Medicare Total | | 792 | | | | |
| Total | 1,606 | 998 | | | | |

Notes:

73 of 854 over-65 retirees are in a non-Medicare plan.

In addition, there are 688 spouses of retirees covered under an individual or family policy.

Excludes one active participant who was reported as enrolled in a Medicare plan.

Plan Changes Since the Prior Valuation:

None.

Section 3: Supplemental Information

Exhibit IV: Definition of Terms

The following list defines certain technical terms for the convenience of the reader:

| | |
|---|---|
| Assumptions or Actuarial Assumptions: | The estimates on which the cost of the Plan is calculated including: <ol style="list-style-type: none">1. Investment return — the rate of investment yield that the Plan will earn over the long-term future;2. Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;3. Retirement rates — the rate or probability of retirement at a given age;4. Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement. |
| Actuarial Accrued Liability (AAL): | Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions. |
| Unfunded Actuarial Accrued Liability (UAAL): | The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There are many approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time. |
| Normal Cost: | The amount of contributions required to fund the benefit allocated to the current year of service. |
| Actuarially Determined Contribution (ADC): | A target or recommended contribution to an OPEB plan for the reporting period based on the most recent measurement available. |
| Valuation Date: | The date at which the actuarial valuation is performed |
| Covered Employee Payroll: | The payroll of the employees that are provided OPEB benefits |
| Entry Age Actuarial Cost Method: | An actuarial cost method where the present value of the projected benefits for an individual is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age |
| Health Care Cost Trend Rates: | The rate of change in per capita health costs over time |
| Discount Rate: | The interest rate used to determine the actuarial present value of projected benefit payments. |
| Expected Return on Assets: | The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next. |