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## **TOWN OF WEST HARTFORD PENSION PLAN**

**Full Actuarial Valuation as of July 1, 2019  
To Determine Funding for Fiscal Year 2020-21**

**Prepared by**

**Rebecca A. Sielman, FSA**  
Consulting Actuary

**Yelena Pelletier, ASA**  
Consulting Actuary

80 Lamberton Road  
Windsor, CT 06095 USA  
(860) 687-2110  
milliman.com

## Table of Contents

	<b>Page</b>
<b>CERTIFICATION</b>	1
<b>I EXECUTIVE SUMMARY</b>	3
<b>II PLAN ASSETS</b>	
<b>A.</b> Summary of Fund Transactions	15
<b>B.</b> Development of Actuarial Value of Assets	16
<b>III DEVELOPMENT OF CONTRIBUTION</b>	
<b>A.</b> Past Service Cost	17
<b>B.</b> Actuarially Determined Contribution	18
<b>C.</b> Breakdown of Actuarially Determined Contribution by Town / BOE	19
<b>D.</b> Long Range Forecast	20
<b>E.</b> History of Funded Status	21
<b>F.</b> History of Town Contributions	22
<b>G.</b> Tread Water Amount	23
<b>IV MEMBERSHIP DATA</b>	
<b>A.</b> Reconciliation of Membership from Prior Valuation	24
<b>B.</b> Statistics of Active Membership	25
<b>C.</b> Distribution of Active Members	26
<b>D.</b> Statistics of Inactive Membership	27
<b>E.</b> Distribution of Inactive Members	28
<b>V ANALYSIS OF RISK</b>	
<b>A.</b> Introduction	29
<b>B.</b> Risk Identification and Assessment	30
<b>C.</b> Maturity Measures	34
<b>APPENDICES</b>	
<b>A.</b> Actuarial Funding Method	35
<b>B.</b> Actuarial Assumptions	36
<b>C.</b> Summary of Plan Provisions	39
<b>D.</b> Glossary	51

## Certification

We have performed a full actuarial valuation of the Plan as of July 1, 2019 to determine funding for fiscal year 2020-21. This report presents the results of our valuation.

The ultimate cost of a pension plan is the total amount needed to provide benefits for plan members and beneficiaries and to pay the expenses of administering the plan. Pension costs are met by contributions and by investment return on plan assets. The principal purpose of this report is to calculate the Actuarially Determined Contribution based on the policies and assumptions adopted by the Town. In addition, this report provides:

- A valuation of plan assets and liabilities to review the year-to-year progress of funding.
- Review of plan experience for the previous year to ascertain whether the assumptions and methods employed for valuation purposes are reflective of actual events and remain appropriate for prospective application.
- Assessment of the relative funded position of the plan, i.e., through a comparison of plan assets and projected plan liabilities.
- Comments on any other matters which may be of assistance in the funding and operation of the plan.

This report may not be used for purposes other than those listed above without Milliman's prior written consent. If this report is distributed to other parties, it must be copied in its entirety, including this certification section. Determinations for other purposes, such as for financial reporting in accordance with GASB standards, could be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the Town of West Hartford ("Town"). To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions: (a) the Town may provide a copy of Milliman's work, in its entirety, to the Town's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the Town; and (b) the Town may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law. No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

In preparing this report, we relied on employee census data and financial information as of the valuation date, furnished by the Town. We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have found them to be reasonably consistent and comparable with data used for other purposes. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

## Certification

Figures for periods prior to July 1, 2019 have been obtained from actuarial valuation reports prepared by Hooker & Holcombe and from the Town's Comprehensive Annual Financial Reports.

The calculations reported herein have been made on a basis consistent with our understanding of the Town's funding policy. Additional determinations may be needed for purposes other than meeting funding requirements, such as judging benefit security at plan termination or meeting employer accounting requirements.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge, this report is complete and accurate and all costs and liabilities were determined in conformance with generally accepted actuarial principles and practices which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting recommendations of the American Academy of Actuaries and are based on actuarial assumptions and methods adopted by the Authority. We believe that the actuarial assumptions and methods used in this actuarial valuation are reasonable for valuing the benefits provided under the Plan.

This valuation is only an estimate of the Plan's financial condition as of a single date. It can neither predict the Plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

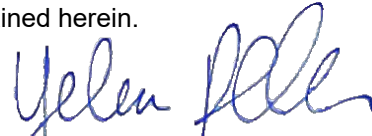
The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



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Rebecca A. Sielman, FSA  
Consulting Actuary



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Yelena Pelletier, ASA  
Consulting Actuary

## Section I - Executive Summary Changes Since the Prior Valuation

### Plan Changes

This valuation reflects the plan changes from the most recent contract between the Town and the West Hartford Police Officer's Association. The contract details several changes to retirement benefits as it pertains to Tier I, Tier II, and Tier III members. The changes decreased the Accrued Liability by approximately \$70,000, increased the Net Normal Cost by approximately \$136,000, and increased the Actuarially Determined Contribution by about \$141,000.

### Changes in Actuarial Methods and Assumptions Adopted by Pension Board

The mortality assumption has been updated to the Pub-2010 table with generational projection per the Ultimate MP Scale. The impact on the Accrued Liability as a result of this mortality assumption update will be recognized over two years with 50% of the liability increase recognized as of July 1, 2019. Beginning with the July 1, 2020 valuation, the Accrued Liability will recognize 100% of the increase attributable to the Pub-2010 table with generational projection per the Ultimate MP scale. Previously, the mortality assumption was the RP-2000 table (with blue collar adjustment for certain groups) with generational projection per Scale BB.

The interest rate assumption was lowered from 7.125% to 6.99% and the amortization growth rate was raised from 1.75% to 2.75%. Note that the higher amortization rate will lead to larger contribution increases in future years.

These assumption changes in combination increased the Accrued Liability by approximately \$20.1 million and decreased the Actuarially Determined Contribution by about \$777,000.

If the full impact of the mortality assumption was reflected for the July 1, 2019 valuation, the Accrued Liability and the Actuarially Determined Contribution would increase further by about \$8.3 million and \$1.1 million, respectively.

### Other Significant Changes

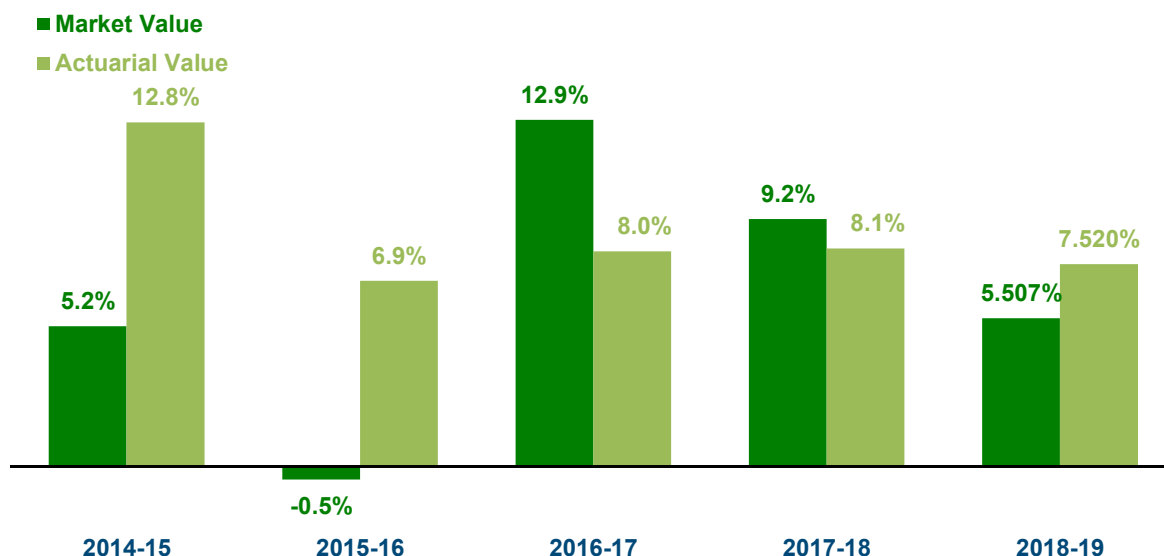
None.

## Section I - Executive Summary Assets

There are two different measures of the plan's assets that are used throughout this report. The Market Value is a snapshot of the plan's investments as of the valuation date. The Actuarial Value is a smoothed asset value designed to temper the volatile fluctuations in the market by recognizing investment gains or losses asymptotically over five years.

	<b>Market</b>	<b>Actuarial</b>
Value as of July 1, 2018	\$207,223,972	\$200,503,878
Town and Member Contributions	27,172,108	27,172,108
Investment Income	11,239,099	14,841,237
Benefit Payments and Administrative Expenses	<u>(33,464,130)</u>	<u>(33,464,130)</u>
Value as of July 1, 2019	212,171,049	209,053,093

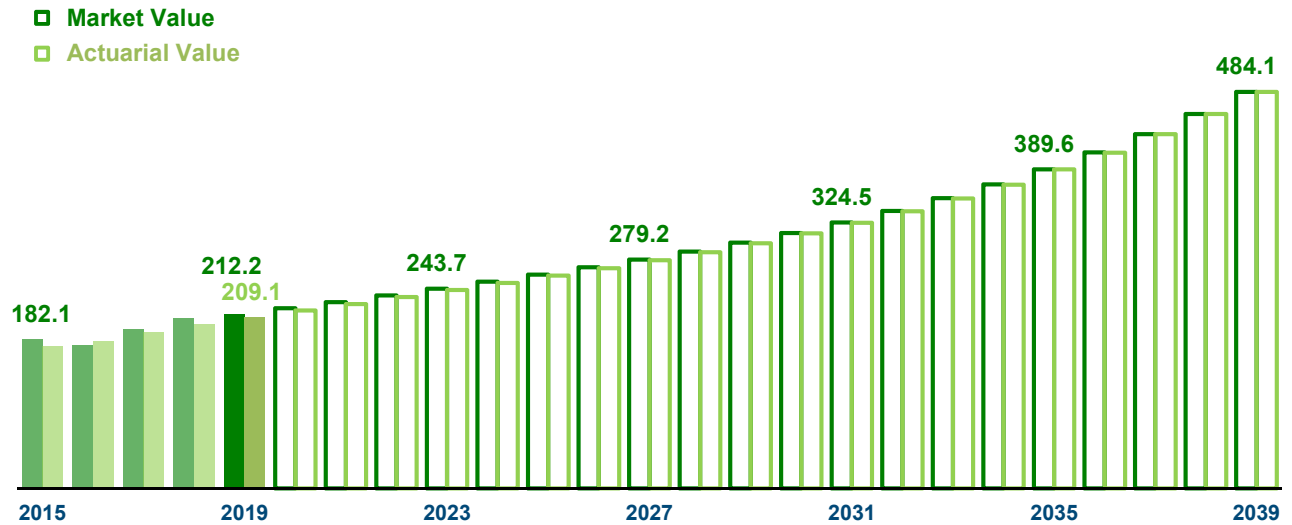
For fiscal year 2018-19, the plan's assets earned 5.507% on a Market Value basis and 7.520% on an Actuarial Value basis. The actuarial assumption for this period was 7.125%; the result is an asset loss of about \$3.30 million on a Market Value basis and a gain of about \$0.78 million on an Actuarial Value basis. Historical rates of return are shown in the graph below.



Please note that the Actuarial Value currently is less than the Market Value by \$3.12 million. This figure represents investment gains that will be gradually recognized in future years. This process will exert downward pressure on the Town's contribution, unless there are offsetting market losses.

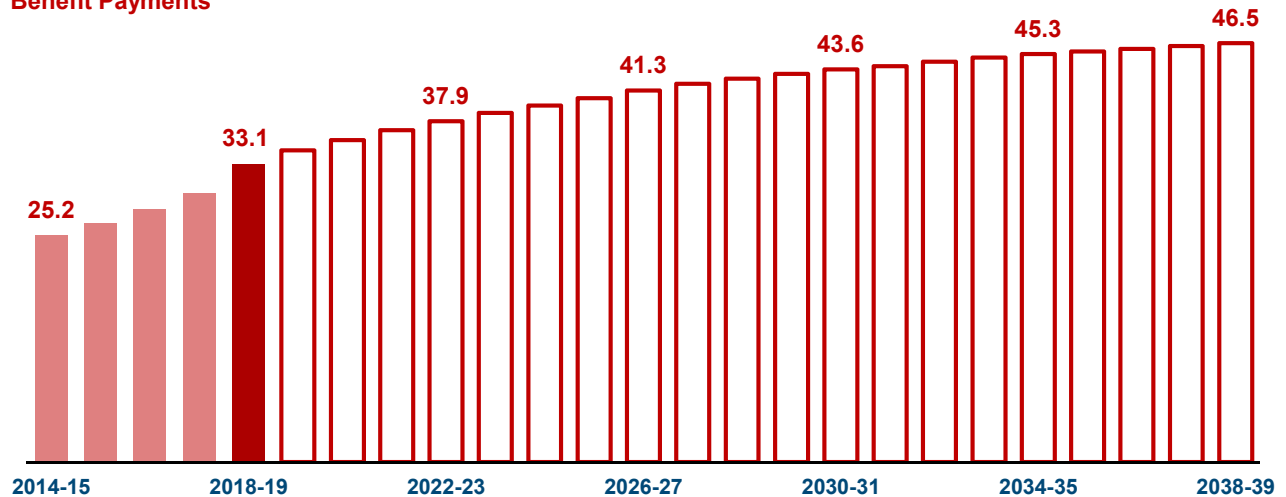
## Section I - Executive Summary Assets (continued)

The graph below shows how this year's asset values compare to where the plan's assets have been over the past several years and how they are projected to change over the next 20 years. For purposes of this projection, we have assumed that the Town always contributes the Actuarially Determined Contribution, the investments always earn the assumed interest rate each year, and plan experience matches what is anticipated by the assumptions.



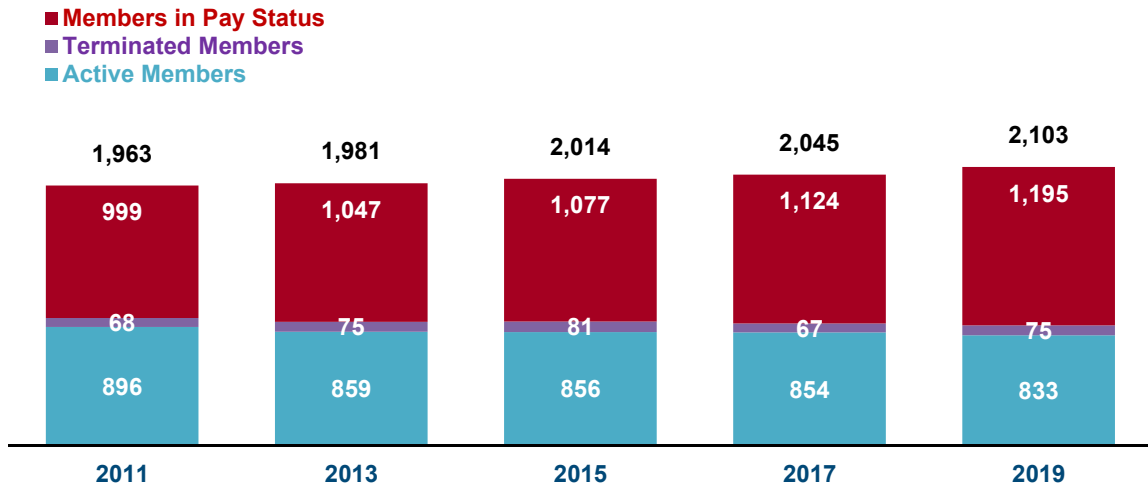
In 2018-19, the plan paid out \$33.1 million in benefits to members. Over the next 20 years, the plan is projected to pay out a total of \$839 million in benefits to members.

### Benefit Payments



## Section I - Executive Summary Membership

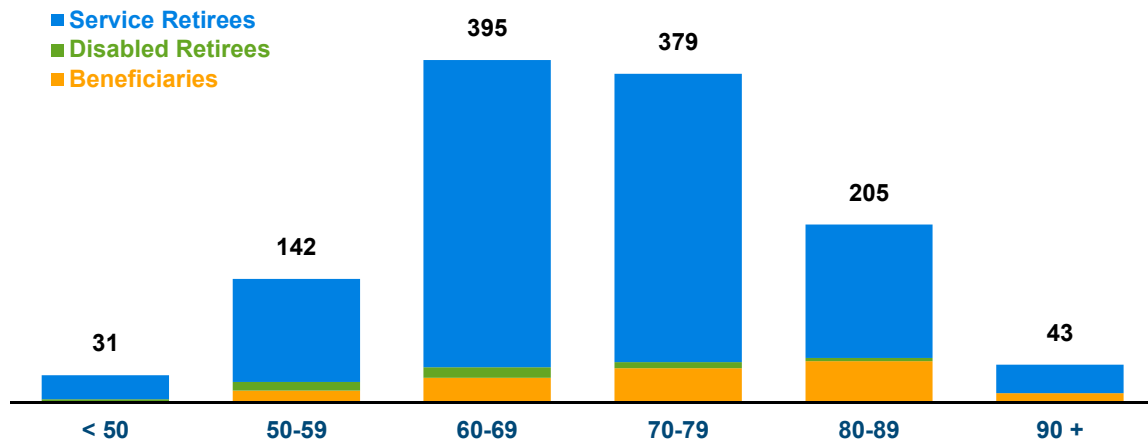
Full valuations, where complete membership data is collected and analyzed, are performed only in odd-numbered years. There are three basic categories of plan members included in the valuation: (1) members who are receiving monthly pension benefits, (2) former employees who have a vested right to benefits but have not yet started collecting, and (3) active employees who have met the eligibility requirements for membership. Note that full valuations are only performed in odd-numbered years, so membership data in even-numbered years is not available.



### Members in Pay Status on July 1, 2019

Service Retirees	1,022	Average Age	71.0
Disabled Retirees	36	Total Annual Benefit	\$33,500,302
Beneficiaries	137	Average Annual Benefit	28,034
Total	1,195		

The members in pay status fall across a wide distribution of ages:





## Section I - Executive Summary Membership (continued)

### Terminated Vested Members on July 1, 2019

Count	52
Average Age	50.5
Total Annual Benefit	\$585,536
Average Annual Benefit	11,260

### Nonvested Members Due Refunds on July 1, 2019

Count	23
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### Active Members on July 1, 2019

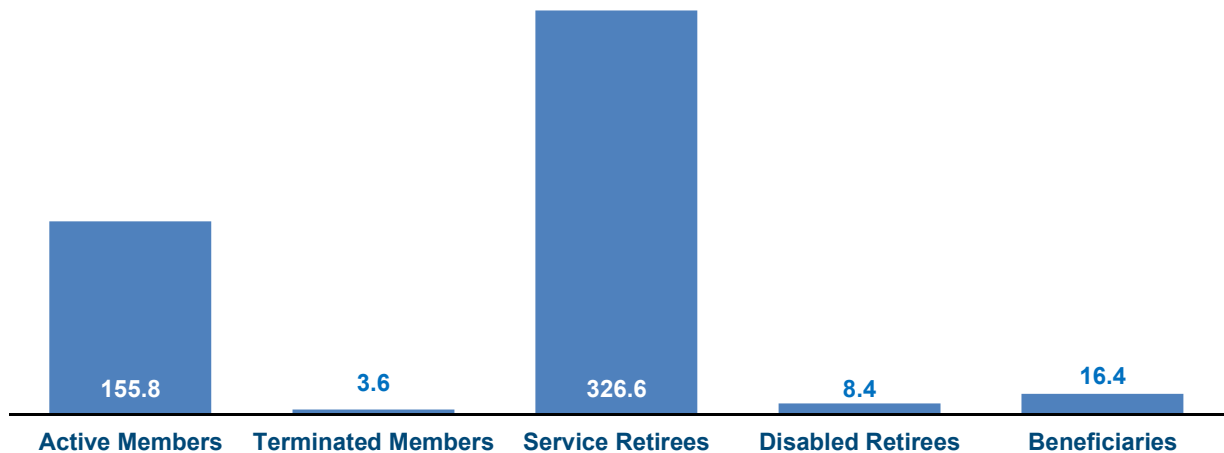
Count	833
Average Age	48.1
Average Service	11.5
Payroll	\$63,885,033
Average Payroll	76,693

The table below illustrates the age and years of service of the active membership:

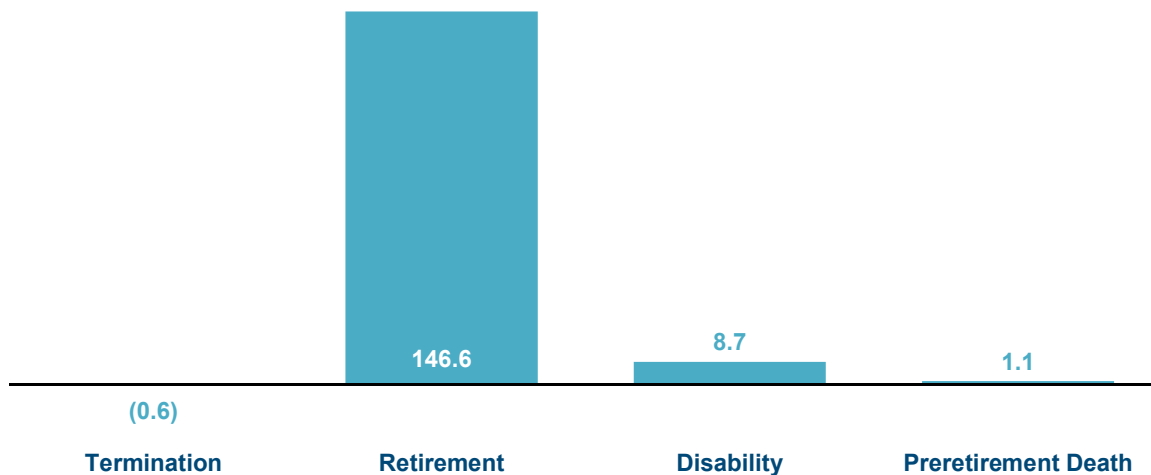
Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	19							19
25-29	50	13						63
30-34	37	32	11					80
35-39	32	22	24	7				85
40-44	26	9	15	27	4			81
45-49	34	8	20	24	11	2		99
50-54	36	19	17	22	17	8	4	123
55-59	28	12	27	29	17	7	8	128
60-64	7	6	20	26	14	10	8	91
65+	3	5	17	18	10	5	6	64
<b>Total</b>	<b>272</b>	<b>126</b>	<b>151</b>	<b>153</b>	<b>73</b>	<b>32</b>	<b>26</b>	<b>833</b>

## Section I - Executive Summary Accrued Liability

The Accrued Liability as of July 1, 2019 is \$510,843,434, which consists of the following pieces (in \$ millions):



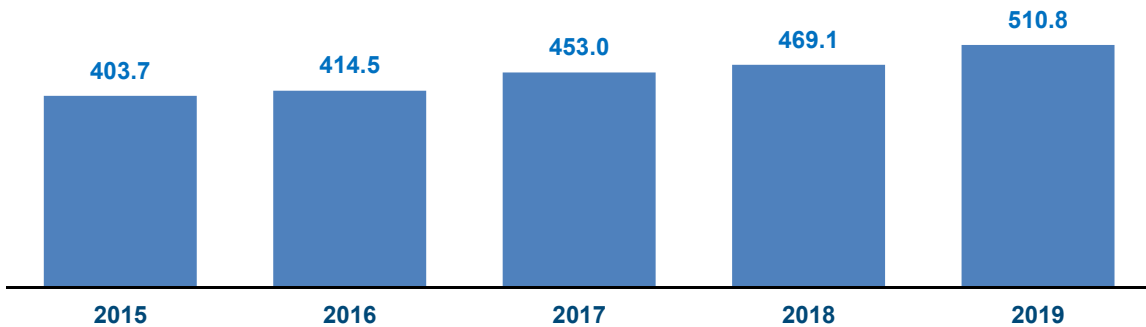
The Accrued Liability for active members can be broken down further by the different types of benefits provided by the plan:



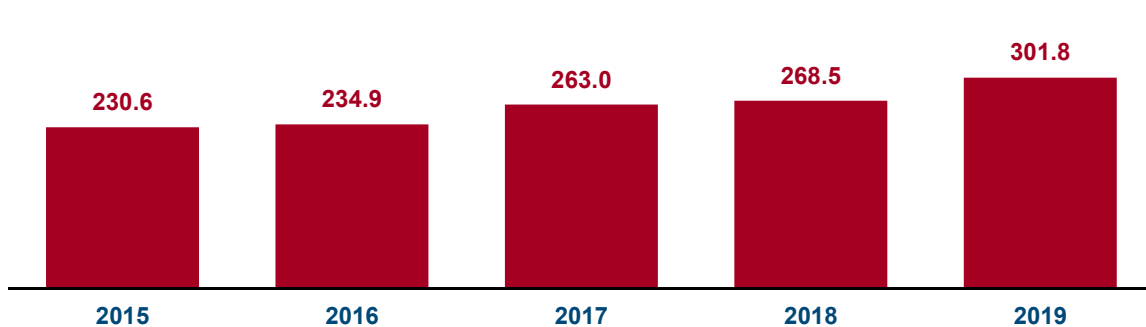
## Section I - Executive Summary Funded Status

The Accrued Liability grows over time as active members earn additional benefits, and goes down over time as members receive benefits; it may also change when there are changes to the plan provisions or changes in the actuarial assumptions. The Unfunded Accrued Liability is the dollar difference between the Accrued Liability and the Actuarial Value of Assets; the Funded Ratio is the ratio of the two.

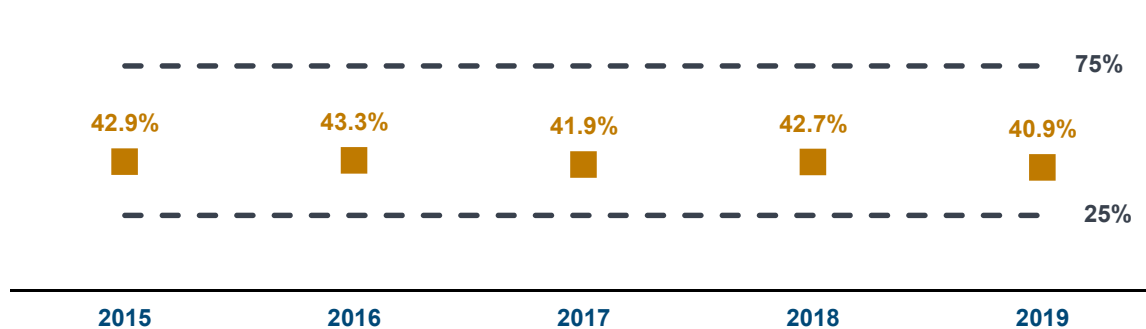
Accrued Liability (\$ millions)



Unfunded Accrued Liability (\$ millions)



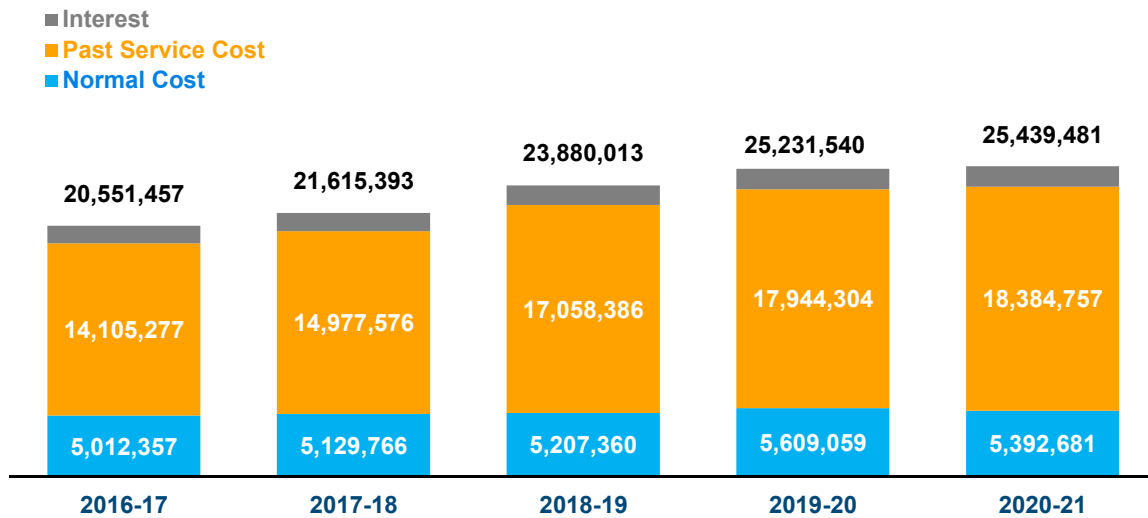
Funded Ratio



## Section I - Executive Summary Actuarially Determined Contribution

The Actuarially Determined Contribution consists of three pieces: a Normal Cost payment to fund the benefits earned each year, a Past Service Cost to gradually reduce any unfunded or surplus liability, and Interest to reflect the timing of the contribution relative to the valuation date.

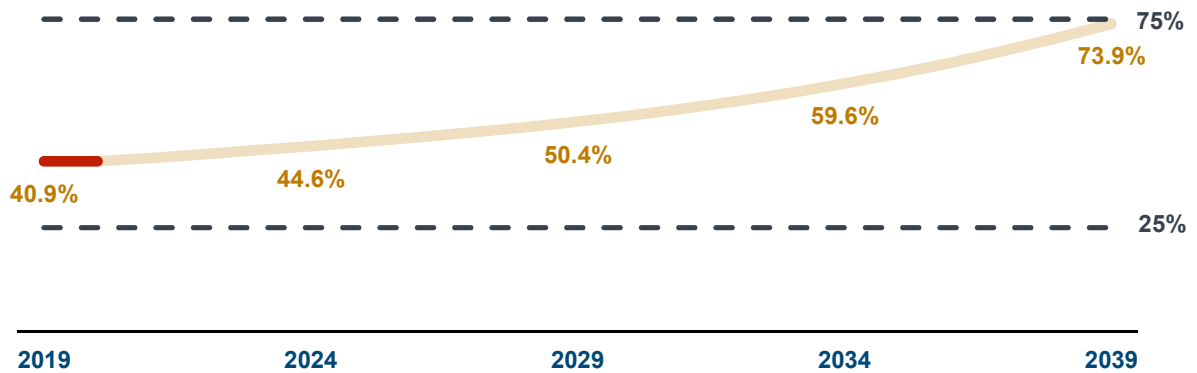
The Actuarially Determined Contribution for fiscal year 2020-21 is shown graphically below, along with the comparable figures for the preceding four fiscal years. Note that the Normal Cost is relatively consistent from year to year, whereas the Past Service Cost tends to be more volatile since it reflects the impact of asset performance.



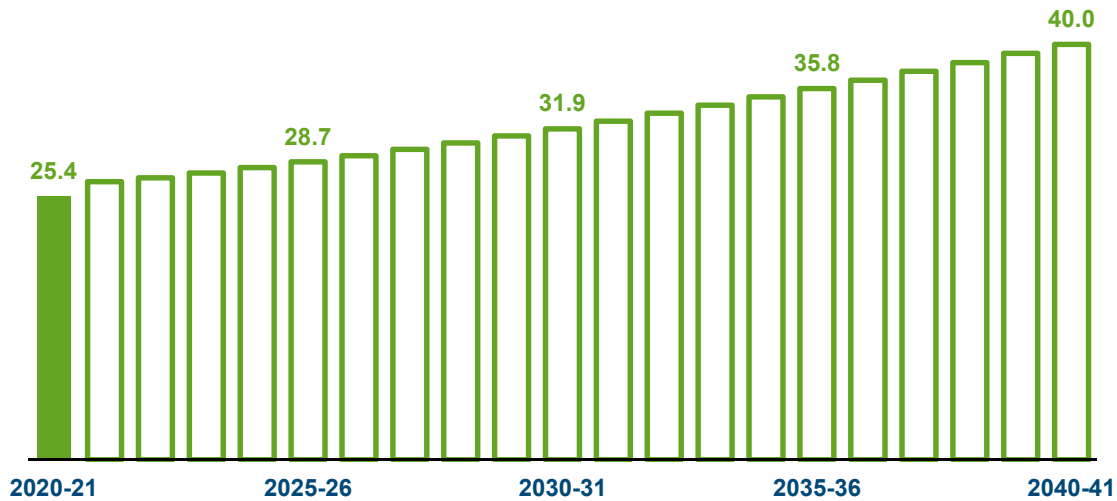
## Section I - Executive Summary Long-Range Forecast

If the Town pays the Actuarially Determined Contribution each year, the investments earn exactly the assumed interest rate each year, and there are no changes in the plan provisions or in the actuarial methods and assumptions, then we project the following changes in the plan's funded status and the long-range contribution levels:

### Funded Ratio



### Actuarially Determined Contribution (\$ millions)

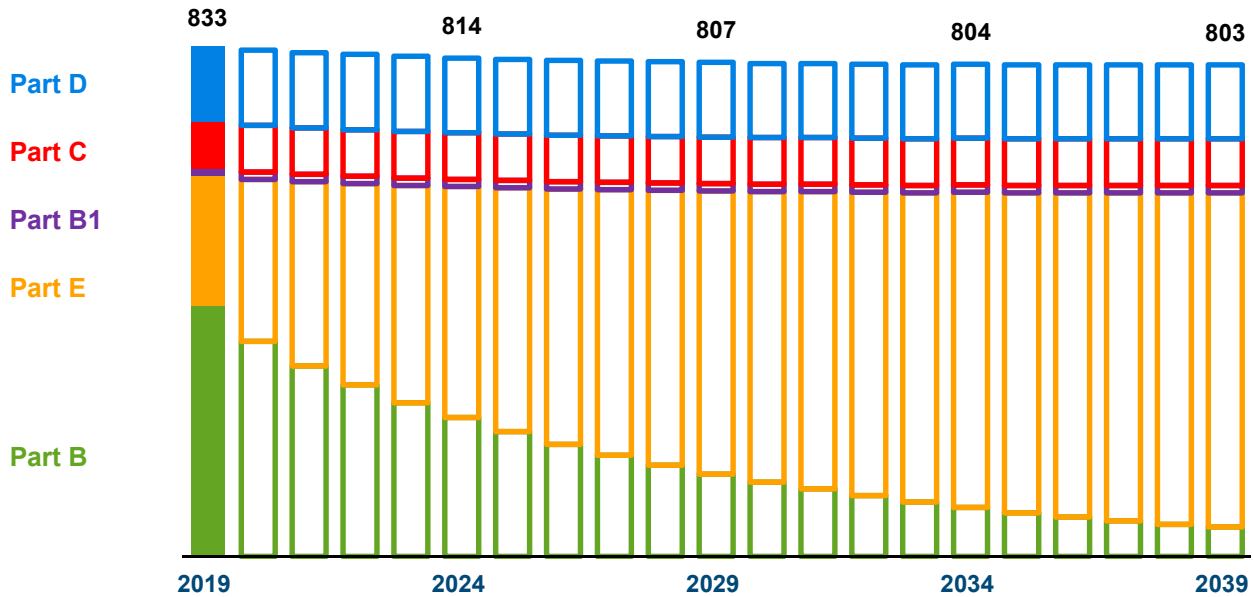


To the extent that there are future investment or liability gains or losses, changes in the actuarial assumptions or methods, or plan changes, the actual valuation results will differ from these forecasts. Please see Section III C for more details of the long range forecast.

## Section I - Executive Summary Long-Range Forecast

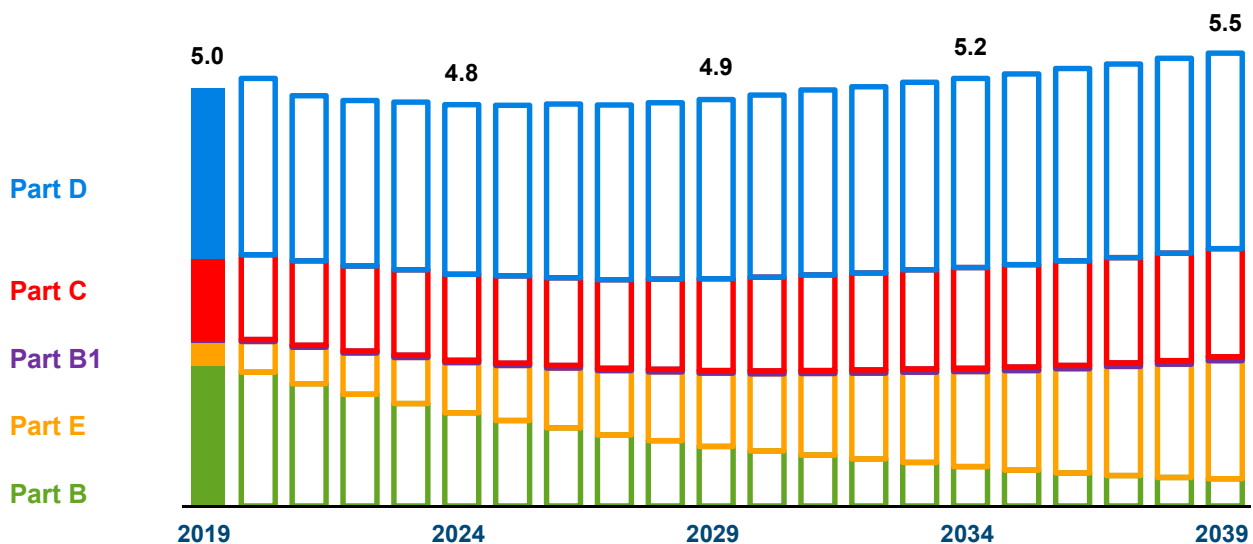
The Town's projected active member counts reflect the expected gradual replacement of terminating and retiring Part B members with replacement employees who are covered by the lower cost hybrid plan (Part E) or by the Town's defined contribution plan. This shift is illustrated in the graph below.

**Projected Active Member Count**



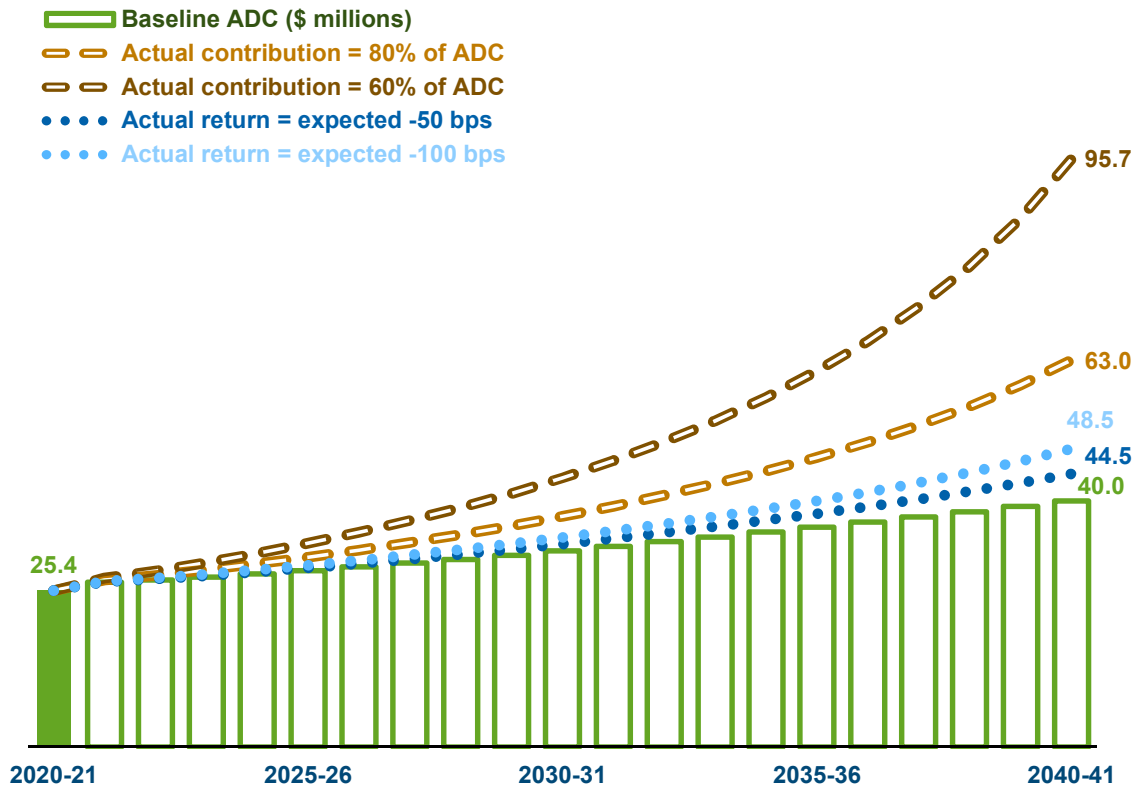
The Net Normal Cost component of the Actuarially Determined Contribution will likewise reflect this shift, as Part B active members with higher Net Normal Costs are gradually replaced by Part E active members with lower Net Normal Costs. Note that each individual active member's Net Normal Cost is expected to go up over time with salary growth, so for the plan as a whole the Net Normal Cost is projected to decrease in the short term and increase over the long term.

**Projected Net Normal Cost (\$ millions)**



## Section I - Executive Summary Long-Range Forecast (continued)

Pension benefits are paid for through a combination of contributions from the Town and from employees, and from investment income. If the Town pays less than the Actuarially Determined Contribution each year, or if the investments persistently earn less than the assumed interest rate, then the plan's funded status would suffer, and to compensate, the Town's contribution levels would be pushed higher. The risks of underfunding and underearning are illustrated in the hypothetical scenarios below:



The scenarios illustrated above are based on deterministic projections that assume emerging plan experience always exactly matches the actuarial assumptions except for the return scenarios noted above; in particular that actual asset returns will be constant in every year of the projection period. Underfunding and underearning with both result in actuarial losses. For illustration purposes, we have amortized these losses over the remaining amortization period, even if that period is less than 10 years. Variation in asset returns, contribution amounts, and many other factors may have a significant impact on the long-term financial health of the plan, the liquidity constraints on plan assets, and the Town's future contribution levels. Stochastic projections could be prepared that would enable the Town to understand the potential range of future results based on the expected variability in asset returns and other factors. Such analysis was beyond the scope of this engagement.

## Section I - Executive Summary Summary of Principal Results

<b>Membership as of</b>	<b>July 1, 2018</b>	<b>July 1, 2019</b>
Active Members	N/A	833
Terminated Members	N/A	75
Members in Pay Status	<u>N/A</u>	<u>1,195</u>
Total Count	N/A	2,103
 Payroll	 N/A	 63,885,033
<b>Assets and Liabilities as of</b>	<b>July 1, 2018</b>	<b>July 1, 2019</b>
Market Value of Assets	\$207,223,972	\$212,171,049
Actuarial Value of Assets	200,503,878	209,053,093
 Accrued Liability for Active Members	 189,637,019	 155,849,328
Accrued Liability for Terminated Members	2,860,501	3,623,480
Accrued Liability for Members in Pay Status	<u>276,553,220</u>	<u>351,370,626</u>
Total Accrued Liability	469,050,740	510,843,434
 Unfunded Accrued Liability	 268,546,862	 301,790,341
 Funded Ratio	 42.7%	 40.9%
<b>Actuarially Determined Contribution for Fiscal Year</b>	<b>2019-20</b>	<b>2020-21</b>
Normal Cost	\$5,609,059	\$5,392,681
Past Service Cost	17,944,304	18,384,757
Interest	<u>1,678,177</u>	<u>1,662,043</u>
Actuarially Determined Contribution	25,231,540	25,439,481
 Allocated to BOE		5,425,001
Allocated to Town		20,014,480



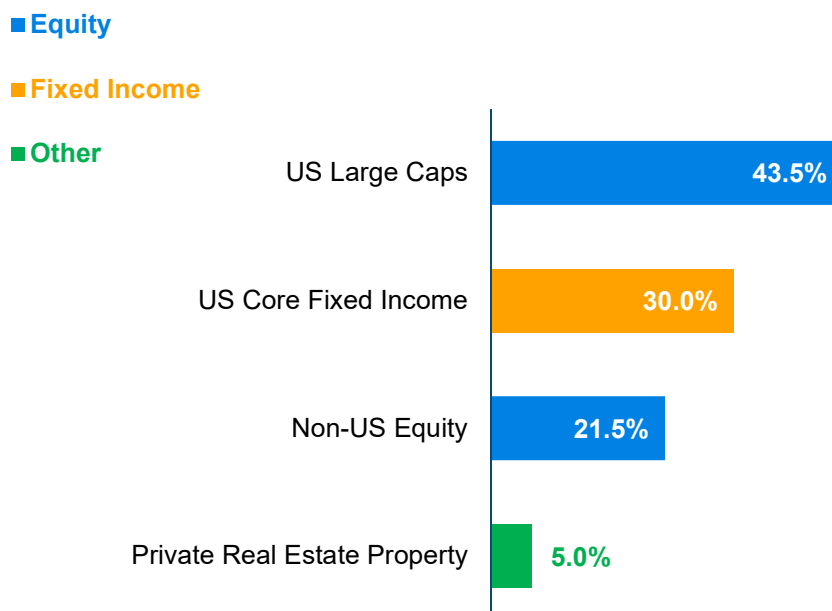
## Section II - Plan Assets

### A. Summary of Fund Transactions

<b>Market Value as of July 1, 2018</b>	<b>\$207,223,972</b>
Town Contributions	23,880,000
Member Contributions	3,292,108
Net Investment Income	11,239,099
Benefit Payments	(33,125,867)
Administrative Expenses	(338,263)
 <b>Market Value as of June 30, 2019</b>	 <b>212,171,049</b>
Expected Return on Market Value of Assets	14,541,235
Market Value (Gain)/Loss	3,302,136
Approximate Rate of Return *	5.507%

\* The rate shown here is not the dollar or time weighted investment yield rate which measures investment performance. It is an approximate net return assuming all activity occurred on average midway through the fiscal year.

#### Target Asset Allocation as of June 30, 2019



## Section II - Plan Assets

### B. Development of Actuarial Value of Assets

In order to minimize the impact of market fluctuations on the contribution level, the Town's funding policy includes use of an Actuarial Value of Assets that recognizes gains and losses asymptotically over a five year period. The Actuarial Value of Assets as of July 1, 2019 is determined below.

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1.	Expected Actuarial Value of Assets:	
	a. Actuarial Value of Assets as of July 1, 2018	\$200,503,878
	b. Town and Member Contributions	27,172,108
	c. Benefit Payments and Administrative Expenses	(33,464,130)
	d. Expected Earnings Based on 7.125% Interest	<u>14,061,748</u>
	e. Expected Actuarial Value of Assets as of July 1, 2019	208,273,604
2.	Market Value of Assets as of July 1, 2019	212,171,049
3.	Unrecognized Gains/(Losses): (2) - (1e)	3,897,445
4.	Amount Recognized as of July 1, 2019: 20% of (3)	779,489
5.	Actuarial Value of Assets as of July 1, 2019: (1e) + (4)	209,053,093
6.	Actuarial Value of Assets as a % of Market Value: (5) / (2)	98.5%
7.	Actual Earnings on Actuarial Value of Assets: (5) - [(1a) + (1b) + (1c)]	14,841,237
8.	Approximate Rate of Return on Actuarial Value of Assets	7.520%
9.	Actuarial Value (Gain)/Loss: (1d) - (7)	(779,489)

## Section III - Development of Contribution

### A. Past Service Cost

In determining the Past Service Cost, the Unfunded Accrued Liability is amortized as a level percent over a closed 30 year period starting on July 1, 2015.

	Part A	Part B	Part B1	Part C	Part D	Part E	Total
1. Accrued Liability							
Active Members	\$0	\$80,906,441	\$1,785,454	\$25,779,574	\$45,575,367	\$1,802,492	\$155,849,328
Terminated Members	0	3,281,971	0	0	318,353	23,156	3,623,480
Service Retirees	929,590	147,436,975	717,155	83,223,482	94,266,799	0	326,574,001
Disabled Retirees	0	3,682,939	0	3,516,244	1,186,383	0	8,385,566
Beneficiaries	<u>504,006</u>	<u>5,462,251</u>	<u>0</u>	<u>4,112,553</u>	<u>6,332,249</u>	<u>0</u>	<u>16,411,059</u>
Total Accrued Liability	1,433,596	240,770,577	2,502,609	116,631,853	147,679,151	1,825,648	510,843,434
2. Actuarial Value of Assets (see Section IIB - allocated in proportion to Total Accrued Liability)	586,672	98,530,843	1,024,146	47,729,398	60,434,922	747,112	209,053,093
3. Unfunded Accrued Liability: (1) - (2)	846,924	142,239,734	1,478,463	68,902,455	87,244,229	1,078,536	301,790,341
4. Funded Ratio: (2) / (1)	40.9%	40.9%	40.9%	40.9%	40.9%	40.9%	40.9%
5. Amortization Period	26	26	26	26	26	26	26
6. Amortization Growth Rate	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%
7. Past Service Cost: (3) amortized over (5)	51,594	8,665,098	90,066	4,197,467	5,314,829	65,703	18,384,757

**Section III - Development of Contribution**  
**B. Actuarially Determined Contribution for FY 2020-21**

	Part A	Part B	Part B1	Part C	Part D	Part E	Total
1. Total Normal Cost	\$0	\$2,663,358	\$77,368	\$1,684,783	\$2,844,998	\$548,419	\$7,818,926
2. Expected Member Contributions	0	966,662	56,649	684,488	790,404	276,042	2,774,245
3. Expected Administrative Expenses (allocated in proportion to Total Normal Cost)	0	118,539	3,443	74,985	126,624	24,409	348,000
4. Net Normal Cost: (1) - (2) + (3)	0	1,815,235	24,162	1,075,280	2,181,218	296,786	5,392,681
5. Past Service Cost (see Section IIIA)	51,594	8,665,098	90,066	4,197,467	5,314,829	65,703	18,384,757
6. Interest on (4) + (5) to beginning of fiscal year	3,606	732,575	7,985	368,565	523,974	25,338	1,662,043
7. Actuarially Determined Contribution for FY 2020-21: (4) + (5) + (6)	55,200	11,212,908	122,213	5,641,312	8,020,021	387,827	25,439,481

## Section III - Development of Contribution

### C. Breakdown by Town / BOE

	BOE	Town	Total
1. Total Normal Cost	\$1,725,536	\$6,093,390	\$7,818,926
2. Expected Member Contributions	619,333	2,154,912	2,774,245
3. Expected Administrative Expenses	76,799	271,201	348,000
4. Net Normal Cost: (1) - (2) + (3)	1,183,002	4,209,679	5,392,681
5. Accrued Liability	108,020,886	402,822,548	510,843,434
6. Actuarial Value of Assets	44,205,521	164,847,572	209,053,093
7. Unfunded Accrued Liability	63,815,365	237,974,976	301,790,341
8. Past Service Cost	3,887,566	14,497,191	18,384,757
9. Interest on (4) + (8) to the start of the fiscal year	354,433	1,307,610	1,662,043
10. Actuarially Determined Contribution: (4) + (8) + (9)	5,425,001	20,014,480	25,439,481

## Section III - Development of Contribution D. Long Range Forecast

This forecast is based on the results of the July 1, 2019 actuarial valuation and assumes that the Town will pay the Actuarially Determined Contribution each year, the assets will return the assumed interest rate on a market value basis each year, and there are no future changes in the actuarial methods or assumptions or in the plan provisions. For purposes of this forecast the amortization period declines to 1 year to illustrate the progress of the plan towards becoming fully funded; in actual practice the amortization period will not be less than 10 years in order to shield the Town from contribution volatility. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

Valuation Date	Values as of the Valuation Date				Fiscal Year	Cash Flows Projected to the Following Fiscal Year			
	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio		Town Contributions	Member Contributions	Benefit Payments	Net Cash Flows
7/1/2019	\$510,843,434	\$209,053,093	\$301,790,341	40.9%	2020-21	\$25,439,481	\$2,895,910	(\$35,752,339)	(\$7,416,948)
7/1/2020	530,967,000	217,223,000	313,744,000	40.9%	2021-22	26,818,000	3,072,000	(36,868,000)	(6,978,000)
7/1/2021	539,638,000	224,932,000	314,706,000	41.7%	2022-23	27,179,000	3,108,000	(37,863,000)	(7,576,000)
7/1/2022	547,709,000	233,543,000	314,166,000	42.6%	2023-24	27,645,000	3,145,000	(38,774,000)	(7,984,000)
7/1/2023	555,288,000	242,055,000	313,233,000	43.6%	2024-25	28,174,000	3,184,000	(39,607,000)	(8,249,000)
7/1/2024	562,467,000	250,668,000	311,799,000	44.6%	2025-26	28,714,000	3,230,000	(40,433,000)	(8,489,000)
7/1/2025	569,285,000	259,547,000	309,738,000	45.6%	2026-27	29,295,000	3,267,000	(41,283,000)	(8,721,000)
7/1/2026	575,760,000	268,742,000	307,018,000	46.7%	2027-28	29,920,000	3,316,000	(42,014,000)	(8,778,000)
7/1/2027	581,859,000	278,290,000	303,569,000	47.8%	2028-29	30,538,000	3,371,000	(42,586,000)	(8,677,000)
7/1/2028	587,663,000	288,403,000	299,260,000	49.1%	2029-30	31,210,000	3,436,000	(43,126,000)	(8,480,000)
7/1/2029	593,369,000	299,288,000	294,081,000	50.4%	2030-31	31,916,000	3,495,000	(43,601,000)	(8,190,000)
7/1/2030	599,021,000	311,102,000	287,919,000	51.9%	2031-32	32,654,000	3,557,000	(43,987,000)	(7,776,000)
7/1/2031	604,690,000	324,007,000	280,683,000	53.6%	2032-33	33,421,000	3,608,000	(44,461,000)	(7,432,000)
7/1/2032	610,482,000	338,213,000	272,269,000	55.4%	2033-34	34,185,000	3,672,000	(44,926,000)	(7,069,000)
7/1/2033	616,284,000	353,738,000	262,546,000	57.4%	2034-35	34,973,000	3,740,000	(45,312,000)	(6,599,000)
7/1/2034	622,131,000	370,698,000	251,433,000	59.6%	2035-36	35,774,000	3,812,000	(45,619,000)	(6,033,000)
7/1/2035	628,099,000	389,304,000	238,795,000	62.0%	2036-37	36,597,000	3,878,000	(45,906,000)	(5,431,000)
7/1/2036	634,285,000	409,773,000	224,512,000	64.6%	2037-38	37,445,000	3,949,000	(46,219,000)	(4,825,000)
7/1/2037	640,747,000	432,272,000	208,475,000	67.5%	2038-39	38,298,000	4,014,000	(46,530,000)	(4,218,000)
7/1/2038	647,451,000	456,950,000	190,501,000	70.6%	2039-40	39,171,000	4,083,000	(46,884,000)	(3,630,000)

**Section III - Development of Contribution**  
**E. History of Funded Status**

Valuation Date	Actuarial Value of Assets	Accrued Liability	Unfunded Accrued Liability	Funded Ratio
July 1, 2012	\$142,935,539	\$323,024,249	\$180,088,710	44.2%
July 1, 2013	145,028,432	350,769,991	205,741,559	41.3%
July 1, 2014	159,253,591	367,481,550	208,227,959	43.3%
July 1, 2015	173,140,717	403,746,402	230,605,685	42.9%
July 1, 2016	179,642,266	414,533,071	234,890,805	43.3%
July 1, 2017	189,993,169	452,993,244	263,000,075	41.9%
July 1, 2018	200,503,878	469,050,740	268,546,862	42.7%
July 1, 2019	209,053,093	510,843,434	301,790,341	40.9%

## Section III - Development of Contribution

### F. History of Town Contributions

Fiscal Year	Actuarially Determined Contribution	Actual Town Contribution	Payroll	Actual Contribution as a Percent of Payroll
2013-14	\$15,957,321	\$15,957,000	\$57,281,455	27.9%
2014-15	17,711,861	17,712,000	53,742,387	33.0%
2015-16	17,916,822	17,917,000	55,892,083	32.1%
2016-17	20,551,457	20,551,457	56,648,623	36.3%
2017-18	21,615,393	21,615,393	58,064,839	37.2%
2018-19	23,880,013	23,880,000	58,707,946	40.7%
2019-20	25,231,540	TBD	60,175,645	TBD
2020-21	25,439,481	TBD	63,885,033	TBD



## Section III - Development of Contribution

### G. Tread Water Amount

The **Tread Water Amount** is equal to the Town's net normal cost (see Section IIIB) plus one year's interest on the Accrued Liability less the Market Value of Assets. Below is a comparison of the Tread Water Amount to the Actuarially Determined Contribution based on the results of our long range forecast (shown in Section III D). We have included this metric at the Town's request.

Valuation Date	Net Normal Cost	Accrued Liability	Market Value of Assets	Tread Water Amount	Actuarially Determined Contribution (ADC)	ADC as a Percent of the Tread Water Amount
July 1, 2019	\$5,392,681	\$510,843,434	\$212,171,049	\$26,269,881	\$25,439,481	96.8%
July 1, 2020	5,520,000	530,967,000	219,892,000	27,264,000	26,818,000	98.4%
July 1, 2021	5,323,000	539,638,000	227,217,000	27,161,000	27,179,000	100.1%
July 1, 2022	5,275,000	547,709,000	235,498,000	27,099,000	27,645,000	102.0%
July 1, 2023	5,265,000	555,288,000	243,728,000	27,043,000	28,174,000	104.2%
July 1, 2024	5,245,000	562,467,000	252,100,000	26,939,000	28,714,000	106.6%
July 1, 2025	5,248,000	569,285,000	260,773,000	26,813,000	29,295,000	109.3%
July 1, 2026	5,274,000	575,760,000	269,791,000	26,661,000	29,920,000	112.2%
July 1, 2027	5,276,000	581,859,000	279,189,000	26,433,000	30,538,000	115.5%
July 1, 2028	5,315,000	587,663,000	289,172,000	26,180,000	31,210,000	119.2%

Note that the Actuarially Determined Contribution calculated as of each valuation date is for the fiscal year that starts one year after the valuation date.

## Section IV - Membership Data

### A. Reconciliation of Membership from Prior Full Valuation

Details of the changes in the Plan membership since the last full valuation are shown below. Additional details on the Plan membership are provided in the remainder of Section IV.

	Active Members	Terminated Vested Members	Nonvested Members Due Refunds	Service Retirees	Disabled Retirees	Beneficiaries	Total
<b>Count July 1, 2017</b>	854	47	20	958	35	131	2,045
Terminated							
- no benefits due	(6)	-	6	-	-	-	0
- paid refund	(25)	(1)	(10)	-	-	-	(36)
- vested benefits due	(19)	19	-	-	-	-	0
Retired	(109)	(13)	-	120	2	-	0
Died	-	-	-	-	-	-	0
- with beneficiary	(4)	-	-	(13)	-	17	0
- no beneficiary	-	-	-	(42)	(1)	(13)	(56)
Benefits expired	-	-	-	-	-	(1)	(1)
New member	141	-	8	-	-	-	149
Rehired	1	-	(1)	-	-	-	0
New Alternate Payee	-	-	-	-	-	3	3
Correction	-	-	-	(1)	-	-	(1)
<b>Count July 1, 2019</b>	833	52	23	1,022	36	137	2,103

#### Breakdown as of July 1, 2019 by plan

Part A	0	0	0	6	0	7	13
Part B	409	49	9	720	20	65	1,272
Part B1	12	0	0	2	0	0	14
Part C	76	0	0	130	12	29	247
Part D	123	3	2	164	4	36	332
Part E	<u>213</u>	<u>0</u>	<u>12</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>225</u>
Total	833	52	23	1,022	36	137	2,103

## Section IV - Membership Data

### B. Statistics of Active Membership

		As of July 1, 2017	As of July 1, 2019
<b>Number of Active Members</b>	Part B	511	409
	Part B1	11	12
	Part C	88	76
	Part D	126	123
	Part E	<u>118</u>	<u>213</u>
	Total	854	833
<b>Average Age</b>	Part B	N/A	55.3
	Part B1	N/A	41.0
	Part C	N/A	40.6
	Part D	N/A	37.0
	Part E	<u>N/A</u>	43.9
	Total	49.0	48.1
<b>Average Service</b>	Part B	N/A	16.2
	Part B1	N/A	12.4
	Part C	N/A	10.7
	Part D	N/A	11.5
	Part E	<u>N/A</u>	2.6
	Total	12.8	11.5
<b>Total Payroll</b>	Part B	N/A	\$26,341,965
	Part B1	N/A	862,328
	Part C	N/A	10,105,736
	Part D	N/A	14,690,234
	Part E	<u>N/A</u>	<u>11,884,770</u>
	Total	\$58,707,946	63,885,033
<b>Average Payroll</b>	Part B	N/A	\$64,406
	Part B1	N/A	71,861
	Part C	N/A	132,970
	Part D	N/A	119,433
	Part E	<u>N/A</u>	55,797
	Total	\$68,745	76,693

## Section IV - Membership Data

### C. Distribution of Active Members as of July 1, 2019

**Part B**

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25								0
25-29	3	1						4
30-34	3	6	1					10
35-39	5	10	5	4				24
40-44	5	5	10	5	2			27
45-49	3	6	18	11	4	1		43
50-54	5	14	16	15	12	4	4	70
55-59	2	8	25	26	14	5	8	88
60-64	3	4	19	26	14	10	7	83
65+		4	17	18	10	5	6	60
<b>Total</b>	<b>29</b>	<b>58</b>	<b>111</b>	<b>105</b>	<b>56</b>	<b>25</b>	<b>25</b>	<b>409</b>

**Part B1**

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25								0
25-29	1	1						2
30-34		1						1
35-39			3					3
40-44			1	2				3
45-49				1				1
50-54								0
55-59	1				1			2
60-64								0
65+								0
<b>Total</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>12</b>

**Part C**

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25								0
25-29	9	2						11
30-34	14	5	1					20
35-39	1	6	2					9
40-44	2	2	2	3	1			10
45-49	1			5	2	1		9
50-54		2		2	3	3		10
55-59		1		2	2	2		7
60-64								0
65+								0
<b>Total</b>	<b>27</b>	<b>18</b>	<b>5</b>	<b>12</b>	<b>8</b>	<b>6</b>	<b>0</b>	<b>76</b>

## Section IV - Membership Data

### C. Distribution of Active Members as of July 1, 2019

**Part D**

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	9							9
25-29	15	9						24
30-34	2	14	9					25
35-39	1	2	14	3				20
40-44	1		1	17	1			20
45-49			2	7	5			14
50-54				5	2	1		8
55-59			1	1				2
60-64							1	1
65+								0
<b>Total</b>	28	25	27	33	8	1	1	123

**Part E**

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	10							10
25-29	22							22
30-34	18	6						24
35-39	25	4						29
40-44	18	2	1					21
45-49	30	2						32
50-54	31	3	1					35
55-59	25	3	1					29
60-64	4	2	1					7
65+	3	1						4
<b>Total</b>	186	23	4	0	0	0	0	213

## Section IV - Membership Data

### D. Statistics of Inactive Membership

	As of July 1, 2017	As of July 1, 2019
<b>Terminated Vested Members</b>		
Number	47	52
Total Annual Benefit	\$446,133	\$585,536
Average Annual Benefit	9,492	11,260
Average Age	47.3	50.5
<b>Nonvested Members Due Refunds</b>		
Number	20	23
<b>Service Retirees</b>		
Number	958	1,022
Total Annual Benefit	N/A	\$30,773,957
Average Annual Benefit	N/A	30,112
Average Age	N/A	70.5
<b>Disabled Retirees</b>		
Number	35	36
Total Annual Benefit	N/A	\$839,846
Average Annual Benefit	N/A	23,329
Average Age	N/A	64.4
<b>Beneficiaries</b>		
Number	131	137
Total Annual Benefit	N/A	\$1,886,499
Average Annual Benefit	N/A	13,770
Average Age	N/A	76.1

**Section IV - Membership Data**  
**E. Distribution of Inactive Members as of July 1, 2019**

	Age	Number	Annual Benefits
<b>Terminated Members*</b>	< 50	37	\$244,763
	50 - 59	31	289,701
	60 - 69	7	51,072
	70 - 79	0	0
	80 - 89	0	0
	90 +	<u>0</u>	<u>0</u>
	Total	75	585,536
<b>Service Retirees</b>	< 50	28	\$1,355,753
	50 - 59	119	6,776,728
	60 - 69	355	12,271,323
	70 - 79	333	7,586,568
	80 - 89	154	2,559,898
	90 +	<u>33</u>	<u>223,686</u>
	Total	1,022	30,773,957
<b>Disabled Retirees</b>	< 50	3	\$92,598
	50 - 59	10	264,172
	60 - 69	12	218,743
	70 - 79	7	171,585
	80 - 89	4	92,748
	90 +	<u>0</u>	<u>0</u>
	Total	36	839,846
<b>Beneficiaries</b>	< 50	0	\$0
	50 - 59	13	277,592
	60 - 69	28	433,633
	70 - 79	39	569,551
	80 - 89	47	552,596
	90 +	<u>10</u>	<u>53,127</u>
	Total	137	1,886,499

\*Count includes terminated vested members and non-vested members who are due a refund of contributions. Annual benefits represent future annuities for terminated vested members only.

## Section V - Analysis of Risk

### A. Introduction

The results of this actuarial valuation are based on one set of reasonable assumptions. However, it is almost certain that future experience will not exactly match these assumptions. As an example, the plan's investments may perform better or worse than assumed in any single year and over any longer time horizon. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the plan, or of the plan's members.

In addition, as plans mature they accumulate larger pools of assets and liabilities. The increase in size in turn increases the potential magnitude of adverse experience. As an example, the dollar impact of a 10% investment loss on a plan with \$1 billion in assets and liabilities is much greater than the dollar impact for a plan with \$1 million in assets and liabilities. Since pension plans make long-term promises and rely on long-term funding, it is important to consider how mature the plan is today, and how mature it may become in the future.

Actuarial Standard of Practice No. 51 (ASOP 51) directs actuaries to provide pension plan sponsors with information concerning the risks associated with the plan:

- Identify risks that may be significant to the plan.
- Assess the risks identified as significant to the plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the plan's risks.

This section of the report uses the framework of ASOP 51 to communicate important information about significant risks to the plan, the plan's maturity, and relevant historical plan data.

Please see Section III D for more information on the basis for the projected results shown on the following pages.



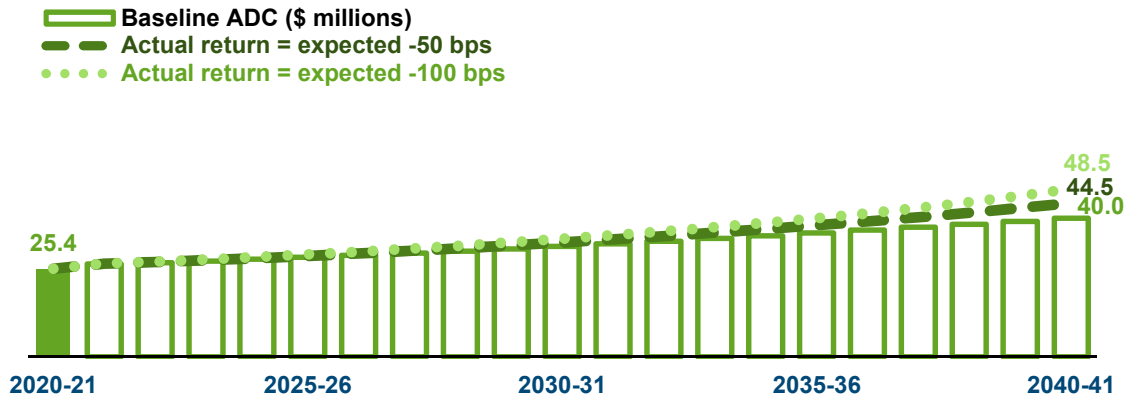
## Section V - Analysis of Risk

### B. Risk Identification and Assessment

#### Investment Risk

Definition: This is the potential that investment returns will be different than expected.

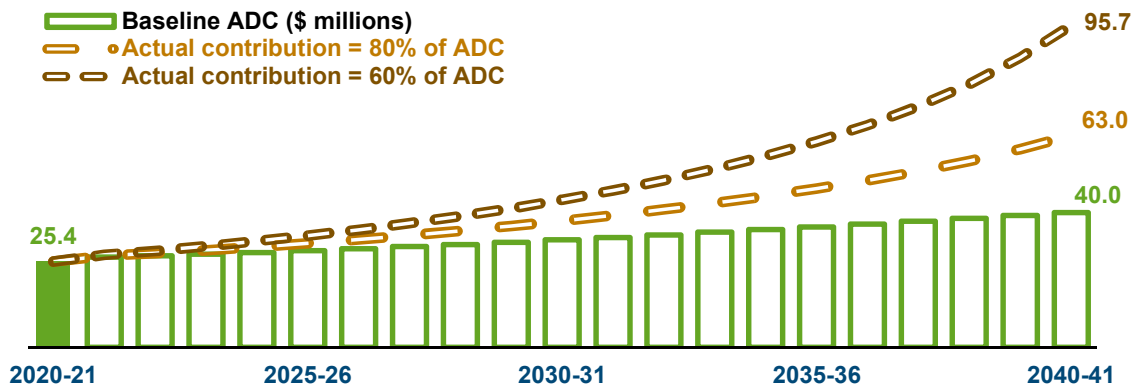
Identification: To the extent that actual investment returns differ from the assumed investment return, the plan's future assets, Actuarially Determined Contributions, and funded status may differ significantly from those presented in this valuation. The consequences of persistent underperformance on future Actuarially Determined Contribution levels are illustrated below:



#### Contribution Risk

Definition: This is the potential that actual future contributions will be less than the Actuarially Determined Contribution.

Identification: Over the past 6 years, actual contributions have been approximately 100.0% of the Actuarially Determined Contribution in total. The consequences of persistent underfunding on future Actuarially Determined Contribution levels are illustrated below:



## Section V - Analysis of Risk

### B. Risk Identification and Assessment

#### Liquidity Risk

**Definition:** This is the potential that assets must be liquidated at a loss earlier than planned in order to pay for the plan's benefits and operating costs. This risk is heightened for plans with negative cash flows, in which contributions are not sufficient to cover benefit payments plus expenses.

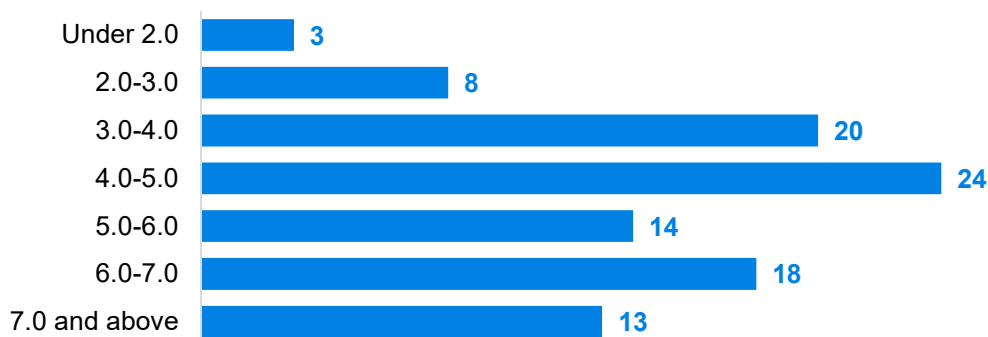
**Identification:** In 2018-19, the plan had negative cash flow, with town and member contributions to the plan of \$27,172,108 compared to \$33,464,130 of benefit payments and administrative expenses paid out of the plan. We suggest that you consult with your investment advisors with respect to the liquidity characteristics of the plan's investment holdings.

#### Maturity Risk

**Definition:** This is the potential for total plan liabilities to become more heavily weighted toward inactive liabilities over time, and for plan assets and/or liabilities to become larger relative to the active member liability.

**Identification:** The plan is subject to maturity risk because as plan assets and liabilities continue to grow, the dollar impact of any gains or losses on the assets or liabilities also becomes larger.

**Assessment:** As of July 1, 2019, the plan's Asset Volatility Ratio (the ratio of the market value of plan assets to payroll) is 3.3. According to Milliman's 2018 Public Pension Funding Study, the 100 largest US public pension plans have the following range of Asset Volatility Ratios:



#### Inflation Risk

**Definition:** This is the potential for a pension to lose purchasing power over time due to inflation.

**Identification:** The members of pension plans without fully inflation-indexed benefits are subject to the risk that their purchasing power will be reduced over time due to inflation.

**Assessment:** This plan provides for limited postretirement benefit increases, but the increases are not directly tied to each year's rate of actual inflation; this leaves members bearing some inflation risk. In addition, not all members are eligible for these increases.

## Section V - Analysis of Risk

### B. Risk Identification and Assessment

#### Insolvency Risk

Definition: This is the potential that a plan will become insolvent; that is, assets will be fully depleted.

Identification: If a plan becomes insolvent, contractually required benefits must be paid from the plan sponsor's other remaining assets.

Assessment: Under the GASB 67/68 depletion date methodology, the plan is not projected to become insolvent. Please see the GASB 67/68 report for more details on the underlying analysis.

#### Demographic Risks

Definition: This is the potential that mortality, turnover, retirement, or other demographic experience will be different than expected.

Identification: The pension liabilities reported herein have been calculated by assuming that members will follow patterns of demographic experience as described in Appendix B. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities, Actuarially Determined Contributions, and funded status may differ significantly from those presented in this valuation. Formal Experience Studies performed on a regular basis are helpful in ensuring that the demographic assumptions reflect emerging plan experience.

#### Retirement Risk

Definition: This is the potential for members to retire and receive subsidized benefits that are more valuable than expected.

Identification: This plan has a range of retirement eligibility with varying retirement benefits. If members retire at different ages than are anticipated by the actuarial assumptions, this may put upward pressure on subsequent Actuarially Determined Contributions.

#### Pensionable Earnings Risk

Definition: This is the potential for active members to add items to their pensionable earnings and receive pension benefits that are higher than expected.

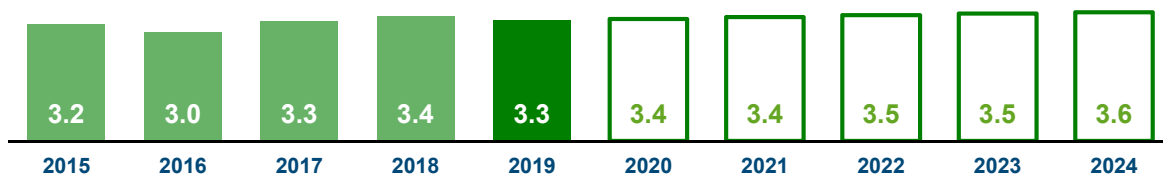
Identification: Unused sick pay is included in pension calculations for some groups of members (see Appendix C for more details). If members include more unused sick pay than is anticipated by the actuarial assumptions, this will put upward pressure on subsequent Actuarially Determined Contributions.

## Section V - Analysis of Risk

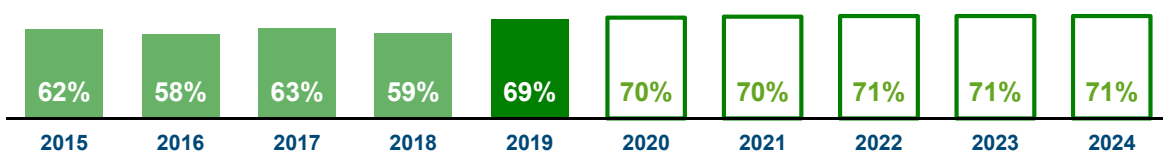
### C. Maturity Measures

The metrics presented below are different ways of understanding the plan's maturity level, both in the past and as it is expected to change in the coming years.

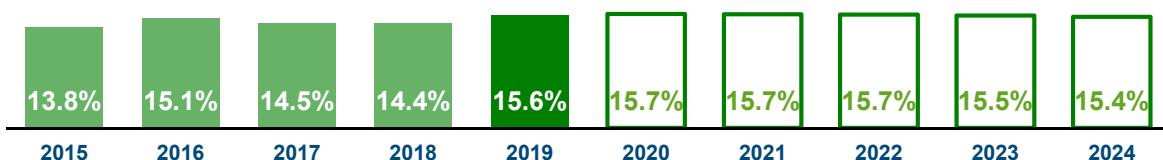
#### Asset Volatility Ratio: Market Value of Assets compared to Payroll



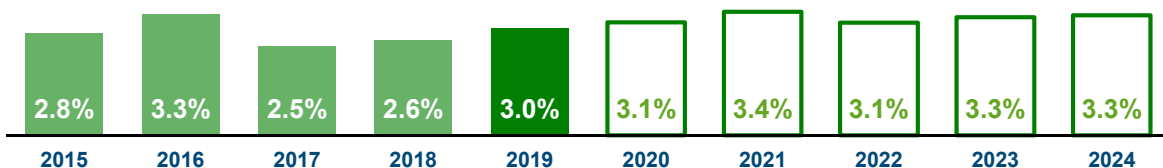
#### Accrued Liability for members in pay status compared to total Accrued Liability



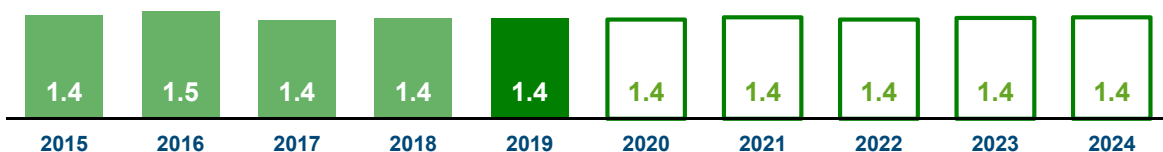
#### Benefit Payments compared to Market Value of Assets



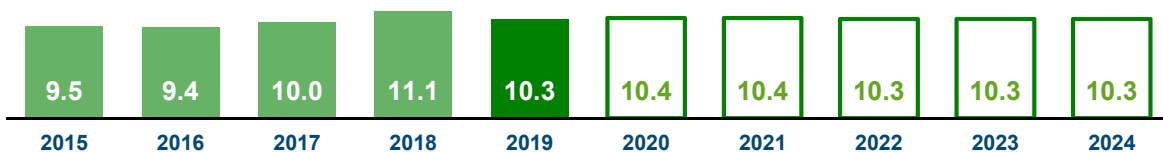
#### Net Cash Flows compared to Market Value of Assets



#### Benefit Payments compared to Town Contributions



#### Duration of Accrued Liability (based on GASB 68 sensitivity disclosures)



## Appendix A - Actuarial Funding Method

The actuarial funding method used in the valuation of this Plan is known as the Entry Age Normal Method. The Actuarially Determined Contribution consists of three pieces: Normal Cost plus a Past Service Cost payment to gradually eliminate the Unfunded Accrued Liability plus Interest to reflect the timing of the contribution relative to the valuation date.

The Normal Cost is determined by calculating the present value of future benefits for present active Members that will become payable as the result of death, disability, retirement or termination. This cost is then spread as a level percentage of earnings from entry age to termination as an Active Member. If Normal Costs had been paid at this level for all prior years, a fund would have accumulated. Because this fund represents the portion of benefits that would have been funded to date, it is termed the Accrued Liability. In fact, it is calculated by adding the present value of benefits for Retired Members and Terminated Vested Members to the present value of benefits for Active Members and subtracting the present value of future Normal Cost contributions.

The funding cost of the Plan is derived by making certain specific assumptions as to rates of interest, mortality, turnover, etc. which are assumed to hold for many years into the future. Since actual experience may differ somewhat from the assumptions, the costs determined by the valuation must be regarded as estimates of the true costs of the Plan.

The Unfunded Accrued Liability is the excess of the Accrued Liability over the Actuarial Value of Assets. This Unfunded Accrued Liability is amortized as a level percent over a closed 30 year period starting on July 1, 2015. The amortization period will decrease by 1 year every year. Once it reaches 10, the policy will shift to 10 year layered amortization bases.

The Actuarial Value of Assets is determined by recognizing market gains and losses asymptotically over a five year period.

The long-range forecasts included in this report have been developed by assuming that members will terminate, retire, become disabled, and die according to the actuarial assumptions with respect to these causes of decrement, and that pay increases, cost of living adjustments, and so forth will likewise occur according to the actuarial assumptions. For those unions whose new employees are eligible to participate in this plan, members who are projected to leave active employment are assumed to be replaced by new active members with the same age, service, gender, and pay characteristics as those hired in the past few years.

## Appendix B - Actuarial Assumptions

Each of the assumptions used in this valuation was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

<b>Interest Rate</b>	6.99% (prior: 7.125%)
<b>Inflation</b>	2.75%
<b>Amortization Growth Rate</b>	2.75% (prior: 1.75%)
<b>Expenses</b>	The prior year actual administrative expenses paid, increased with inflation and rounded to the nearest \$1,000.

<b>Salary Scale</b>	<b>Age</b>	<b>Rate</b>
	<25	6.00%
	25-29	5.85%
	30-34	4.65%
	35-39	4.35%
	40-49	3.65%
	50-59	3.50%
	60+	2.80%

<b>Pay Adjustment for Unions With Open Contracts</b>	2.00% per year back to July 1, 2017 for Building Maintenance, Grounds Maintenance, Supervisors, Public Safety Dispatchers, Clerical, Professional Management. 2.00% back to July 1, 2018 for Town Streets.
--	--

<b>Unused Sick Pay</b>	Including unused sick days in Average Final Compensation is assumed to increase benefits by:
------------------------	--

Parts B & B1 & E	5.00%
Parts C & D	5.25%

<b>Turnover</b>	Parts B & B1 & E:				
	<b>Age</b>	<b>0-2</b>	<b>3-5</b>	<b>6-9</b>	<b>10+</b>
	20	30%	12%	8%	6%
	25	25%	11%	7%	5%
	30	20%	10%	6%	4%
	35	15%	9%	5%	3%
	40+	10%	8%	4%	2%

Part C: None

Part D: Crocker-Sarasan Table T-1

## Appendix B - Actuarial Assumptions

### Retirement

Parts B & B1 & E:

Age	Rate
45-49	1%
50-54	3%
55-59	5%
60	15%
61-64	10%
65-69	40%
70	100%

Part C:

Age	Rate	
40-44	1%	In the year in which the member becomes eligible for both an unreduced pension and retiree medical benefits, the greater of the rate from the table and 25%
45-49	5%	
50-55	10%	
56-64	25%	
65	100%	

Part D:

Age	Rate	
30-39	1%	In the year in which the member becomes eligible for both an unreduced pension and retiree medical benefits, the greater of the rate from the table and 25%
40-44	2%	
45-54	10%	
55-61	20%	
62	100%	

### Disability

Age	Rate
20	0.08%
30	0.09%
40	0.17%
50	0.51%
60	1.44%

Service-connected disabilities are assumed to comprise 20% of disabilities for Parts B & B1 & E and 50% of disabilities for Parts C & D.

The member's regular accrued benefit is assumed to be higher than the other disability benefits under the plan.

## Appendix B - Actuarial Assumptions

### Healthy Mortality

Current: Pub-2010 Mortality Table with generational projection per the MP ultimate scale, with employee rates before commencement and healthy annuitant rates after benefit commencement. The Public Safety variant is used for Custodial (05), Maintenance (06), Grounds (70), Building Maintenance (71), Streets (62), Fire (61), and Police (60), and the General variant is used for all other groups. This assumption includes a margin for future improvements in longevity.

This valuation reflects 50% of the impact of the change in the mortality assumption. The 2020 valuation is anticipated to reflect 100% of the impact.

Prior: RP-2000 Annuitant and Non-Annuitant Mortality Tables for Males and Females with generational projection from a base year of 2006 per Scale BB. A Blue Collar adjustment is applied pre- and post-retirement for Custodial (05), Maintenance (06), Grounds (70), Building Maintenance (71), Streets (62), Fire (61), and Police (60).

### Disabled Mortality

Current: Pub-2010 Mortality Table for disabled retirees with generational projection per the MP ultimate scale. The Public Safety variant is used for Custodial (05), Maintenance (06), Grounds (70), Building Maintenance (71), Streets (62), Fire (61), and Police (60), and the General variant is used for all other groups. This assumption includes a margin for future improvements in longevity.

This valuation reflects 50% of the impact of the change in the mortality assumption. The 2020 valuation is anticipated to reflect 100% of the impact.

Prior: RP-2000 Disabled Mortality Table without projection.

### Marital Status

80% of active participants are assumed to be married. Female spouses are assumed to be 3 years younger than male spouses.

### Survivor Benefit

In order to approximate the additional death benefits for Parts C & D, the survivorship benefit is assumed to equal 25% of final pay and the normal form of the retirement benefit is valued as a 10% Joint & Survivor annuity.



## Appendix C - Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Many plan provisions vary by union. We have shown the applicable union codes in parentheses where appropriate to indicate which union(s) are covered by which plan provisions.

**Effective Date of Plan**                      March 1, 1945

**Covered Employees**                      Employees working at least 1,000 hours, excluding those teachers eligible under the State Teachers Retirement System, may participate. Participation is compulsory for new employees hired under age 50.

Employees hired after the following dates are not covered by the Pension Plan:

Nurses (07)	June 1, 2010
Cafeteria (08)	June 1, 2011
Security (12)	June 1, 2010
Directors (59)	July 1, 2012 may opt out

### Classes of Members

**Part A**                                      Covered Employees on December 8, 1959 who did not elect coverage under Social Security plus certain police officers and firefighters not covered under Part C or Part D.

**Part B**                                      All Covered Employees not in Parts A, B1, C, D, or E.

#### Board of Education Unions

Secretarial/Clerical (02)  
 Paraprofessional (03)  
 Printers (04)  
 Custodial (05)  
 Maintenance (06)  
 Nurses (07)  
 Cafeteria (08)  
 Non-Bargaining (09)  
 Custodial III/Head Custodian (10)  
 Security (12)  
 Professional/Technical (14)  
 Cafeteria Managers (15)  
 Non-Union Plan B (16)

#### Town Unions

Nurses (58)  
 Directors (59)  
 Streets (62)  
 Clerical (65)  
 Non-Bargaining Clerical (66)  
 Non-Bargaining (68)  
 Grounds (70)  
 Building Maintenance (71)  
 Professional/Management (73)  
 Supervisor (74)  
 Parking Monitors (81)  
 Corporate Counsel (87)  
 Town Manager (90)

**Part B1 (64)**                              All Covered Employees classified as public safety dispatchers.

## Appendix C - Summary of Plan Provisions

### Classes of Members (continued)

<b>Part C (61)</b>	All Covered Employees classified as firefighters except those covered in Part A.																																
<b>Part D (60)</b>	All Covered Employees classified as police officers except those covered in Part A.																																
<b>Part E</b>	Covered employees in the following unions who were hired on or after the dates indicated:																																
	<table border="0" style="width: 100%;"> <tr> <td style="width: 70%;">Secretarial/Clerical (02)</td> <td style="text-align: right;">05/21/2013</td> </tr> <tr> <td>Paraprofessional (03)</td> <td style="text-align: right;">05/21/2013</td> </tr> <tr> <td>Printers (04)</td> <td style="text-align: right;">10/02/2012</td> </tr> <tr> <td>Custodial (05)</td> <td style="text-align: right;">10/02/2012</td> </tr> <tr> <td>Maintenance (06)</td> <td style="text-align: right;">10/02/2012</td> </tr> <tr> <td>Custodial III/Head Custodian (10)</td> <td style="text-align: right;">07/01/2014</td> </tr> <tr> <td>Professional/Technical (14)</td> <td style="text-align: right;">10/15/2013</td> </tr> <tr> <td>Cafeteria Managers (15)</td> <td style="text-align: right;">07/01/2014</td> </tr> <tr> <td>Directors (59)</td> <td style="text-align: right;">07/01/2012</td> </tr> <tr> <td>Streets (62)</td> <td style="text-align: right;">08/01/2016</td> </tr> <tr> <td>Clerical (65)</td> <td style="text-align: right;">05/24/2016</td> </tr> <tr> <td>Grounds (70)</td> <td style="text-align: right;">09/24/2015</td> </tr> <tr> <td>Building Maintenance (71)</td> <td style="text-align: right;">05/24/2016</td> </tr> <tr> <td>Professional/Management (73)</td> <td style="text-align: right;">09/24/2015</td> </tr> <tr> <td>Supervisor (74)</td> <td style="text-align: right;">05/24/2016</td> </tr> <tr> <td>Parking Monitors (81)</td> <td style="text-align: right;">02/07/2017</td> </tr> </table>	Secretarial/Clerical (02)	05/21/2013	Paraprofessional (03)	05/21/2013	Printers (04)	10/02/2012	Custodial (05)	10/02/2012	Maintenance (06)	10/02/2012	Custodial III/Head Custodian (10)	07/01/2014	Professional/Technical (14)	10/15/2013	Cafeteria Managers (15)	07/01/2014	Directors (59)	07/01/2012	Streets (62)	08/01/2016	Clerical (65)	05/24/2016	Grounds (70)	09/24/2015	Building Maintenance (71)	05/24/2016	Professional/Management (73)	09/24/2015	Supervisor (74)	05/24/2016	Parking Monitors (81)	02/07/2017
Secretarial/Clerical (02)	05/21/2013																																
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Supervisor (74)	05/24/2016																																
Parking Monitors (81)	02/07/2017																																

**Credited Service** All service including completed months from date of hire to date of actual retirement, date of death, or date of termination of employment. Solely for the purpose of calculating amount of pension (see Normal Retirement Benefit) credited service includes any additional service credited in connection with the prior governmental service purchase provision of the plan.

**Compensation** All benefits except Service-Connected Disability: Gross wages including overtime and the value of maintenance.

Service-Connected Disability Benefits: Annual rate of basic pay excluding overtime and other supplemental compensation.

Compensation is limited to \$200,000, indexed in accordance with the Internal Revenue Code requirements for qualified plans.

## Appendix C - Summary of Plan Provisions

**Average Final Compensation** Average of the three highest calendar years of compensation, prior to date of actual retirement. Unused sick pay is included in average final compensation to the extent allowed under the plan.

For Part B and Part E members who were hired on or after the dates shown below, Average Final Compensation is capped at the member's highest paid calendar year base wage, not including overtime, longevity, meal payments, or other forms of compensation.

Secretarial/Clerical (02)	05/01/2006
Paraprofessional (03)	05/01/2006
Printers (04)	07/01/2004
Custodial (05)	07/01/2006
Maintenance (06)	07/01/2004
Nurses (07)	07/01/2004
Cafeteria (08)	07/01/2004
Non-Bargaining (09)	05/01/2006
Custodial III/Head Custodian (10)	07/01/2006
Security (12)	05/01/2006
Professional/Technical (14)	07/01/2004
Cafeteria Managers (15)	07/01/2004
Non-Union Plan B (16)	05/01/2006
All Town Unions (58) - (90)	07/01/2013

For Part C members who were hired on or after 04/01/2014, final rate of compensation is used; defined as the member's highest bi-weekly rate of pay times 26.089 plus the member's highest holiday pay attained.

**Covered Compensation** Covered compensation, as defined under Revenue Ruling 71-446, for persons turning age 65 during later of the year the member turns age 65 or the year of actual retirement.

**Vesting** An active member will become vested after 5 years of service (10 years for Dispatchers (64) members hired on or after 06/30/2007). A vested member is eligible for a vested pension payable starting at the member's Normal Retirement Date. The monthly benefit is equal to the accrued pension at date of termination. A vested member may elect to retire early and receive a reduced monthly benefit if the member has met the eligibility criteria. In lieu of monthly benefits, a vested member may elect to receive a refund of member contributions with credited interest.

**Normal Form** Single life annuity.

## Appendix C - Summary of Plan Provisions

### Unused Sick Pay

Unused sick pay is included in pension calculations for members who were hired prior to the dates shown below:

Secretarial/Clerical (02)	07/01/2006
Paraprofessional (03)	07/01/2006
Printers (04)	07/01/2005
Custodial (05)	07/01/2005
Maintenance (06)	07/01/2004
Nurses (07)	07/01/2004
Cafeteria (08)	07/01/2005
Non-Bargaining (09)	07/01/2006
Custodial III/Head Custodian (10)	07/01/2005
Security (12)	07/01/2005
Professional/Technical (14)	07/01/2004
Cafeteria Managers (15)	07/01/2005
Non-Union Plan B (16)	07/01/2006
All Town Unions (58) - (90)	07/01/2003
Part C	07/01/2005
Part D	08/01/2006

## Appendix C - Summary of Plan Provisions

### Member Contributions

<b>Part B</b>	Members contribute at the Normal Rate. For certain unions, the Long Service Rate applies after 30 years of service for members hired prior to 07/01/2003, and after 35 years of service for members hired on or after 07/01/2003. (Custodial (05) date of demarkation is 01/01/2006.)		
		<b>Normal Rate</b>	<b>Long Service Rate</b>
	Secretarial/Clerical (02)	4.25%	
	Paraprofessional (03)	4.00%	
	Printers (04)	3.00%	2.00%
	Custodial (05)	3.00%	2.00%
	Maintenance (06)	3.00%	2.00%
	Nurses (07)	5.00%	2.00%
	Cafeteria (08)	3.50%	
	Non-Bargaining (09)	4.25%	
	Custodial III/Head Custodian (10)	4.25%	
	Security (12)	5.00%	
	Professional/Technical (14)	4.25%	
	Cafeteria Managers (15)	4.25%	
	Non-Union Plan B (16)	4.25%	
	Nurses (58)	3.00%	2.00%
	Directors (59)	5.00%	
	Streets (62)	4.50%	2.00%
a - Includes 1.00% for COLA	Clerical (65)	3.80% a	1.80% a
	Non-Bargaining Clerical (66)	3.00%	2.00%
	Non-Bargaining (68)	3.00%	2.00%
	Grounds (70)	5.00%	3.00%
a - Includes 1.00% for COLA	Building Maintenance (71)	5.00% a	3.00% a
b - Includes 1.00% for COLA.	Professional/Management (73)	5.00%	3.00% b
Employees hired after	Supervisor (74)	5.00%	3.00%
09/24/2015 contribute at	Parking Monitors (81)	5.00%	2.00%
the Normal Rate regardless	Corporate Counsel (87)	3.00%	2.00%
of service.	Town Manager (90)	5.00%	
<b>Part B1 (64)</b>	6% of compensation plus 1% COLA contribution.		
<b>Part C (61)</b>	Members hired prior to 04/01/2014, 1% of base pay plus 7% of compensation. Members hired on or after 04/01/2014, 8% of base pay.		
<b>Part D (60)</b>	1% of base pay plus 5% of compensation. Members hired on or after 06/26/2018, 6% of base pay.		
<b>Part E</b>	3% of base compensation.		
<b>Interest</b>	2% compounded annually.		

## Appendix C - Summary of Plan Provisions

**Normal Retirement Date** Earliest of the following age/service combinations, based on date of hire. For these purposes, "service" is calculated by assuming the member continues to work beyond date of termination.

	If hired prior to the applicable date				Applicable date	If hired on or after the applicable date		
<b>Parts B &amp; E</b>								
Secretarial/Clerical (02)	55/25	60/10	70/0		05/01/2006	65/15	62/35	70/0
Paraprofessional (03)	55/25	60/10	70/0		05/01/2006	65/15	62/35	70/0
Printers (04)	55/25	60/10	70/0		07/01/2004	65/15	62/35	70/0
Custodial (05)	55/25	60/10	70/0	0/30	01/01/2006	65/15	0/35	70/0
Maintenance (06)	55/25	60/10	70/0	0/30	07/01/2004	65/15	62/35	70/0
Nurses (07)	55/25	60/10	70/0		07/01/2004	65/15	62/35	70/0
Cafeteria (08)	55/25	60/10	70/0		07/01/2004	65/15	62/35	70/0
Non-Bargaining (09)	55/25	60/10	70/0		07/01/2006	65/15	62/35	70/0
Custodial III/Head Custodian (10)	55/25	60/10	70/0		07/01/2005	65/15	62/35	70/0
Security (12)	55/25	60/10	70/0		05/01/2006	65/15	62/35	70/0
Professional/Technical (14)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
Cafeteria Managers (15)	55/25	60/10	70/0		07/01/2004	65/15	62/35	70/0
Non-Union Plan B (16)	55/25	60/10	70/0		07/01/2006	65/15	62/35	70/0
Nurses (58)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
Directors (59)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
Streets (62)	55/25	60/10	70/0	0/30	07/01/2003	65/15	0/35	70/0
Clerical (65)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
Non-Bargaining Clerical (66)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
Non-Bargaining (68)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
Grounds (70)	55/25	60/10	70/0	0/30	07/01/2003	65/15	62/35	70/0
Building Maintenance (71)	55/25	60/10	70/0	0/30	07/01/2003	65/15	62/35	70/0
Professional/Management (73)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
Supervisor (74)	55/25	60/10	70/0	0/30	07/01/2003	65/15	62/35	70/0
Parking Monitors (81)	applies to all members regardless of hire					65/15	62/35	70/0
Corporate Counsel (87)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
Town Manager (90)	55/25	60/10	70/0		07/01/2003	65/15	62/35	70/0
<b>Part B1 (64)</b>	55/25	60/10	70/0	0/20	07/01/2007	0/25		
<b>Part C (61)</b>	55/10	0/20	65/0		07/01/2005	50/25	65/0	
<b>Part D (60)</b>	applies to all members regardless of hire					55/10	0/20	65/0

## Appendix C - Summary of Plan Provisions

### Normal Retirement Benefit

#### Part B

For service prior to 01/01/1986:

(1) 2% times Average Final Compensation times Credited Service up to 33 years, plus 1% times Average Final Compensation times Credited Service in excess of 33 years; less

(2) 5/6% times Average Final Compensation not in excess of Covered Compensation times Credited Service; plus

(3) For Members who retire before age 62, a temporary allowance calculated as in (2) above. Such benefit shall terminate with the payment for the month the member attains Social Security Normal Retirement Age if in a Town union and age 62 otherwise.

For service after 01/01/1986: 2% times Average Final Compensation times Credited Service capped at 35 years (30 years for **Custodial (05)**).

For members of the following groups hired prior to the applicable date shown below, the benefit for a member who retires with 30 years of Credited Service is 70% of Average Final Compensation:

Custodial (05)	01/01/2006
Maintenance (06)	07/01/2004
Streets (62)	07/01/2003
Non-Bargaining Clerical (66)	07/01/2003
Non-Bargaining (68)	07/01/2003
Grounds (70)	07/01/2003
Building Maintenance (71)	07/01/2003
Professional/Management (73)	07/01/2003
Supervisor (74)	07/01/2003

For Clerical (65) members hired prior to 07/01/2003, the benefit for a member who retires at age 55 with 25 years of Credited Service is 60% of Average Final Compensation; the benefit for a member who retires at age 55 with 30 years of Credited Service is 70% of Average Final Compensation.

#### Part B1 (64)

The same as Part B. For members hired on or after 07/01/2007:

25-27 years of Credited Service	55% of Average Final Compensation
28+ years of Credited Service	56% of Average Final Compensation plus 2% for each additional year of Credited Service capped at 35 years

## Appendix C - Summary of Plan Provisions

**Part C (61)** For members hired prior to 04/01/2014, 2.5% times Average Final Compensation times Credited Service, capped at 75% of Average Final Compensation (except as noted below under Maximum Benefit).

For members actively employed on 07/01/2014 who were hired prior to 04/01/2014 and retire with 30 years of Credited Service, 80% of Average Final Compensation.

For members hired on or after 04/01/2014, 2.0% times Average Final Compensation times Credited Service. For such members who retire with 30 years of Credited Service, 65% of Average Final Compensation. Maximum benefit is 65% of Average Final Compensation.

**Part D (60)** For members hired prior to 08/01/2006, 2.5% times Average Final Compensation times Credited Service.

For members hired on or after 08/01/2006 and prior to 06/26/2018, 2.5% times average base pay times Credited Service (average base pay is the highest three calendar years of base pay plus 50% of overtime pay determined without regard to private duty, sick leave, or any other compensation).

For members hired on or after 06/26/2018, 2.0% times average base pay times Credited Service (average base pay is the highest three calendar years determined without regard to overtime, private duty, sick leave, or any other compensation than base pay).

For members on payroll as of 07/01/2006 or hired thereafter but prior to 06/26/2018 who retire with 30 years of Credited service, 80% of Average Final Compensation (determined with buyback time excluded).

**Part E** 1.0% times Average Final Compensation times Credited Service capped at 35 years.

### Minimum Benefit

**Parts B & B1 & E** \$360 per year. For terminated vested members, the benefit is reduced by \$24 per year for less than 15 years of continuous credited service.

**Parts C & D** \$1,000 per year. For Part C members, the benefit is reduced by \$67 per year for less than 15 years of continuous credited service.



## Appendix C - Summary of Plan Provisions

### Maximum Benefit

**Parts B & E** Except as noted below, the maximum benefit is 75% of Average Final Compensation for Part B and 35% of Average Final Compensation for Part E.

For all Board of Education unions except Printers (04) and Cafeteria (08), the maximum benefit (before the Supplemental Benefit) is 100% of the final year's base pay.

For members of Streets (62), Grounds (70), Building Maintenance (71), Professional/Management (73) who are eligible for normal retirement, and Supervisor (74) members who were hired prior to 07/01/2003 and retire with 30 years of service, the maximum benefit (before the Supplemental Benefit) is 70% of Average Final Compensation.

For all other Town union members, the maximum benefit (before the Supplemental Benefit) is 100% of the final year's base pay.

**Part B1** 75% of Average Final Compensation.

**Part C** For members hired prior to 07/01/2005, 95% of base pay. For members hired on or after 07/01/2005, 85% of base pay.

**Part D** For members hired prior to 08/01/2006, 95% of base pay (including education incentive and holiday pay only). For members hired on or after 08/01/2006, 85% of base pay (excluding overtime, holiday pay, sick pay, vacation time or other incentive or extra pay).

### Supplemental Benefit

Applies to Secretarial/Clerical (02), Paraprofessional (03) and Security (12) hired prior to 05/01/2006; Printers (04), Maintenance (06), Nurses (07), Cafeteria (08), Professional/Technical (14), and Cafeteria Managers (15) hired prior to 07/01/2004; Custodial (05) hired prior to 01/01/2006; Non-Bargaining (09) hired prior to 07/01/2006; Custodian III/Head Custodian (10) hired prior to 07/01/2005; and all Town unions and Town non-bargaining hired prior to 07/01/2003.

Members who work past Normal Retirement Date by attaining age 55 with 25 years of service or age 60 with 10 years of service receive a supplemental annual benefit equal to \$600 times each full year of service worked beyond Normal Retirement Date. This supplemental benefit is not eligible for a COLA and will not be a survivor benefit. Payments are made as a single payment during the month of July, starting the first July after the member's retirement date.

## Appendix C - Summary of Plan Provisions

### Early Retirement

A member may retire and receive a reduced monthly benefit upon reaching the earliest of the following age/service combinations, based on date of hire.

	If hired prior to the applicable date	Applicable date	If hired on or after the applicable date			
<b>Parts B &amp; E</b>						
Secretarial/Clerical (02)	45/15	50/10	05/01/2006	55/15	60/10	
Paraprofessional (03)	45/15	50/10	05/01/2006	55/15	60/10	
Printers (04)	45/15	50/10	07/01/2004	55/15	60/10	
Custodial (05)	45/15	50/10	01/01/2006	55/15	60/10	
Maintenance (06)	45/15	50/10	07/01/2004	55/15	60/10	
Nurses (07)	45/15	50/10	07/01/2004	55/15	60/10	
Cafeteria (08)	45/15	50/10	07/01/2004	55/15	60/10	
Non-Bargaining (09)	45/15	50/10	07/01/2006	55/15	60/10	
Custodial III/Head Custodian (10)	45/15	50/10	07/01/2005	55/15	60/10	
Security (12)	45/15	50/10	05/01/2006	55/15	60/10	
Professional/Technical (14)	45/15	50/10	07/01/2003	55/15	60/10	
Cafeteria Managers (15)	45/15	50/10	07/01/2004	55/15	60/10	
Non-Union Plan B (16)	45/15	50/10	07/01/2006	55/15	60/10	
Nurses (58)	45/15	50/10	07/01/2003	55/15	60/10	
Directors (59)	45/15	50/10	07/01/2003	55/15	60/10	
Streets (62)	45/15	50/10	07/01/2003	55/15	60/10	
Clerical (65)	45/15	50/10	07/01/2003	55/15	60/10	
Non-Bargaining Clerical (66)	45/15	50/10	07/01/2003	55/15	60/10	
Non-Bargaining (68)	45/15	50/10	07/01/2003	55/15	60/10	
Grounds (70)	45/15	50/10	07/01/2003	55/15	60/10	
Building Maintenance (71)	45/15	50/10	07/01/2003	55/15	60/10	
Professional/Management (73)	45/15	50/10	07/01/2003	55/15	60/10	
Supervisor (74)	45/15	50/10	07/01/2003	55/15	60/10	
Parking Monitors (81)	45/15	50/10	07/01/2003	55/15	60/10	
Corporate Counsel (87)	45/15	50/10	07/01/2003	55/15	60/10	
Town Manager (90)	45/15	50/10	07/01/2003	55/15	60/10	
<b>Part B1 (64)</b>	45/15	50/10	07/01/2007	45/15	50/10	0/20
Benefit reduction basis (for all listed above)	1971GAM Male-1, 6.5%			6% per year retiring prior to Normal Retirement		

### Parts C & D

Any age with 10 years of Credited Service; benefit reduction basis is 1971GAM Male-1, 6.5%.

## Appendix C - Summary of Plan Provisions

### Deferred Retirement

**Parts B, B1 & E** Members may work beyond retirement at their own option, and will continue to accrue benefits under the plan.

**Parts C & D** Members may not work later than the December 31st nearest their 65th birthday.

### Disability Retirement

A member regardless of age with 10 or more years of continuous service is eligible if he or she is totally and permanently disabled and unable thereby to engage in gainful occupation with the Town. The benefit amount is equal to the regular pension benefit without reduction for early commencement.

If the disability is Service-Connected, the 10-year service requirement is waived and the benefit is the greater of (a) the regular pension benefit without reduction for early commencement, or (b) 50% of base pay less any payments received on account of Social Security or Worker's Compensation.

Parts B, B1 & E: annual minimum benefit of \$360.

Parts C & D: annual minimum benefit of \$1,000.

### Survivorship Benefit

Upon the death of a Part C (61) or Part D (60) member, either active or retired (including disability retirements), an annual benefit is paid to spouses who have not remarried, dependent minor children, or dependent parent(s). The benefit is equal to a percentage between 25% and 50% (depending on number and types of survivors) of final base rate of pay.

### Preretirement Death

Return of member's contributions with regular interest. Part C (61) and Part D (60) members generally do not receive 1% of base wages contributed.

Alternatively, a surviving spouse may elect to receive a life annuity starting on or after the date the member would have been eligible for Early Retirement. The benefit is equal to what the spouse would have received had the member terminated employment on the date of death, elected a 50% Joint & Survivor annuity commencing on the death benefit start date, and then died.

## Appendix C - Summary of Plan Provisions

### Postretirement Death

Excess of member's contributions with regular interest to retirement date over pension payments received prior to death, unless optional form with 10-year certain period has been elected. Part C (61) and Part D (60) members generally do not receive 1% of base wages contributed.

For Part C (61) and Part D (60) members, the surviving spouse will receive a benefit (until remarriage) as follows:

Age/Service Criteria:

Part C hired prior to 07/01/2005: 0/10

Part C hired on or after 07/01/2005: 55/10 or 0/15

Part D: 55/10 or 0/15

Benefit: The benefit that would have been payable to the surviving spouse had the member elected a 50% Joint & Survivor annuity. The excess of actual benefit payments received over the payments that would have been received had the member actually elected a 50% Joint & Survivor annuity must be repaid; the repayment can be made as an offset to the surviving spouse's monthly benefit.

For all other members, postretirement death benefits are payable according to the form of annuity elected by the member at retirement.

### Cost of Living Adjustments

The following groups receive a 1% annual COLA starting on the January 1 or July 1 following the third year of retirement if the member retires on or after Normal Retirement Date, or beginning three years after the member would have been eligible for a Normal Retirement benefit.

Nurses (07) hired prior to 06/30/2010

Security (12) hired prior to 06/30/2010

Dispatchers (64)

Clerical (65)

Grounds (70) who retire prior to 09/24/2015

Building Maintenance (71)

Professional Management (73)

Supervisor (74) who retire prior to 05/24/2016

Part C (61) members hired after 07/01/2005 receive a 2% COLA starting two years after retirement and payable each July 1.

Part D (60) members hired after 08/01/2006 receive a 2% COLA starting on the July 1 following the second year of retirement. Those hired on or after 06/26/2018 are only eligible for this COLA if they retire under normal retirement provisions with 25 years of Credited Service.

COLAs do not apply to Supplemental Benefits, death benefits, disability benefits, or benefits payable to members who terminate with a vested benefit.

## Appendix D - Glossary

**Actuarial Cost Method** - This is a procedure for determining the Actuarial Present Value of Benefits and allocating it to time periods to produce the Actuarial Accrued Liability and the Normal Cost.

**Accrued Liability** - This is the portion of the Actuarial Present Value of Benefits attributable to periods prior to the valuation date by the Actuarial Cost Method (i.e., that portion not provided by future Normal Costs).

**Actuarial Assumptions** - With any valuation of future benefits, assumptions of anticipated future events are required. If actual events differ from the assumptions made, the actual cost of the plan will vary as well. Some examples of key assumptions include the interest rate, salary scale, and rates of mortality, turnover and retirement.

**Actuarial Present Value of Benefits** - This is the present value, as of the valuation date, of future payments for benefits and expenses under the Plan, where each payment is: a) multiplied by the probability of the event occurring on which the payment is conditioned, such as the probability of survival, death, disability, termination of employment, etc.; and b) discounted at the assumed interest rate.

**Actuarial Value of Assets** - This is the value of cash, investments and other property belonging to the plan, typically adjusted to recognize investment gains or losses over a period of years to dampen the impact of market volatility on the Actuarially Determined Contribution.

**Actuarially Determined Contribution (“ADC”)** - This is the employer’s periodic contributions to a defined benefit plan, calculated in accordance with actuarial standards of practice.

**Attribution Period** - The period of an employee’s service to which the expected benefit obligation for that employee is assigned. The beginning of the attribution period is the employee’s date of hire and costs are spread across all employment.

**Interest Rate** - This is the long-term expected rate of return on any investments set aside to pay for the benefits. In a financial reporting context (e.g., GASB 68) this is termed the Discount Rate.

**Normal Cost** - This is the portion of the Actuarial Present Value of Benefits allocated to a valuation year by the Actuarial Cost Method.

**Past Service Cost** - This is a catch-up payment to fund the Unfunded Accrued Liability over time (generally 10 to 30 years). A closed amortization period is a specific number of years counted from one date and reducing to zero with the passage of time; an open amortization period is one that begins again or is recalculated at each valuation date. Also known as the Amortization Payment.

**Return on Plan Assets** - This is the actual investment return on plan assets during the fiscal year.

**Unfunded Accrued Liability** - This is the excess of the Accrued Liability over the Actuarial Value of Assets.