



**TOWN OF NEWINGTON
MUNICIPAL EMPLOYEES' PENSION PLAN**

**Actuarial Valuation as of July 1, 2018
For Fiscal Year 2019-20**

Prepared by

Rebecca A. Sielman, FSA
Consulting Actuary

Teresa M. Medeiros, FSA
Consulting Actuary

80 Lamberton Road
Windsor, CT 06095 USA
Tel +1 860.687.2110
Fax +1 860.687.2111
milliman.com

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Certification

We have performed an actuarial valuation of the Plan as of July 1, 2018 for fiscal year 2019-20. 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 set forth an actuarial recommendation of the contribution, or range of contributions, which will properly fund the plan, in accordance with applicable government regulations. In addition, this report provides:

- A valuation of plan assets and liabilities to review the year-to-year progress of funding.
- Information needed to meet disclosure requirements.
- 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.

Milliman's work is prepared solely for the internal business use of the 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 exception(s): (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

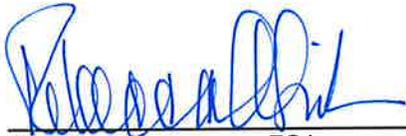
The calculations reported herein have been made on a basis consistent with our understanding of ERISA and the related sections of the tax code. Additional determinations may be needed for purposes other than meeting funding requirements, such as judging benefit security at plan termination or meeting 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.

We further certify that, in our opinion, each actuarial assumption, method and technique used is reasonable taking into account the experience of the Plan and reasonable expectations or would, in the aggregate, result in a total contribution equivalent to that which would be determined if each such assumption, method, or technique were reasonable. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurement.

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.

The signing actuary is independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

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.



Rebecca A. Sielman, FSA
Consulting Actuary



Teresa M. Medeiros, FSA
Consulting Actuary

Section I - Executive Summary

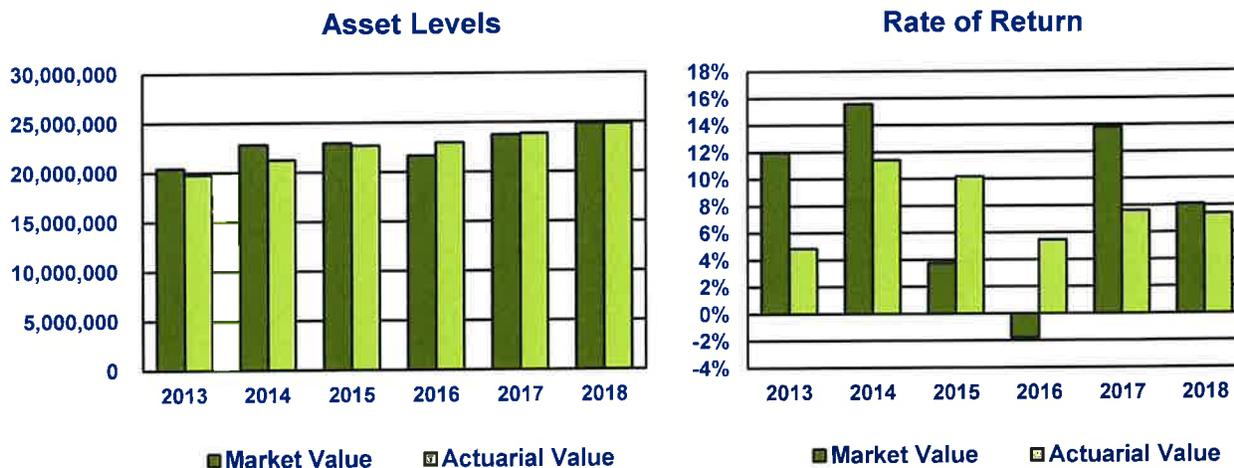
A. Highlights

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 over five years.

	Market	Actuarial
Value as of July 1, 2017	\$23,763,344	\$23,890,261
Employer and Employee Contributions	2,009,517	2,009,517
Investment Income	1,893,440	1,735,125
Benefit Payments and Administrative Expenses	(2,789,541)	(2,789,541)
Value as of July 1, 2018	24,876,760	24,845,362

For fiscal year 2017-18, the plan's assets earned 8.101% on a Market Value basis and 7.383% on an Actuarial Value basis. The actuarial assumption for this period was 7.125%; the result is an asset gain of \$228,100 on a Market Value basis and a gain of \$60,600 on an Actuarial Value basis. Historical asset values are shown in the graph below to the left; historical returns are shown in the graph below to the right.



Please note that the Actuarial Value currently is less than the Market Value by \$31,400. This figure represents investment gains that will be gradually recognized over the next five years. This process will exert downward pressure on the Town's contribution, unless there are offsetting market losses.

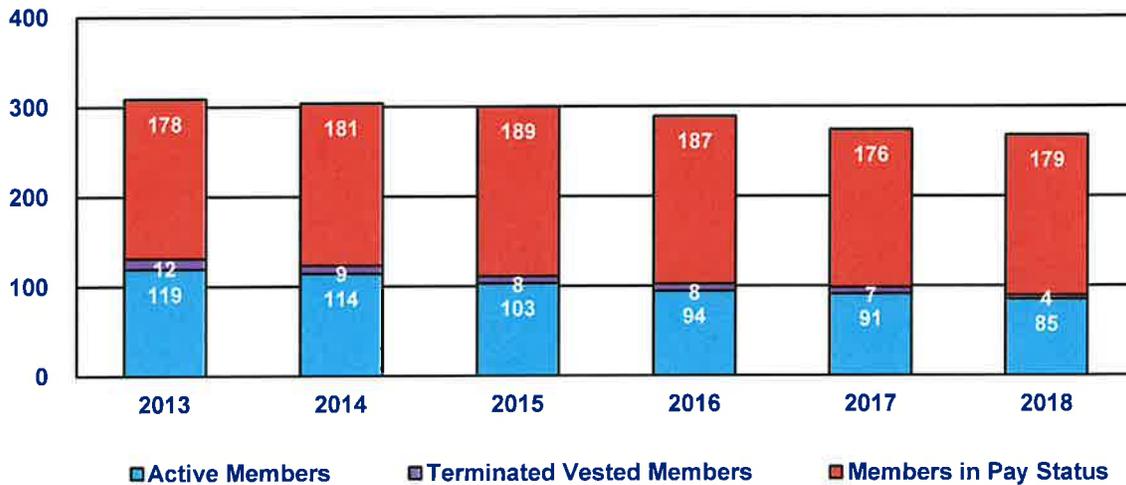
Section I - Executive Summary

A. Highlights

Membership

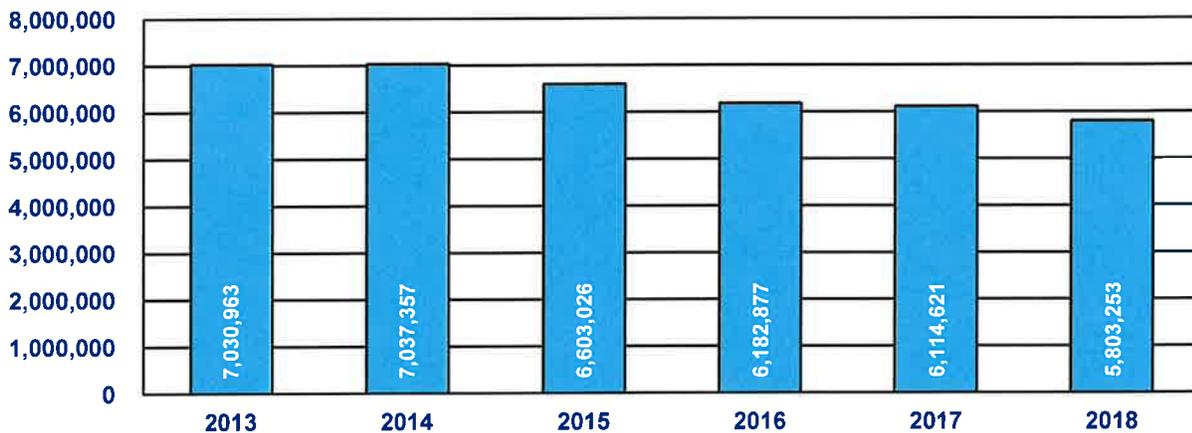
There are three basic categories of plan members included in the actuarial valuation: (1) active employees who have met the eligibility requirements for membership, (2) former employees who have a vested right to benefits but have not yet started collecting, and (3) members who are receiving monthly pension benefits.

Number of Members



From July 1, 2017 to July 1, 2018, the overall membership decreased from 274 to 268. During this period, 9 members retired and 6 members died without a beneficiary.

Payroll



The decline in overall payroll levels tracks the decline in active members covered by this plan.

Section I - Executive Summary

A. Highlights

Plan Changes

None.

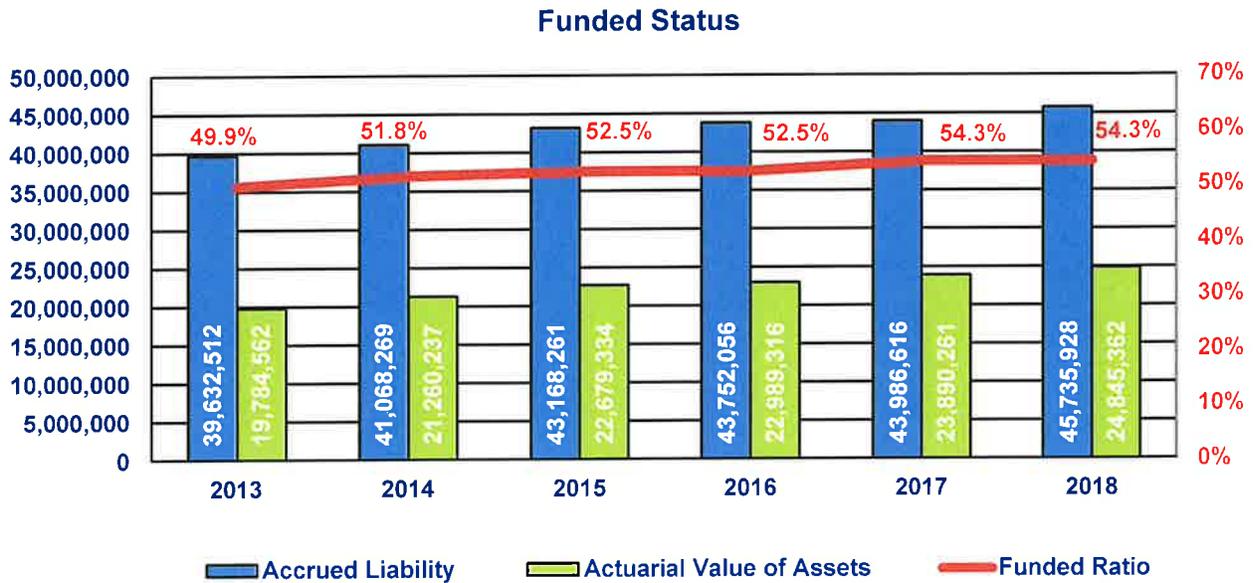
Changes in Actuarial Methods or Assumptions

In order to better anticipate future market returns, we have lowered the interest rate assumption from 7.25% to 7.125%. This change increased the Unfunded Accrued Liability by \$539,700 and increased the Actuarially Determined Contribution by \$42,300. We will continue to reduce the interest rate assumption by increments over the next several years.

Section I - Executive Summary A. Highlights

Funded Status

The chart below shows the plan's Accrued Liability and Actuarial Value of Assets for the past few years.



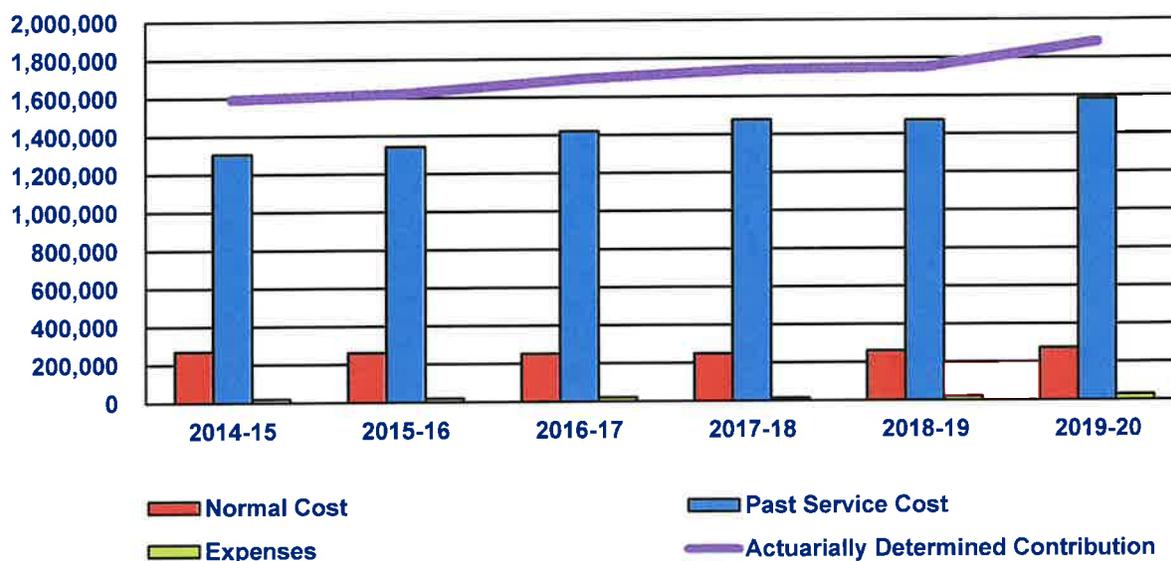
Section I - Executive Summary

A. Highlights

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 **Expenses** expected to be paid from plan assets. If the plan has a sufficiently large surplus, the Past Service Cost may be large enough to cover the Normal Cost, in which case no contribution is required.

Contribution levels for the current year and the past few fiscal years are shown below.



Section I - Executive Summary

A. Highlights

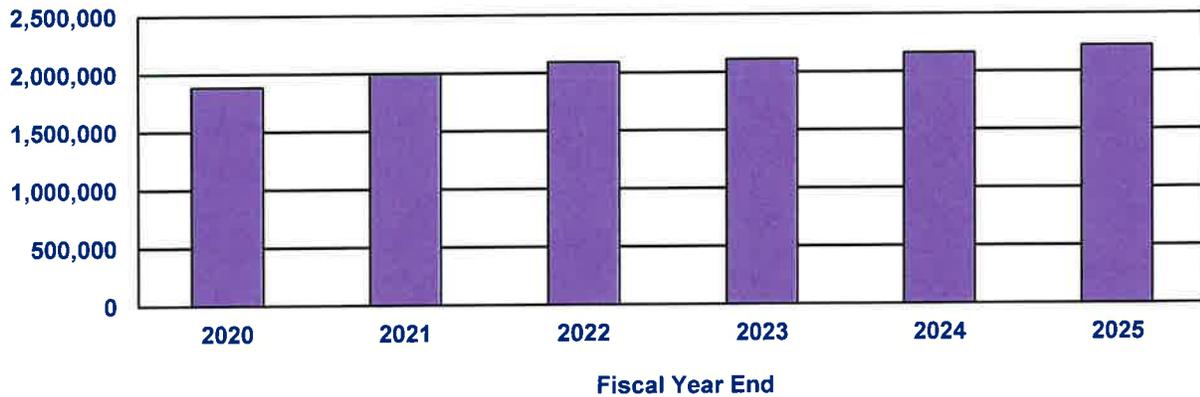
Long Range Forecast

The Town intends to reduce the interest rate assumption gradually over the next several years. This will depress the funded ratio and increase the Actuarially Determined Contribution while that process is underway.

Funded Ratio



Actuarially Determined Contribution



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

B. Summary of Principal Results

Membership	July 1, 2017	July 1, 2018
Active Members	91	85
Terminated Vested Members	7	4
Members in Pay Status	176	179
Payroll	\$6,114,621	\$5,803,253
Assets and Liabilities	July 1, 2017	July 1, 2018
Market Value of Assets	\$23,763,344	\$24,876,760
Actuarial Value of Assets	23,890,261	24,845,362
Accrued Liability for Active Members	\$20,187,688	\$20,012,367
Accrued Liability for Terminated Vested Members	515,539	397,568
Accrued Liability for Members in Pay Status	23,283,389	25,325,993
Total Accrued Liability	43,986,616	45,735,928
Unfunded Accrued Liability	20,096,355	20,890,566
Funded Ratio	54.3%	54.3%
Actuarially Determined Contribution for Fiscal Year	2018-19	2019-20
Normal Cost	\$260,435	\$273,713
Past Service Cost	1,472,378	1,582,340
Expenses	20,200	29,200
Actuarially Determined Contribution	1,753,013	1,885,253
Breakdown of Actuarially Determined Contribution	2018-19	2019-20
Board of Education	\$961,187	\$1,014,573
Town	791,826	870,680
Total	1,753,013	1,885,253

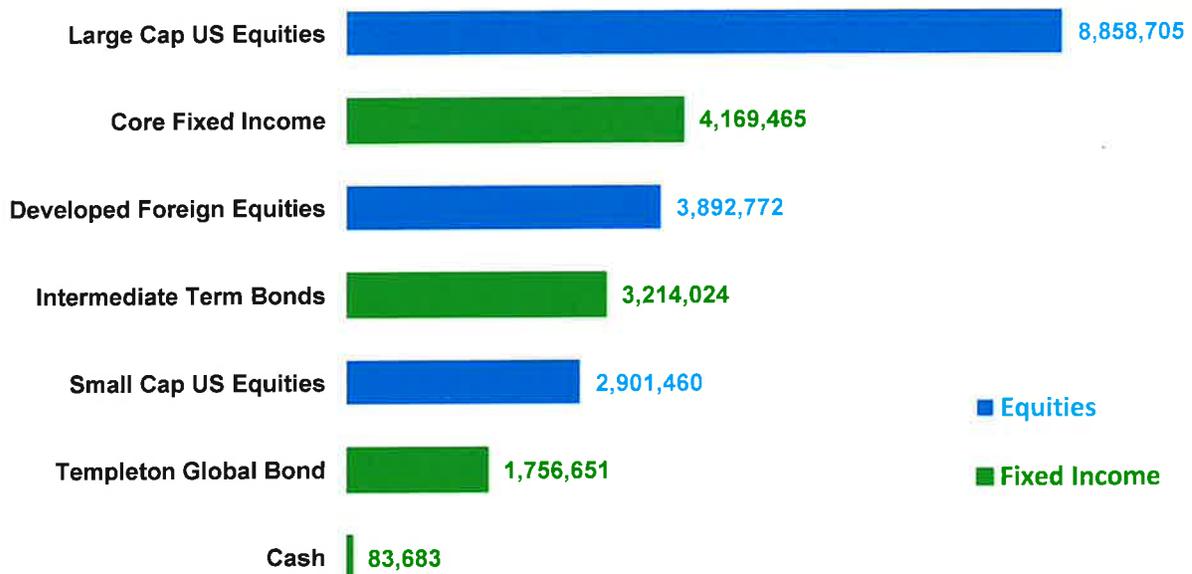
Section II - Plan Assets

A. Summary of Fund Transactions

Market Value as of July 1, 2017	\$23,763,344
Employer Contributions	1,741,672
Employee Contributions	267,845
Benefit Payments	(2,761,153)
Interest and Dividends	659,701
Capital Gains/(Losses)	1,337,020
Investment Expenses	(103,281)
Administrative Expenses	(28,388)
 Market Value as of July 1, 2018	 24,876,760
 Approximate Rate of Return	 8.101%

Note: 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.

Asset Allocation as of July 1, 2018



Section II - Plan Assets

B. Development of Actuarial Value of Assets

In order to minimize the impact of market fluctuations on the contribution level, we use an Actuarial Value of Assets that recognizes gains and losses over a five year period. The Actuarial Value of Assets as of July 1, 2018 is determined below.

1.	Expected Market Value of Assets:		
	a. Market Value of Assets as of July 1, 2017		\$23,763,344
	b. Employer and Employee Contributions		2,009,517
	c. Benefit Payments and Administrative Expenses		(2,789,541)
	d. Expected Investment Return Based on 7.125% Interest		<u>1,665,320</u>
	e. Expected Market Value of Assets as of July 1, 2018		24,648,640
2.	Actual Market Value of Assets as of July 1, 2018		24,876,760
3.	Market Value (Gain)/Loss: (1e) - (2)		(228,120)
4.	Delayed Recognition of Market (Gains)/Losses:		
	Plan Year End	(Gain)/Loss	Percent Not Recognized
	06/30/2018	(\$228,120)	80%
	06/30/2017	(1,397,733)	60%
	06/30/2016	2,053,011	40%
	06/30/2015	842,672	20%
			<u>168,534</u>
			(31,398)
5.	Actuarial Value of Assets as of July 1, 2018: (2) + (4)		24,845,362
6.	Approximate Rate of Return on Actuarial Value of Assets		7.383%
7.	Actuarial Value (Gain)/Loss		(60,634)

Section III - Development of Contribution
A. Past Service Cost

For determining the Past Service Cost, the Unfunded Accrued Liability is amortized as a level percent over a period of 30 years starting on July 1, 2005.

	July 1, 2017	July 1, 2018
1. Accrued Liability		
Active Members	\$20,187,688	\$20,012,367
Terminated Vested Members	515,539	397,568
Retired Members	21,941,970	24,005,073
Disabled Members	15,966	15,392
Beneficiaries of Deceased Members	<u>1,325,453</u>	<u>1,305,528</u>
Total	43,986,616	45,735,928
2. Actuarial Value of Assets (see Section II B)	23,890,261	24,845,362
3. Unfunded Accrued Liability: (1) - (2)	20,096,355	20,890,566
4. Funded Ratio: (2) / (1)	54.3%	54.3%
5. Amortization Period	18	17
6. Amortization Growth Rate	3.50%	3.50%
7. Past Service Cost: (3) amortized over (5)	1,472,378	1,582,340

Section III - Development of Contribution
B. Actuarially Determined Contribution

	Fiscal Year 2018-19	Fiscal Year 2019-20
1. Total Normal Cost	\$521,098	\$518,774
2. Expected Employee Contributions	260,663	245,061
3. Expected Expenses	20,200	29,200
4. Net Normal Cost: (1) - (2) + (3)	280,635	302,913
5. Past Service Cost (see Section III A)	1,472,378	1,582,340
6. Actuarially Determined Contribution: (4) + (5)	1,753,013	1,885,253

Milliman Actuarial Valuation

**Section III - Development of Contribution
C. Long Range Forecast**

This forecast is based on the results of the July 1, 2018 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. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

Valuation Date	Interest Rate	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio	Fiscal Year Ending	Cash Flows Projected to the Following Fiscal Year			
							Town Contributions	Employee Contributions	Benefit Payments	Net Cash Flows
7/1/2018	7.000%	\$45,735,928	\$24,845,362	\$20,890,566	54.3%	2020	\$1,885,253	\$218,000	(\$3,178,000)	(\$1,074,747)
7/1/2019	6.875%	47,321,000	25,305,000	22,016,000	53.5%	2021	1,997,000	201,000	(3,303,000)	(1,105,000)
7/1/2020	6.750%	48,317,000	25,837,000	22,480,000	53.5%	2022	2,093,000	183,000	(3,437,000)	(1,161,000)
7/1/2021	6.750%	48,604,000	26,756,000	21,848,000	55.0%	2023	2,114,000	167,000	(3,542,000)	(1,261,000)
7/1/2022	6.750%	48,722,000	27,377,000	21,345,000	56.2%	2024	2,162,000	151,000	(3,673,000)	(1,360,000)
7/1/2023	6.750%	48,688,000	27,888,000	20,800,000	57.3%	2025	2,222,000	135,000	(3,780,000)	(1,423,000)
7/1/2024	6.750%	47,971,000	28,328,000	19,643,000	59.1%	2026	2,225,000	122,000	(3,872,000)	(1,525,000)
7/1/2025	6.750%	47,618,000	28,733,000	18,885,000	60.3%	2027	2,298,000	109,000	(3,950,000)	(1,543,000)
7/1/2026	6.750%	47,109,000	29,059,000	18,050,000	61.7%	2028	2,386,000	98,000	(4,007,000)	(1,523,000)
7/1/2027	6.750%	46,457,000	29,387,000	17,070,000	63.3%	2029	2,484,000	88,000	(4,047,000)	(1,475,000)
7/1/2028	6.750%	45,673,000	29,756,000	15,917,000	65.2%	2030	2,594,000	78,000	(4,101,000)	(1,429,000)
7/1/2029	6.750%	44,774,000	30,200,000	14,574,000	67.4%	2031	2,718,000	68,000	(4,148,000)	(1,362,000)
7/1/2030	6.750%	43,737,000	30,720,000	13,017,000	70.2%	2032	2,855,000	59,000	(4,167,000)	(1,253,000)
7/1/2031	6.750%	42,558,000	31,342,000	11,216,000	73.6%	2033	3,018,000	51,000	(4,165,000)	(1,096,000)
7/1/2032	6.750%	41,261,000	32,119,000	9,142,000	77.8%	2034	3,221,000	45,000	(4,149,000)	(883,000)
7/1/2033	6.750%	39,863,000	33,108,000	6,755,000	83.1%	2035	3,503,000	38,000	(4,101,000)	(560,000)
7/1/2034	6.750%	38,371,000	34,383,000	3,988,000	89.6%	2036	4,058,000	33,000	(4,040,000)	51,000
7/1/2035	6.750%	36,816,000	36,077,000	739,000	98.0%	2037	807,000	29,000	(3,961,000)	(3,125,000)
7/1/2036	6.750%	35,208,000	38,516,000	(3,308,000)	109.4%	2038	0	24,000	(3,883,000)	(3,859,000)
7/1/2037	6.750%	33,562,000	37,834,000	(4,272,000)	112.7%	2039	0	21,000	(3,781,000)	(3,760,000)

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.

Section IV - Accounting Information
A. Notes to Required Supplementary Information

The information presented in Section IV has been determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date	July 1, 2018
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level percent
Amortization Period	Closed 30 years from July 1, 2005
Asset Valuation Method	5 Year Smoothed Market Value
Actuarial Assumptions	
Investment Rate of Return	7.000%
Projected Salary Increases	3.50%
Amortization Growth Rate	3.50%
Inflation	2.75%
Cost-of-Living Adjustments	None

Milliman Actuarial Valuation

**Section IV - Accounting Information
B. Historical Schedule of Funding Progress**

Actuarial Valuation Date	For Fiscal Year	(1)	(2)	(3)	(4)	(5)	(6)
		Actuarial Value of Assets	Accrued Liability	Unfunded Accrued Liability (UAAL) (2) - (1)	Funded Ratio (1) / (2)	Payroll	UAAL as a Percentage of Payroll (3) / (5)
07/01/2009	2010-11	\$20,806,821	\$32,079,255	\$11,272,434	64.9%	\$8,831,569	127.6%
07/01/2010	2011-12	20,550,232	32,751,099	12,200,867	62.7%	8,170,250	149.3%
07/01/2011	2012-13	19,765,407	37,089,866	17,324,459	53.3%	7,503,241	230.9%
07/01/2012	2013-14	19,209,556	37,488,499	18,278,943	51.2%	7,230,177	252.8%
07/01/2013	2014-15	19,784,562	39,632,512	19,847,950	49.9%	6,806,553	291.6%
07/01/2014	2015-16	21,260,237	41,068,269	19,808,032	51.8%	6,886,617	287.6%
07/01/2015	2016-17	22,679,334	43,168,261	20,488,927	52.5%	6,514,492	314.5%
07/01/2016	2017-18	22,989,316	43,752,056	20,762,740	52.5%	6,127,475	338.8%
07/01/2017	2018-19	23,890,261	43,986,616	20,096,355	54.3%	6,114,621	328.7%
07/01/2018	2019-20	24,845,362	45,735,928	20,890,566	54.3%	5,803,253	360.0%

Section IV - Accounting Information
C. Schedule of Employer Contributions

Fiscal Year Ending June 30	(1) Actuarially Determined Contribution	(2) Contribution in Relation to the Actuarially Determined Contribution	(3) Contribution Deficiency/ (Excess) (1) - (2)	(4) Payroll	(5) Contribution as a Percentage of Payroll (2) / (4)
2011	\$1,218,956	\$1,218,956	\$0	\$8,831,569	13.80%
2012	1,267,876	1,267,876	0	8,170,250	15.52%
2013	1,373,058	1,696,511	(323,453)	7,503,241	22.61%
2014	1,452,707	1,452,707	0	7,230,177	20.09%
2015	1,594,153	1,594,153	0	6,806,553	23.42%
2016	1,622,642	1,622,642	0	6,886,617	23.56%
2017	1,694,689	1,694,689	0	6,514,492	26.01%
2018	1,741,672	1,741,672	0	6,127,475	28.42%
2019	1,753,013	TBD	TBD	6,114,621	TBD
2020	1,885,253	TBD	TBD	5,803,253	TBD

Section IV - Accounting Information

D. Accrued and Vested Benefits

The actuarially computed Value of Accrued Benefits represents the present value of (a) the benefits based on earnings and service to date expected to become payable at future dates to present employees, (b) the benefits expected to become payable to former employees who have terminated service with vested rights or who have become inactive, and (c) the benefits currently payable to retired participants and beneficiaries.

	As of July 1, 2017	As of July 1, 2018
1. Value of Vested Benefits		
Active Members	\$14,781,320	\$14,955,913
Terminated Vested Members	515,539	397,568
Retired Members	21,941,970	24,005,073
Disabled Members	15,966	15,392
Beneficiaries of Deceased Members	<u>1,325,453</u>	<u>1,305,528</u>
Total Value of Vested Benefits	38,580,248	40,679,474
2. Value of Non-Vested Benefits	315,231	309,141
3. Total Value of Accrued Benefits: (1) + (2)	38,895,479	40,988,615
4. Market Value of Assets	23,763,344	24,876,760
5. Vested Funded Ratio: (4) / (1)	61.6%	61.2%
6. Accrued Funded Ratio: (4) / (3)	61.1%	60.7%

Section IV - Accounting Information
E. Statement of Changes in Accrued Plan Benefits

Increase/(Decrease) during the 2017-2018 plan year attributable to:

Increase for interest due to the decrease in the discount period	\$2,674,629
Benefits Accumulated/(Forfeited)	1,711,514
Benefit Payments	(2,761,153)
Plan Amendments	0
Changes in Actuarial Assumptions	468,146
Net Increase/(Decrease)	2,093,136

Value of Accrued Plan Benefits:

July 1, 2018	\$40,988,615
July 1, 2017	38,895,479
Net Increase/(Decrease)	2,093,136

Section V - Membership Data
A. Reconciliation of Membership from Prior Valuation

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

	Active	Term. Vested	Retirees	Disabled	Bene- ficiaries	Total
Count as of July 1, 2017	91	7	159	1	16	274
Terminated not vested	-	-	-	-	-	0
Terminated, benefits due	-	-	-	-	-	0
Retired	(6)	(3)	9	-	-	0
Died, with beneficiary	-	-	-	-	-	0
Died, no beneficiary	-	-	(6)	-	-	(6)
Refund paid	-	-	-	-	-	0
Transfer out to other Plan	-	-	-	-	-	0
Payment Ceased	-	-	-	-	-	0
New member	-	-	-	-	-	0
New beneficiary	-	-	-	-	-	0
Correction	-	-	-	-	-	0
Count as of July 1, 2018	85	4	162	1	16	268

As of July 1, 2018, the active membership included 48 Board of Education members with payroll of \$3,080,059 and 37 Town members with payroll of \$2,723,194.

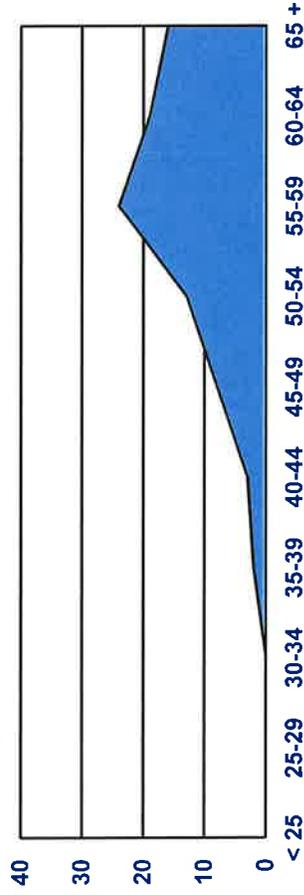
Section V - Membership Data
B. Statistics of Membership

	As of July 1, 2017	As of July 1, 2018
Active Members		
Number	91	85
Average Age	56.7	57.6
Average Service	20.0	20.6
Total Payroll	\$6,114,621	\$5,803,253
Average Payroll	67,194	68,274
Terminated Vested Members		
Number	7	4
Total Annual Benefit	\$69,439	\$49,859
Average Annual Benefit	9,920	12,465
Average Age	54.4	52.8
Retired Members		
Number	159	162
Total Annual Benefit	\$2,500,955	\$2,676,754
Average Annual Benefit	15,729	16,523
Average Age	76.4	76.1
Disabled Members		
Number	1	1
Total Annual Benefit	\$3,720	\$3,720
Average Annual Benefit	3,720	3,720
Average Age	88.0	89.0
Beneficiaries of Deceased Members		
Number	16	16
Total Annual Benefit	\$146,192	\$146,191
Average Annual Benefit	9,137	9,137
Average Age	71.1	72.1

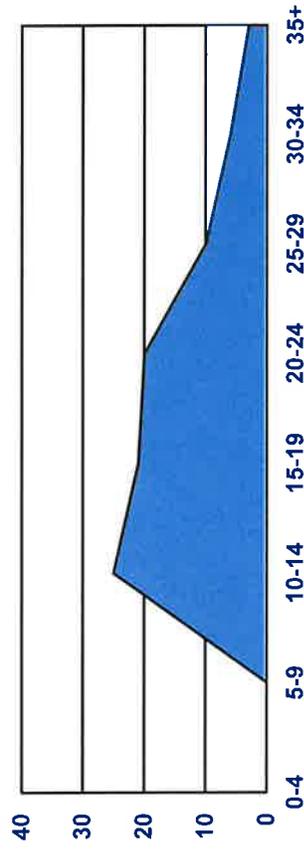
**Section V - Membership Data
C. Distribution of Active Members as of July 1, 2018 - Count**

Age	Years of Service										Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	35+	Total	
< 25	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	2	0	0	0	0	0	0	0	2
40-44	0	0	1	1	1	0	0	0	0	0	3
45-49	0	0	2	3	3	0	0	0	0	0	8
50-54	0	0	4	3	1	3	2	0	0	0	13
55-59	0	0	4	6	7	3	4	0	0	0	24
60-64	0	0	8	3	5	1	0	2	0	0	19
65 +	0	0	4	5	3	3	0	1	0	0	16
Total	0	0	25	21	20	10	6	3	0	3	85

Distribution By Age



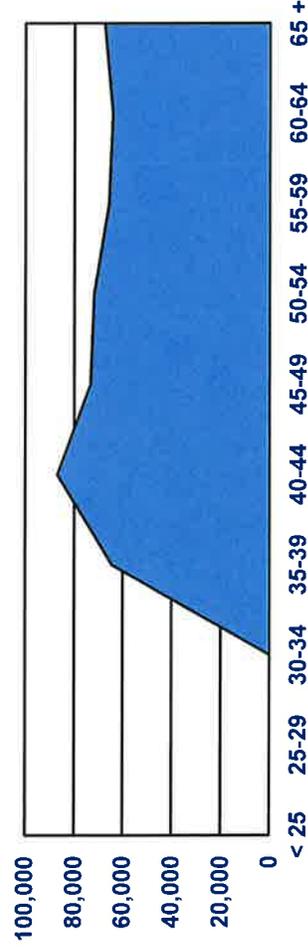
Distribution by Years of Service



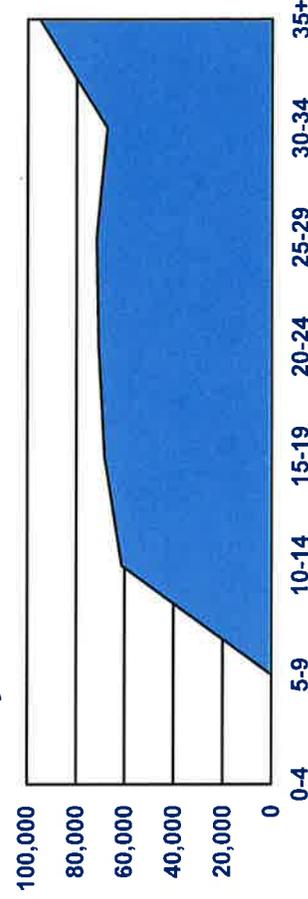
Section V - Membership Data
D. Distribution of Active Members as of July 1, 2018 - Average Pay

Age	Years of Service										Total	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	35+	Total		
< 25	0	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	64,642	0	0	0	0	0	0	0	0	64,642
40-44	0	0	81,012	100,416	79,490	0	0	0	0	0	0	86,973
45-49	0	0	53,296	75,089	85,397	0	0	0	0	0	0	73,506
50-54	0	0	65,893	82,132	70,731	80,724	57,061	0	0	0	0	72,076
55-59	0	0	69,550	56,485	65,424	72,355	72,631	0	0	0	0	65,944
60-64	0	0	53,999	58,570	65,889	78,675	0	103,159	0	0	0	64,323
65 +	0	0	61,030	70,386	75,620	60,243	0	79,579	0	0	0	67,701
Total	0	0	61,391	68,506	71,034	71,864	67,441	95,299	68,274	68,274	68,274	68,274

Distribution By Age



Distribution by Years of Service



Section V - Membership Data
E. Distribution of Inactive Members as of July 1, 2018

	Age	Number	Annual Benefits
Terminated Vested Members /	< 30	0	\$0
Members Due Refunds	30 - 39	0	0
	40 - 49	1	12,956
	50 - 59	3	36,903
	60 - 64	0	0
	65 +	0	0
	Total	4	49,859
Retired Members	< 50	0	\$0
	50 - 59	10	260,518
	60 - 69	32	674,882
	70 - 79	59	1,088,327
	80 - 89	42	531,282
	90 +	19	121,745
	Total	162	2,676,754
Disabled Members	< 50	0	\$0
	50 - 59	0	0
	60 - 69	0	0
	70 - 79	0	0
	80 - 89	1	3,720
	90 +	0	0
	Total	1	3,720
Beneficiaries of Deceased Members	< 50	0	\$0
	50 - 59	3	34,617
	60 - 69	3	23,408
	70 - 79	4	38,739
	80 - 89	5	46,998
	90 +	1	2,429
	Total	16	146,191

Appendix A - Actuarial Funding Method

The actuarial funding method used in the valuation of this Plan is known as the **Entry Age Normal Cost Method**. Recommended annual contributions until the accrued liability is completely funded will consist of two pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability.

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 liability for the plan is the excess of the Accrued Liability over the assets which have been accumulated for the plan. This Unfunded Accrued Liability is amortized as a level percent. Beginning on July 1, 2005, the amortization period is 30 years; the amortization period will decrease each year until it reaches 10 years, after which point it will remain at 10 years.

The **Actuarial Value of Assets** is determined by recognizing asset gains and losses over **five** 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.

Interest	Current: 7.000%																
	Prior: 7.125%																
Salary Scale	3.50%																
Amortization Growth Rate	3.50%																
Expenses	Administrative expenses paid in the prior year, increased by 3% and rounded to the nearest \$100.																
Healthy Mortality	RP-2000 Combined Healthy Mortality Table, Male and Female, with generational projection of future mortality improvements per Scale AA. This assumption includes a margin for improvements in longevity beyond the valuation date.																
Turnover	Rates according to the following table:																
	<table border="0"> <thead> <tr> <th style="text-align: left;">Service</th> <th style="text-align: left;">Rate</th> </tr> </thead> <tbody> <tr> <td>0-4 years</td> <td>10%</td> </tr> <tr> <td>5+ years</td> <td>5%</td> </tr> </tbody> </table>	Service	Rate	0-4 years	10%	5+ years	5%										
Service	Rate																
0-4 years	10%																
5+ years	5%																
Retirement	Rates according to the following table:																
	<table border="0"> <thead> <tr> <th style="text-align: left;">Age</th> <th style="text-align: left;">Rate</th> </tr> </thead> <tbody> <tr> <td>55</td> <td>3%</td> </tr> <tr> <td>56-57</td> <td>1%</td> </tr> <tr> <td>58</td> <td>5%</td> </tr> <tr> <td>59-61</td> <td>1%</td> </tr> <tr> <td>62-64</td> <td>20%</td> </tr> <tr> <td>65-69</td> <td>30%</td> </tr> <tr> <td>70</td> <td>100%</td> </tr> </tbody> </table>	Age	Rate	55	3%	56-57	1%	58	5%	59-61	1%	62-64	20%	65-69	30%	70	100%
Age	Rate																
55	3%																
56-57	1%																
58	5%																
59-61	1%																
62-64	20%																
65-69	30%																
70	100%																
Disability	11th Railroad Retirement Board Disability Rates.																
Disabled Mortality	RP-2000 Disabled Mortality Table, Male and Female. This assumption does not include a margin for improvements in longevity beyond the valuation date.																
Marital Status	80% of members are assumed to be married with wives 3 years younger than husbands.																

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.

Eligibility	Employed for twenty or more hours a week for more than 5 months per calendar year. Effective January 1, 2007, the Plan is closed to new members.
Final Average Earnings	Highest average earnings received in any three full calendar years.
Continuous Service	Period of continuous employment with the Town beginning with the first of the month following date of employment.
Aggregate Service	The sum of all periods of Continuous Service.
Member Contributions	4.5% of after tax Earnings. Interest is credited at 4% per annum. Refund of Employee Contributions with interest to date of termination of employment or death, unless the employee is eligible for a deferred retirement income.
Normal Form of Benefit	Modified Cash Refund.
Normal Retirement Date	Earlier of age 63 or completion of 25 years of service.
Normal Retirement Benefit	1.7% of Final Average Earnings multiplied by years of Aggregate Service through July 1, 1990 plus 2% of Final Average Earnings multiplied by years of Aggregate Service since July 1, 1990, with a minimum of \$750 per year.
Early Retirement Date	Age 55, and 5 years of Continuous Service or 15 years of Aggregate Service.
Early Retirement Benefit	Accrued Benefit, actuarially reduced if payments begin prior to the member's 58th birthday.
Death Benefit Eligibility	Married Member (of at least one year) or with minor children. Age 30 with 5 years of Continuous Service.
Death Benefit	35% of benefit accrued to date of death.

Appendix C - Summary of Plan Provisions

Disability Retirement Eligibility	Five years of Aggregate Service and not eligible for benefits under the Long Term Disability Contract.
Disability Retirement Benefit	Accrued Benefit, not less than \$1,000 per year, payable to the earlier of the end of disability, death or Normal Retirement Date.
Termination Benefit Eligibility	Five years of Continuous Service or 15 years of Aggregate Service.
Termination Benefit	Benefit accrued to date of termination with payment commencing on Normal Retirement Date.