TOWN OF BRANFORD POLICE RETIREMENT FUND

ACTUARIAL VALUATION REPORT

JULY 1, 2019

hooker & holcombe

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Executive Summary

	July 1, 2019	July 1, 2017
Number of members		
Active employees	46	28
Terminated vested members	3	2
Vested in employee contributions only	1	0
Employees in DROP	7	7
Retired, disabled and beneficiaries	49	48
Total	106	85
Covered employee payroll	4,260,576	2,599,740
Average plan salary	92,621	92,848
Actuarial present value of future benefits	42,386,030	37,297,166
Actuarial accrued liability	35,994,736	33,549,471
Plan assets		
Market value of assets	25,824,854	22,451,018
Actuarial value of assets	26,754,408	23,628,522
Unfunded accrued liability	9,240,328	9,920,949
Funded ratio	74.3%	70.4%
Actuarially determined employer contribution (ADEC)		
Fiscal year ending	2021	2019
ADEC	1,178,950	1,056,060
Fiscal year ending	2022	2020
ADEC	1,187,630	1,056,060

Valuation Results and Highlights

Purpose of the Valuation

The purpose of the valuation is to develop the Actuarially Determined Employer Contribution (ADEC).

The ultimate cost of a pension plan is based primarily on the level of benefits promised by the plan. The pension fund's investment earnings serve to reduce the cost of plan benefits and expenses. Thus,

Ultimate cost = Benefits Paid + Expenses Incurred – Investment Return – Employee Contributions

The actuarial cost method distributes this ultimate cost over the working lifetime of current plan participants. By means of this budgeting process, costs are allocated to both past and future years, and a cost is assigned to the current year. The current year's allocated cost, or normal cost, is the building block upon which the actuarially determined employer contribution is developed. The July 1, 2019 valuation produces the contributions for the fiscal years ending 2021 and 2022.

Information Available in the Valuation Report

The Executive Summary is intended to emphasize the notable results of the valuation from the perspective of the Plan Sponsor. Supporting technical detail is documented in Results of the Valuation, Supporting Exhibits and Description of Actuarial Methods and Assumptions. A concise summary of the principal provisions of the Plan is outlined in Summary of Plan Provisions.

Changes Reflected in the Valuation

This valuation includes the impact of the officers who transferred from the DC plan into the DB plan, which added approximately $108,900 to the Town normal cost. The mortality improvement scale assumption was also updated to the latest annual scale (MP-2019) published by the Society of Actuaries, which decreased the accrued liability by about 0.6%.

Cash Contribution for Fiscal Years Ending 2021 and 2022

The Town cost is:	2021 Fiscal Year	2022 Fiscal Year
	$1,178,950	$1,187,630

Liability Experience During Period Under Review

The plan experienced a net actuarial gain on liabilities of approximately $81,000 since the prior valuation. This gain was largely driven by the combined effect of retirement and turnover patterns, as well as salary increases.

Asset Experience During Period Under Review

The plan's assets provided the following rates of return during the past two fiscal years:

	2018 Fiscal Year	2019 Fiscal Year
Market Value Basis	3.4%	5.1%
Actuarial Value Basis	4.0%	3.1%

The Actuarial Value of assets, rather than the Market Value, is used to determine plan contributions. The Actuarial Value spreads the asset volatility by recognizing 20% of the difference each year, thereby smoothing out fluctuations that are inherent in the Market Value.

Assessment and Measurement of Risks

Financial Significance of Plan

It is important to understand the size of the pension plan compared to the size of the sponsor of that plan. Additional pension contributions may be required at inopportune times for the plan sponsor. In general, a plan sponsor with assets or revenue that are much larger than the liabilities in its pension plans will be better able to withstand increases in required pension contributions.

Plan Maturity Measurements

	July 1, 2019	July 1, 2017
Actuarial accrued liability for members currently in pay status as a percentage of the total actuarial accrued liability	47.0%	51.2%

• A lower percentage results in greater volatility as the investment return assumption changes.

• A higher percentage results in greater demand on cash due to a proportionately higher percentage of benefits being in pay status.

	July 1, 2019
Duration of benefit payments using an investment rate of return of 6.50%	13.5 years

• A higher duration will occur if the plan's percentage of members in pay status decreases. A plan with a higher duration will have a liability that is more sensitive to changes in the investment return assumption.

	July 1, 2019	July 1, 2017
Ratio of market value of assets to covered payroll	6.1	8.6

• A higher ratio is more typical of relatively mature plans with a larger percentage of inactive members and may cause more potential contribution volatility as pension fund assets fluctuate.

Risks to Assess

Overriding Minimum Contribution

	Fiscal Year Ending 2021
Actuarially determined employer contribution (ADEC)	1,178,950
Overriding minimum contribution (OMC)*	1,054,874
Surplus (deficit) - ADEC vs. OMC	124,076

• A deficit suggests that a plan's current funding policy contribution approach may result in little to no progress being made towards: (1) reducing the plan's unfunded liability; and (2) increasing the plan's funded ratio in the near-term.

** As defined in "Public Pension Plan Funding Policy" (Society of Actuaries, 2010).*

Estimated Impact of a 5% Reduction in Market Value of Assets

	Fiscal Year Ending 2021	Fiscal Year Ending 2022
Increase in actuarially determined employer contribution (ADEC)	23,250	23,250

• Plans would generally be subject to a larger amortization payment if the market value of assets were 5% smaller. As a result, the ADEC would generally be higher for up to 18 years.

Due to the asset smoothing method, the ADEC will additionally increase by the same amount in each of the next few years. Each of these additional contributions will continue for up to 18 years.

Estimated Impact of a 1 Year Increase in Life Expectancies

	Fiscal Year Ending 2021	Fiscal Year Ending 2022
Increase in actuarially determined employer contribution (ADEC)	61,800	62,070

• If members live longer than expected, it generally results in larger benefits and/or additional benefit payments made. As a result, the ADEC would generally be higher for up to 18 years.

Historical Results

Valuation Year Beginning	Investment Return Assumption	Annual Effective Rate of Return on Market Value of Assets	Market Value of Assets as a % of Actuarial Accrued Liability	Benefit Payments as a % of Market Value of Assets
2019	6.50%	N/A	71.7%	N/A
2018	N/A	5.1%	N/A	7.3%
2017	6.50%	3.4%	66.9%	7.2%
2016	N/A	7.3%	N/A	7.7%
2015	7.00%	0.7%	75.1%	7.2%

Certification

This report presents the results of the July 1, 2019 Actuarial Valuation for Town of Branford Police Retirement Fund (the Plan) for the purpose of estimating the funded status of the Plan and determining the Actuarially Determined Employer Contribution (ADEC) for the fiscal years ending June 30, 2021 and June 30, 2022. This report may not be appropriate for any other purpose.

The valuation has been performed in accordance with generally accepted actuarial principles and practices. It is intended to comply with all applicable Actuarial Standards of Practice.

I certify that the actuarial assumptions and methods that were selected by me and represent my best estimate of anticipated actuarial experience under the Plan.

In preparing this valuation, I have relied on employee data provided by the Plan Sponsor, and on asset and contribution information provided by the Trustee. I have audited neither the employee data nor the financial information, although I have reviewed them for reasonableness.

The results in this valuation report are based on the Plan as summarized in the *Summary of Plan Provisions* section of this report and the actuarial assumptions and methods detailed in the *Description of Actuarial Methods and Assumptions* section of this report.

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 this report, an analysis of the potential range of such future measurements has not been performed.

I have no relationship with the employer or the Plan that would impair, or appear to impair, my objectivity in performing the work presented in this report. I am a member of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein.

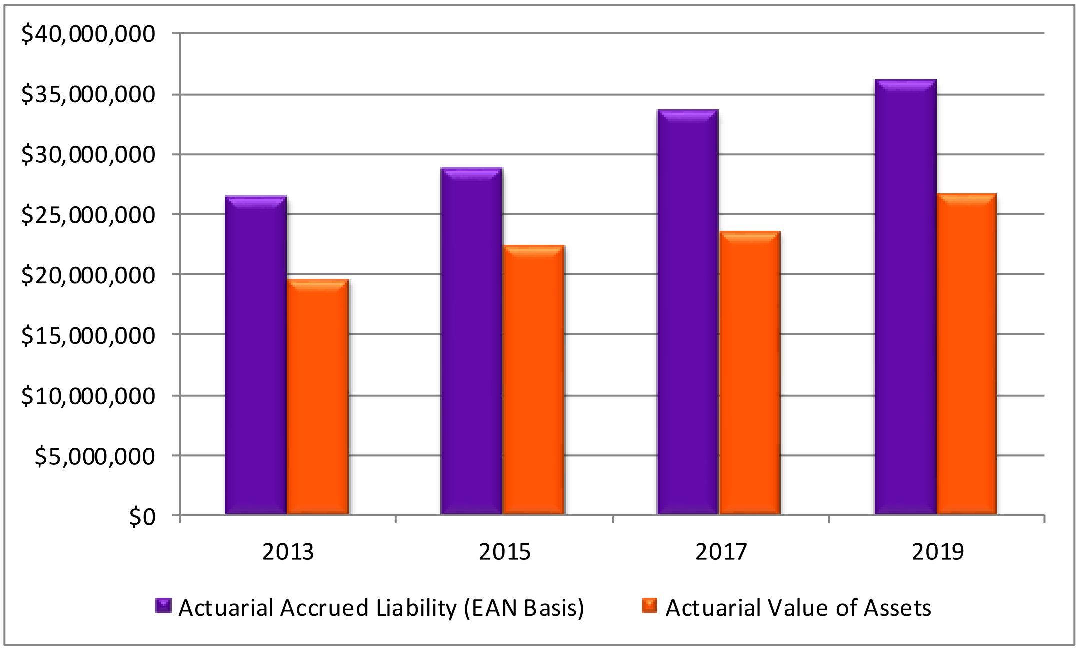
Steve A. Lemanski, FSA, FCA, MAAA
Enrolled Actuary 17-05506

March 9, 2020

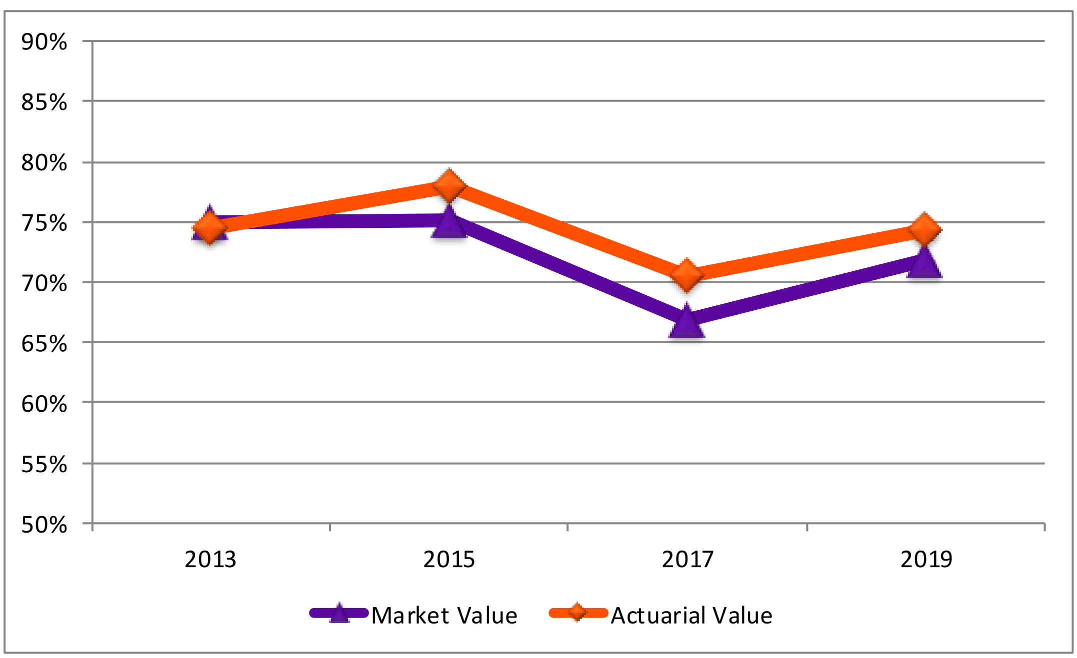
Development of Unfunded Accrued Liability and Funded Ratio

	July 1, 2019	July 1, 2017
Actuarial accrued liability for inactive members		
Retired, disabled and beneficiaries	$16,935,489	$17,187,120
Terminated vested members	562,062	148,746
Due refund of employee contributions only	1,050	0
Total	17,498,601	17,335,866
Actuarial accrued liability for employees in DROP	7,498,061	6,953,680
Actuarial accrued liability for active employees	10,998,074	9,259,925
Total actuarial accrued liability	35,994,736	33,549,471
Actuarial value of assets	26,754,408	23,628,522
Unfunded accrued liability	9,240,328	9,920,949
Funded ratio	74.3%	70.4%

Actuarial Accrued Liability vs. Actuarial Value of Assets



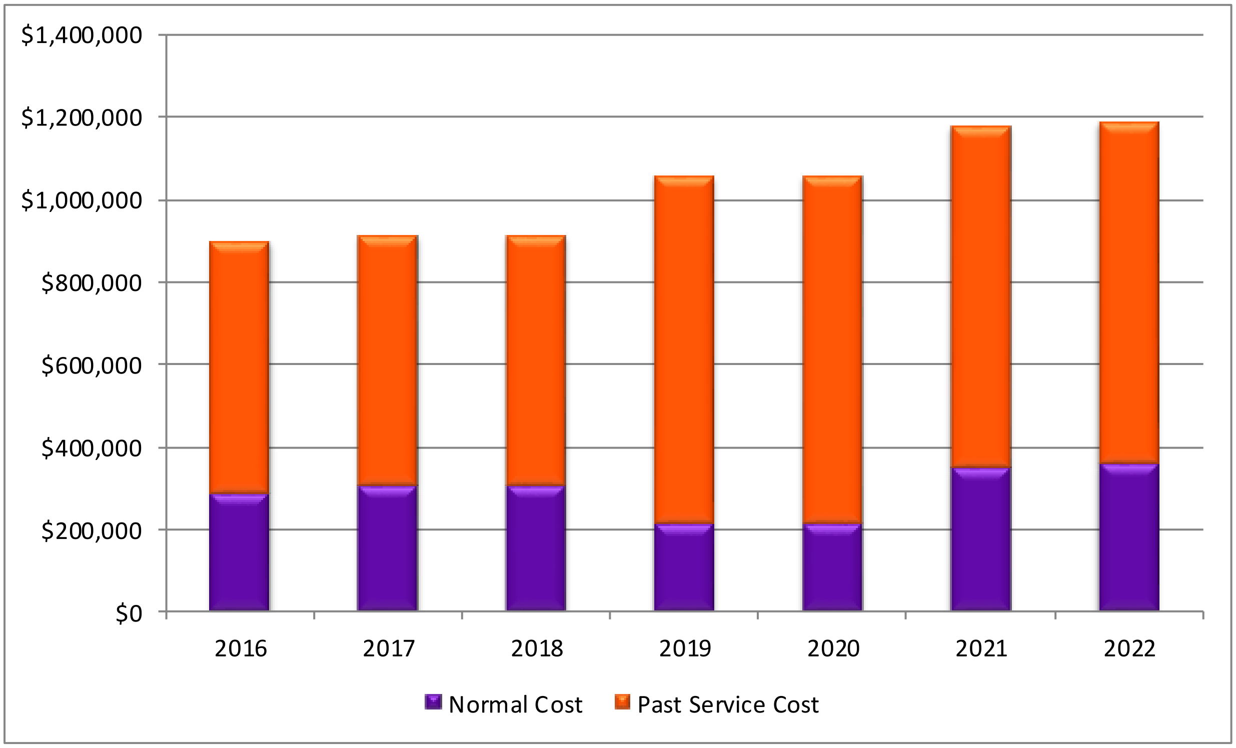
Funded Ratio



Determination of Normal Cost and Actuarially Determined Employer Contribution

	July 1, 2019		July 1, 2017	
	Cost	Percent of payroll	Cost	Percent of payroll
Gross normal cost	$715,518	16.1%	$437,672	16.4%
Estimated employee contributions	(376,706)	-8.5%	(227,046)	-8.5%
Town's normal cost	338,812	7.6%	210,626	7.9%
Amortization of unfunded accrued liability	831,670	18.8%	845,436	31.6%
Contribution before adjustment as of the valuation date	1,170,482	26.4%	1,056,062	39.5%
Contribution rounded to nearest $10	1,170,480		1,056,060	
Estimated valuation year payroll for actives not yet at 100% assumed retirement age	4,431,836		2,671,132	
Fiscal year ending	2021		2019	
Adjustment for interest and inflation	8,470		0	
Actuarially determined employer contribution	1,178,950		1,056,060	
Fiscal year ending	2022		2020	
Adjustment for interest and inflation	8,680		0	
Actuarially determined employer contribution	1,187,630		1,056,060	

Actuarially Determined Employer Contribution



Determination of Actuarial Gain/Loss

The Actuarial Gain/Loss is the difference between the expected unfunded accrued liability and the actual unfunded accrued liability, without regard to any changes in actuarial methods, actuarial assumptions or plan provisions. This can also be referred to an Experience Gain/Loss, since it reflects the difference between what was expected and what was actually experienced.

Actuarial Gain / Loss		
Expected unfunded accrued liability July 1, 2019		
Expected unfunded accrued liability July 1, 2018		
Unfunded accrued liability July 1, 2017	$9,920,949	
Gross normal cost July 1, 2017	437,672	
Town and employee contributions for 2017-2018	(2,122,489)	
Interest at 6.50% to July 1, 2018	605,982	
Expected unfunded accrued liability July 1, 2018	8,842,114	
Expected unfunded accrued liability July 1, 2019		
Expected unfunded accrued liability July 1, 2018	8,842,114	
Expected gross normal cost July 1, 2018	437,672	
Town and employee contributions for 2018-2019	(2,619,124)	
Interest at 6.50% to July 1, 2019	548,233	
Expected unfunded accrued liability July 1, 2019	7,208,895	
Actuarial (gain) / loss July 1, 2019	1,360,929	
Actual unfunded accrued liability July 1, 2019, prior to plan provision, assumption and method changes		8,569,824
Sources of (gain) / loss		
Assets	1,442,000	
Liabilities	(81,000)	
Total (gain) / loss (rounded to nearest $1,000)	1,361,000	
Assumption and method changes since prior valuation		(200,222)
Plan provision changes since prior valuation		870,726
Actual unfunded accrued liability July 1, 2019, after plan provision, assumption and method changes		9,240,328

Development of Asset Values

Summary of Fund Activity	Market Value	Actuarial Value
1. Beginning value of assets July 1, 2018		
Trust assets	$23,734,069	$25,092,840
2. Contributions		
Town contributions during year	2,375,904	2,375,904
Employee contributions during year	243,220	243,220
Total for plan year	2,619,124	2,619,124
3. Disbursements		
Benefit payments during year	1,740,559	1,740,559
Administrative expenses during year	0	0
Total for plan year	1,740,559	1,740,559
4. Net investment return		
Interest and dividends	0	N/A
Realized and unrealized gain / (loss)	1,305,492	N/A
Expected return	N/A	1,542,455
Recognized gain / (loss)	N/A	(759,452)
Required adjustment due to corridor	N/A	0
Reversal of prior year required adjustment	N/A	0
Investment-related expenses	(93,272)	N/A
Total for plan year	1,212,220	783,003
5. Ending value of assets July 1, 2019		
Trust assets: (1) + (2) - (3) + (4)	25,824,854	26,754,408
6. Approximate rate of return	5.1%	3.1%

Relationship of Actuarial Value to Market Value

1. Market value 7/1/2019	$25,824,854
2. Gain / (loss) not recognized in actuarial value 7/1/2019	(929,554)
3. Preliminary actuarial value 7/1/2019: (1) - (2)	26,754,408
4. Preliminary actuarial value as a percentage of market value: (3) ÷ (1)	103.6%
5. Gain / (loss) recognized for corridor minimum / maximum	N/A
6. Actuarial value 7/1/2019 after corridor minimum / maximum: (3) + (5)	26,754,408
7. Actuarial value as a percentage of market value: (6) ÷ (1)	103.6%

Development of Market Value Gain / Loss for 2018-2019 Plan Year

1. Market value 7/1/2018	$23,734,069
2. Town contributions	2,375,904
3. Employee contributions	243,220
4. Benefit payments	1,740,559
5. Administrative expenses	0
6. Expected return at 6.50%	1,542,455
7. Expected value 7/1/2019: (1) + (2) + (3) - (4) - (5) + (6)	26,155,089
8. Market value 7/1/2019	25,824,854
9. Market value gain / (loss) for 2018-2019 plan year: (8) - (7)	(330,235)

Recognition of Gain / Loss in Actuarial Value

Year	(a) Gain / (loss)	(b) Total recognized as of 7/1/2018	(c) Recognized in current year: 20% of (a)	(d) Total recognized as of 7/1/2019: (b) + (c)	(e) Not recognized as of 7/1/2019: (a) - (d)
2014-2015	($1,475,468)	($1,180,376)	($295,092)	($1,475,468)	$0
2015-2016	(1,355,146)	(813,087)	(271,029)	(1,084,116)	(271,030)
2016-2017	62,425	24,970	12,485	37,455	24,970
2017-2018	(698,844)	(139,769)	(139,769)	(279,538)	(419,306)
2018-2019	(330,235)	0	(66,047)	(66,047)	(264,188)
Total			(759,452)		(929,554)

Summary of Fund Activity		
	Market Value	**Actuarial Value**
1. Beginning value of assets July 1, 2017		
Trust assets	$22,451,018	$23,628,522
2. Contributions		
Town contributions during year	1,911,484	1,911,484
Employee contributions during year	211,005	211,005
Total for plan year	2,122,489	2,122,489
3. Disbursements		
Benefit payments during year	1,615,977	1,615,977
Administrative expenses during year	0	0
Total for plan year	1,615,977	1,615,977
4. Net investment return		
Interest and dividends	0	N/A
Realized and unrealized gain / (loss)	882,490	N/A
Expected return	N/A	1,475,383
Recognized gain / (loss)	N/A	(517,577)
Required adjustment due to corridor	N/A	0
Reversal of prior year required adjustment	N/A	0
Investment-related expenses	(105,951)	N/A
Total for plan year	776,539	957,806
5. Ending value of assets July 1, 2018		
Trust assets: (1) + (2) - (3) + (4)	23,734,069	25,092,840
6. Approximate rate of return	3.4%	4.0%

Relationship of Actuarial Value to Market Value	
1. Market value 7/1/2018	$23,734,069
2. Gain / (loss) not recognized in actuarial value 7/1/2018	(1,358,771)
3. Preliminary actuarial value 7/1/2018: (1) - (2)	25,092,840
4. Preliminary actuarial value as a percentage of market value: (3) ÷ (1)	105.7%
5. Gain / (loss) recognized for corridor minimum / maximum	N/A
6. Actuarial value 7/1/2018 after corridor minimum / maximum: (3) + (5)	25,092,840
7. Actuarial value as a percentage of market value: (6) ÷ (1)	105.7%

Development of Market Value Gain / Loss for 2017-2018 Plan Year	
1. Market value 7/1/2017	$22,451,018
2. Town contributions	1,911,484
3. Employee contributions	211,005
4. Benefit payments	1,615,977
5. Administrative expenses	0
6. Expected return at 6.50%	1,475,383
7. Expected value 7/1/2018: (1) + (2) + (3) - (4) - (5) + (6)	24,432,913
8. Market value 7/1/2018	23,734,069
9. Market value gain / (loss) for 2017-2018 plan year: (8) - (7)	(698,844)

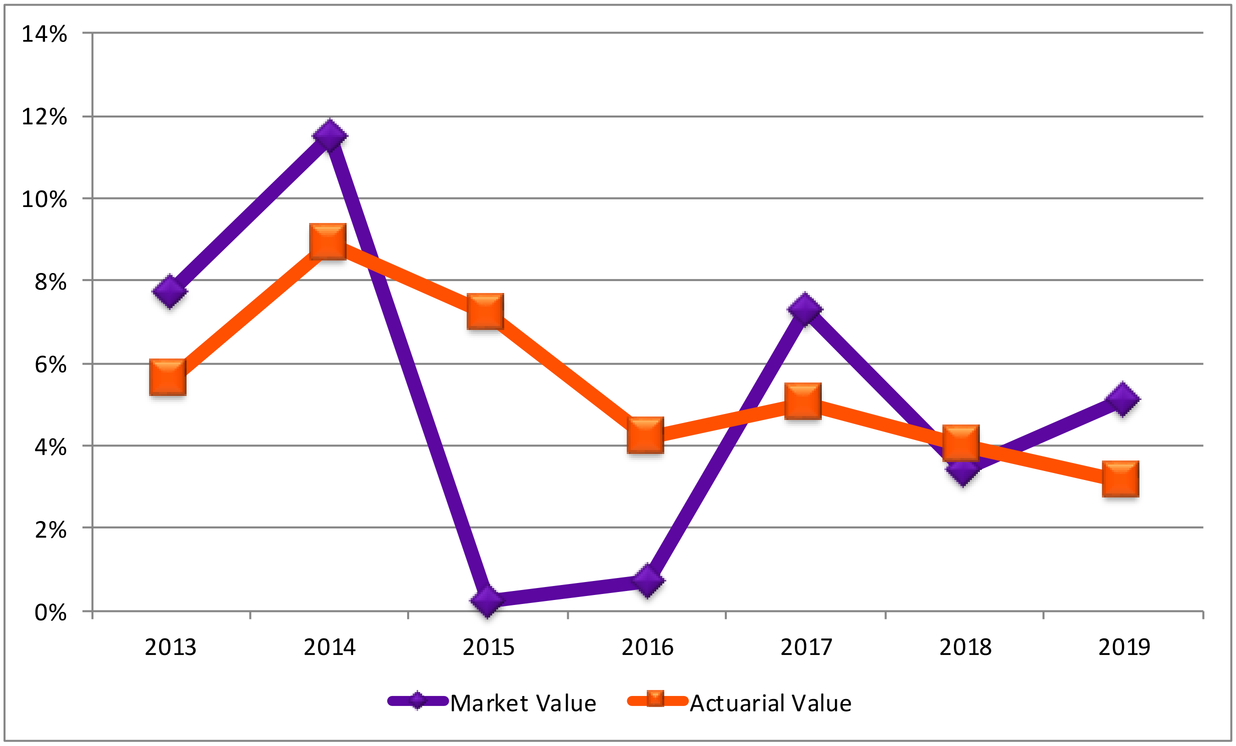
Recognition of Gain / Loss in Actuarial Value

Year	(a) Gain / (loss)	(b) Total recognized as of 7/1/2017	(c) Recognized in current year: 20% of (a)	(d) Total recognized as of 7/1/2018: (b) + (c)	(e) Not recognized as of 7/1/2018: (a) - (d)
2013-2014	$879,154	$703,324	$175,830	$879,154	$0
2014-2015	(1,475,468)	(885,282)	(295,094)	(1,180,376)	(295,092)
2015-2016	(1,355,146)	(542,058)	(271,029)	(813,087)	(542,059)
2016-2017	62,425	12,485	12,485	24,970	37,455
2017-2018	(698,844)	0	(139,769)	(139,769)	(559,075)
Total			(517,577)		(1,358,771)

Rate of Return on Market Value of Assets				
Period Ending June 30	Average Annual Effective Rate of Return			
	1 Year	3 Years	5 Years	10 Years
2010	10.1%	-0.8%	2.5%	-2.7%
2011	17.4%	5.4%	5.4%	-0.5%
2012	2.1%	9.7%	3.2%	1.0%
2013	7.7%	8.9%	5.2%	2.2%
2014	11.5%	7.0%	9.6%	4.2%
2015	0.2%	6.4%	7.6%	5.0%
2016	0.7%	4.0%	4.3%	4.9%
2017	7.3%	2.7%	5.4%	4.3%
2018	3.4%	3.8%	4.5%	4.9%
2019	5.1%	5.3%	3.3%	6.4%

Rate of Return on Actuarial Value of Assets				
Period Ending June 30	Average Annual Effective Rate of Return			
	1 Year	3 Years	5 Years	10 Years
2010	2.0%	3.2%	3.4%	0.9%
2011	5.3%	3.1%	4.1%	1.3%
2012	4.0%	3.8%	3.8%	2.0%
2013	5.6%	5.0%	3.8%	3.1%
2014	8.9%	6.1%	5.1%	4.2%
2015	7.2%	7.2%	6.2%	4.8%
2016	4.2%	6.7%	6.0%	5.1%
2017	5.0%	5.5%	6.2%	5.0%
2018	4.0%	4.4%	5.8%	4.8%
2019	3.1%	4.0%	4.7%	4.9%

Actual Rate of Return on Assets



Target Allocation and Expected Rate of Return
July 1, 2019

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*	Weighting
Large Cap Domestic Equity	14.50%	4.50%	0.65%
Mid Cap Domestic Equity	5.50%	5.00%	0.28%
Small Cap Domestic Equity	5.50%	5.00%	0.28%
Developed International Equity	12.50%	5.25%	0.66%
Emerging Markets International Equity	8.50%	6.25%	0.53%
US Real Estate and MLP's	8.50%	4.50%	0.38%
US Investment Grade Bonds	35.50%	2.00%	0.71%
US High Yield Bonds	7.50%	3.25%	0.24%
Cash	2.00%	0.25%	0.01%
	100.00%		3.74%
Long-Term Inflation Expectation			2.50%
Long-Term Expected Nominal Return			6.24%

**Long-Term Real Returns are provided by HHIA. The returns are geometric means.*

The long-term expected rate of return on pension plan investments was determined using a building block method in which best-estimate ranges of expected future real rates of return are developed. Best estimates of the real rates of return for each major asset class are included in the pension plan's target asset allocation.

The information above is based on geometric means and does not reflect additional returns through investment selection, asset allocation and rebalancing. The results support a rate between 6.25% and 6.75%. An expected rate of return of 6.50% was used.

Amortization of Unfunded Liability

Schedule of Amortization Bases				
	Date established	Amortization installment	Years remaining	Present value of remaining installments as of July 1, 2019
2019 base	July 1, 2019	831,670	18	9,240,328

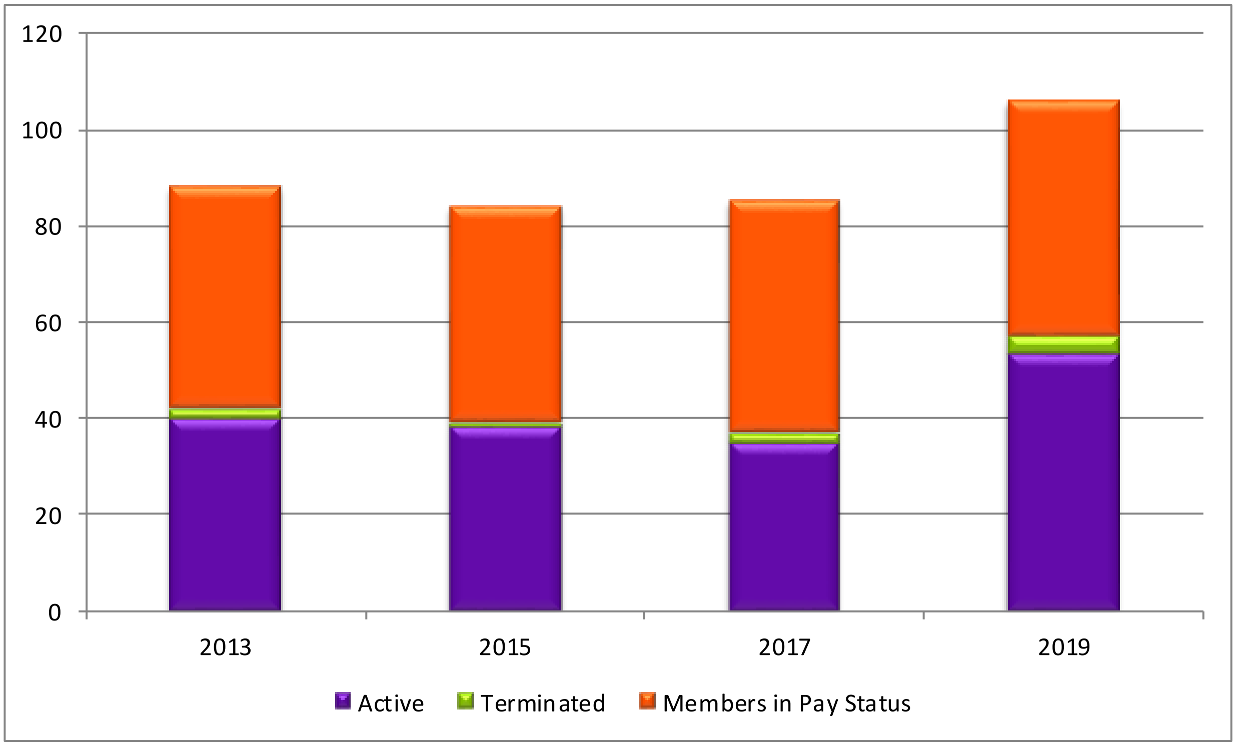
Member Data

The data reported by the Plan Sponsor for this valuation includes 46 active employees who met the Plan's minimum age and service requirements as of July 1, 2019.

Member Data						
	Active	Terminated vested	Due refund of contributions	Employees in DROP	Members in pay status	Total
Total members July 1, 2017	28	2	0	7	48	85
Adjustments	0	0	0	0	0	0
Retirements	-1	0	N/A	0	+1	0
Disabilities	0	N/A	N/A	0	0	0
Entered DROP	0	N/A	N/A	0	N/A	0
Terminations						
Vested	-1	+1	N/A	N/A	N/A	0
Lump sum payments	0	0	0		N/A	0
Deaths						
With death benefit	0	0	0	0	0	0
Without death benefit	0	0	0	0	0	0
Transfers	0	0	0	N/A	N/A	0
Rehires	0	0	0	N/A	N/A	0
New beneficiaries	N/A	N/A	N/A	N/A	0	0
New entrants	+20	N/A	+1	N/A	N/A	+21
Total members July 1, 2019	46	3	1	7	49*	106

** Includes 1 alternate payee receiving benefits*

Member Counts by Status



Member Data					
	Active	**Terminated vested**	**Due refund of contributions**	**Employees in DROP**	**Members in pay status**
Average age					
July 1, 2017	45.6	40.8	0.0	56.0	67.6
July 1, 2019	42.2	44.2	26.0	58.0	69.3
Average service					
July 1, 2017	15.5	N/A	N/A	N/A	N/A
July 1, 2019	11.2	N/A	N/A	N/A	N/A
Covered employee payroll					
July 1, 2017	$2,599,740	N/A	N/A	N/A	N/A
July 1, 2019	4,260,576	N/A	N/A	N/A	N/A
Total annual benefits					
July 1, 2017	N/A	$28,645	N/A	$429,453	$1,607,575
July 1, 2019	N/A	70,882	N/A	275,195	1,814,192

Active Member Count by Age and Years of Service

	Completed Years of Credited Service										
Attained age	**Under 1**	**1 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 29**	**30 to 34**	**35 to 39**	**40 and over**	**All years**
Under 25	2	2									4
25 to 29	1	2	2								5
30 to 34	1	2	2								5
35 to 39		1	1	2							4
40 to 44				3	3						6
45 to 49	1	1			3	2					7
50 to 54		1	1	2	2	6					12
55 to 59				2							2
60 to 64		1									1
65 to 69											
70 & over											
All ages	**5**	**10**	**6**	**9**	**8**	**8**					**46**

Description of Actuarial Methods

Asset Valuation Method

The Actuarial Value of assets used in the development of plan contributions phases in the recognition of differences between the actual return on Market Value and expected return on Market Value over a 5-year period at 20% per year. The Actuarial Value is adjusted, if necessary, to be within the range of 80% and 120% of the Market Value of assets.

Actuarial Cost Method

Changes in Actuarial Cost Method: None.

Description of Current Actuarial Cost Method: Entry Age Normal (level percentage of salary)

Normal Cost: Under this method, the total normal cost is the sum of amounts necessary to fund each active member's normal retirement benefit if paid annually from entry age to assumed retirement age. Entry age is the age at which the employee would have been first eligible for the plan, if it had always been in effect. The normal cost for each participant is expected to remain a level percentage of the employee's salary. The normal cost for the plan is the difference between the total normal cost for the year and the anticipated member contributions for that year.

Past Service Liability: The present value of future benefits that relates to service before the valuation date is the total past service liability. The unfunded past service liability is the difference between the total past service liability and any assets (including accumulated member contributions). This amount is amortized over 20 years on a closed basis from 2017.

Experience Gains and Losses: All experience gains and losses (the financial effect of the difference between the actual experience during the prior period and the result expected by the actuarial assumptions for that prior period) appear directly in the past service liability and are amortized at the same rate the plan is amortizing the remaining unfunded past service liability.

Description of Actuarial Assumptions

Changes in Actuarial Assumptions

The valuation reflects changes in the actuarial assumptions listed below. (The assumptions used before and after these changes are more fully described in the next section.)

- Mortality

The assumptions indicated were changed to represent the Enrolled Actuary's current best estimate of anticipated experience of the plan.

Investment rate of return (net of investment-related and administrative expenses)

6.50%.

Salary increases (including inflation)

Current: According to the following service-based schedule:

Service	Rate of Increase
0	8.5%
1	7.5%
2	6.5%
3	5.5%
4	4.5%
5	3.5%
6-14	3.0%
15	2.5%

The plan does not have statistically credible data on which to form this assumption. The assumption is based on input from the plan sponsor regarding future expectations and the comparable assumption used in the July 1, 2015 CT MERS Actuarial Valuation.

Inflation

2.5%.

This assumption is based on long term historical inflation numbers. While near term averages have been lower, we do not believe this trend will continue indefinitely and expect that there will be a reversion to the long-term average.

Mortality

Current: RP-2014 Adjusted to 2006 Blue Collar Mortality Table projected to the valuation date with Scale MP-2019.

Prior: RP-2014 Adjusted to 2006 Blue Collar Mortality Table projected to the valuation date with Scale MP-2017.

Mortality Improvement

Current: Projected to date of decrement using Scale MP-2019 (generational).

Prior: Projected to date of decrement using Scale MP-2017 (generational mortality).

We have selected this mortality assumption because it is based on a recently published retirement mortality study released by the Society of Actuaries. The mortality improvement assumption was updated to reflect the most recent annual update published by the Society of Actuaries.

Retirement age

Service	Rate of Retirement
25	25%
26-28	30%
29	40%
30	60%
31-39	50%
40	100%

Pre-Retirement Spouse Benefit and Disability Benefits

Costed explicitly.

Termination prior to retirement

Annual rates of withdrawal per table below (shown at sample ages) interpolated.

Age	Rate of withdrawal
20	7.00%
30	5.00%
40	2.00%
50	0.00%

Service-connected disability

Annual rates of disability per table below (shown at sample ages) interpolated.

Age	Rate of disability
20	.11%
30	.15%
40	.32%
50	1.11%
60	6.88%

The plan does not have statistically credible data on which to form the termination, and disability assumptions. These assumptions are based on input from the plan sponsor regarding future expectations and the comparable assumptions used in the July 1, 2015 CT MERS Actuarial Valuation.

Expenses

None. Expenses are assumed to be paid directly by the Town.

Post-Retirement Death Benefit

Costed explicitly.

Benefits Attributed to Longevity Pay

Costed explicitly.

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. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Plan identification

Single-employer pension plan.

Eligibility

Immediately upon commencement of payment of employee contributions.

Effective May 24, 2019, the Police officers hired after August 10, 2011 transferred back into the DB plan from the DC plan.

Salary

Base salary plus longevity plus station overtime earned by a participant from the Town for a particular year.

Final Average Salary

The average of the three highest fiscal years of salary.

Normal Retirement Age

25 years as a member of the Police Department and contributing to the fund. Maximum retirement age is 65.

For the Police officers transferred from the DC Plan: earlier of (a) 25 years of service, or (b) Age 55 with 10 years of service.

Notwithstanding the above, for Police officers hired after July 1, 2005 and who make a one-time irrevocable election pursuant to Section 22 of the Fund: alternative Normal Retirement Age of Age 55 with 10 years.

Credited Service

Period of time served as a member of the Police Department and contributing to the fund.

For the Police officers transferred from the DC Plan: past service credit granted back to officer's date of hire.

Normal Retirement Benefit

2.5% of Final Average Salary times years of credited service to a maximum of 25 years, plus 2.5% times basic salary for each year of service beyond 25, maximum benefit 70% of basic salary at time of retirement. Maximum will be exceeded for service under age 55. Minimum annual benefit is $2,000.

For the Police officers transferred from the DC Plan: 2.0% x 3-Year Average Annual Earnings (AAE) multiplied by years of service; maximum benefit 70% AAE, minimum benefit $2,000 per year.

For the Police officers hired after July 1, 2005 and who make a one-time irrevocable election pursuant to Section 22 of the Fund: 2.0% x 3-Year Average Annual Earnings (AAE) multiplied by years of service; maximum benefit 70% AAE, minimum benefit $2,000 per year.

Early Retirement

Participant, or a participant's spouse upon the participant's death may elect early retirement. The participant must have attained age 50 and have at least 20 years of service. The benefit percent per year shall be reduced as follows:

Years of Service	% Per Year
25	2.50%
24	2.35%
23	2.20%
22	2.05%
21	1.90%
20	1.75%

Disability Retirement

During regular performance of duty and certified as disabled: Immediate annual pension of final average salary at time of disability times the greater of (a) 50% or (b) 2.50% multiplied by completed year of service as of the date of disability.

For the Police officers transferred from the DC Plan: Greater of (a) 40% AAE, or (b) 2.0% AAE multiplied by Years of Service.

For the Police officers hired after July 1, 2005 and who make a one-time irrevocable election pursuant to Section 22 of the Fund: Greater of (1) 40% AAE, or (b) 2.0% AAE multiplied by Years of Service.

Vesting

No vesting in employer contributions prior to 5 years' credited service; 100% after 5 years.

Employee Contributions

8.5% of salary.

Death Benefits

Surviving spouse of an active participant qualified to receive retirement benefits, shall, at the time of the participant's death receive, until death or remarriage, a pension equal to one-half of the pension for which the participant had qualified. If the participant is retired at time of death, the surviving spouse will receive one-half of the pension being paid to the participant. If not qualified to receive retirement benefits and death occurs while in active performance of duties, the greater of 50% of monthly salary, or accrued benefit. For officers hired after July 1, 1991, this death benefit is reduced by 10%.

Purchase of Military Service Credit

An active Participant may purchase service credit not to exceed 3 years, for a period of active duty military service in the armed forces of the United States (excluding reserve duty), provided that the Participant is not able to receive a retirement benefit for such service under any other retirement plan.

DROP Plan

Active members can elect a DROP (deferred retirement option plan) once they are eligible for retirement. The DROP period can be up to five years. During the DROP period, the participant remains in full time service with some limited benefits. No participant shall accrue additional pension benefits after the effective date of the DROP. Upon completion of the DROP period, the participant receives a lump sum payment equal to the retirement benefits during the DROP period.