



TOWN OF BRANFORD VOLUNTEER FIRE DEPARTMENT PENSION PLAN

ACTUARIAL VALUATION REPORT

JANUARY 1, 2019





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## Executive Summary

	January 1, 2019	January 1, 2017
<b>Number of members</b>		
Active employees	221	208
Terminated vested members	0	0
Retired, disabled and beneficiaries	17	18
Total	238	226
<b>Covered employee payroll</b>	N/A	N/A
<b>Average plan salary</b>	N/A	N/A
<b>Actuarial present value of future benefits</b>	1,657,830	1,461,858
<b>Actuarial accrued liability</b>	1,420,301	1,256,486
<b>Plan assets</b>		
Market value of assets	1,020,584	911,748
Actuarial value of assets	1,129,186	954,218
<b>Unfunded accrued liability</b>	291,115	302,268
<b>Funded ratio</b>	79.5%	75.9%
<b>Actuarially determined employer contribution (ADEC)</b>		
Fiscal year ending	2021	2019
ADEC	65,330	59,050
Fiscal year ending	2022	2020
ADEC	65,970	59,640



## 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,

$$\text{Ultimate cost} = \text{Benefits Paid} + \text{Expenses Incurred} - \text{Investment Return} - \text{Employee Contributions}$$

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 January 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

The actuarial assumptions listed below have been changed for this valuation. The impact of these changes was to increase the unfunded actuarial liability by about 4.9% and to increase the Fiscal Year 2021 ADEC by approximately \$11,400.

- Investment Rate of Return
- Mortality
- Inflation

Please see the Actuarial Assumptions and Methods section for a complete description of the changes.

### Cash Contribution for Fiscal Years Ending 2021 and 2022

The Town cost is:	2021 Fiscal Year	2022 Fiscal Year
	\$65,330	\$65,970

### Liability Experience During Period Under Review

The plan experienced a net actuarial gain on liabilities of \$28,662 since the prior valuation. This gain was largely driven by the combined effect of retiree mortality and lower than expected accruals by active members.



**Asset Experience During Period Under Review**

	2017 Plan Year	2018 Plan Year
Market Value Basis	9.7%	-6.4%
Actuarial Value Basis	5.6%	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 over 5 years, thereby smoothing out fluctuations that are inherent in the Market Value.

**Assessment and Measurement of Risks**

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**

	January 1, 2019	January 1, 2017
Actuarial accrued liability for members currently in pay status as a percentage of the total actuarial accrued liability	23.4%	27.1%

- 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.

	January 1, 2019
Duration of benefit payments using an investment rate of return of 6.50%	19.8 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.



## Risks to Assess

### Overriding Minimum Contribution

	Fiscal Year Ending 2021
Actuarially determined employer contribution (ADEC)	65,330
Overriding minimum contribution (OMC)	<u>41,811</u>
Surplus (deficit) - ADEC vs. OMC	23,519

- 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) improving the plan's funded ratio in the near-term.

### 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)	1,420	1,420

- 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 10 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 10 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)	6,150	6,170

- 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 10 years.



## Historical Results

<b>Valuation Year Beginning</b>	<b>Investment Return Assumption</b>	<b>Annual Effective Rate of Return on Market Value of Assets</b>	<b>Market Value of Assets as a % of Actuarial Accrued Liability</b>	<b>Benefit Payments as a % of Market Value of Assets</b>
2019	6.50%	N/A	71.9%	N/A
2018	N/A	-6.4%	N/A	4.2%
2017	6.75%	9.7%	72.6%	4.7%
2016	N/A	6.8%	N/A	7.9%
2015	7.00%	-4.1%	47.7%	7.9%



## Certification

This report presents the results of the January 1, 2019 Actuarial Valuation for Town of Branford Volunteer Fire Department Pension Plan (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

November 26, 2019



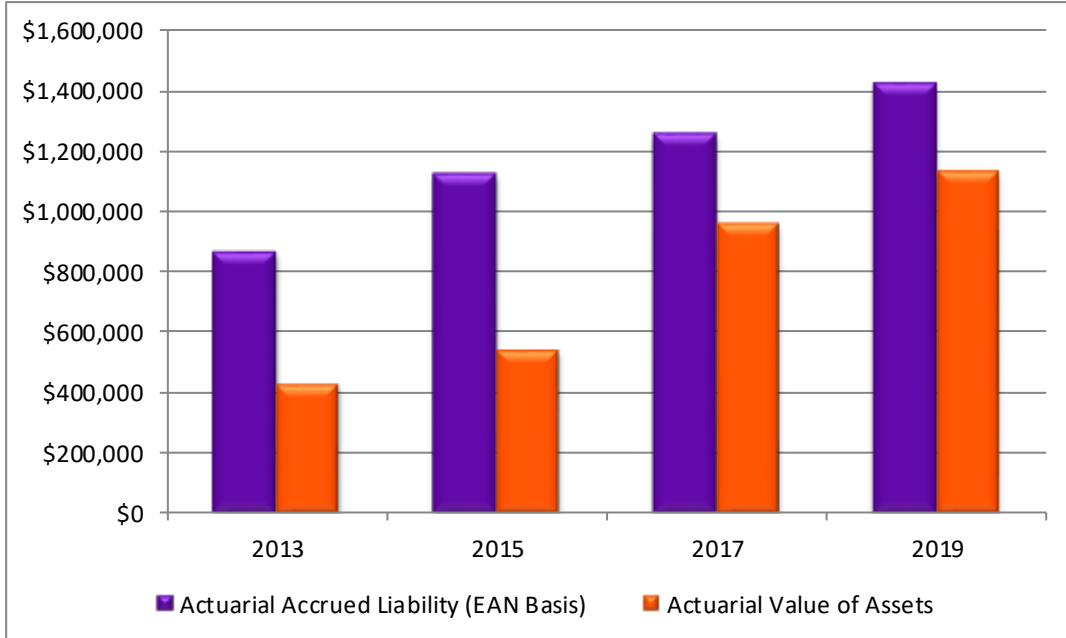


## Development of Unfunded Accrued Liability and Funded Ratio

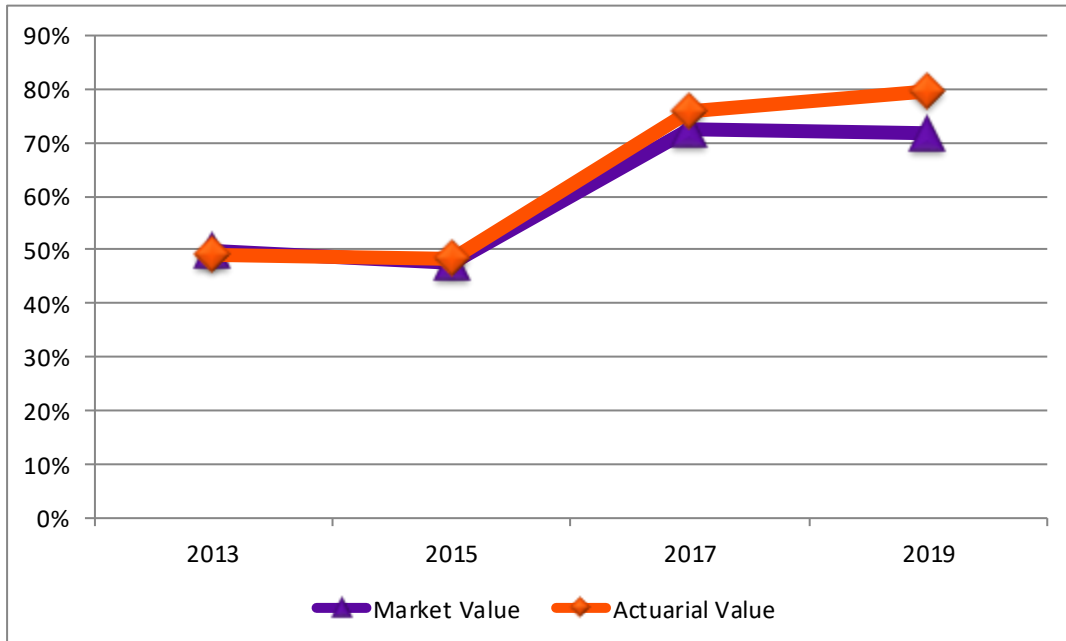
	January 1, 2019	January 1, 2017
Actuarial accrued liability for inactive members		
Retired, disabled and beneficiaries	\$332,698	\$340,672
Terminated vested members	0	0
Total	332,698	340,672
Actuarial accrued liability for active employees	1,087,603	915,814
Total actuarial accrued liability	1,420,301	1,256,486
Actuarial value of assets	1,129,186	954,218
Unfunded accrued liability	291,115	302,268
Funded ratio	79.5%	75.9%



### Actuarial Accrued Liability vs. Actuarial Value of Assets



### Funded Ratio



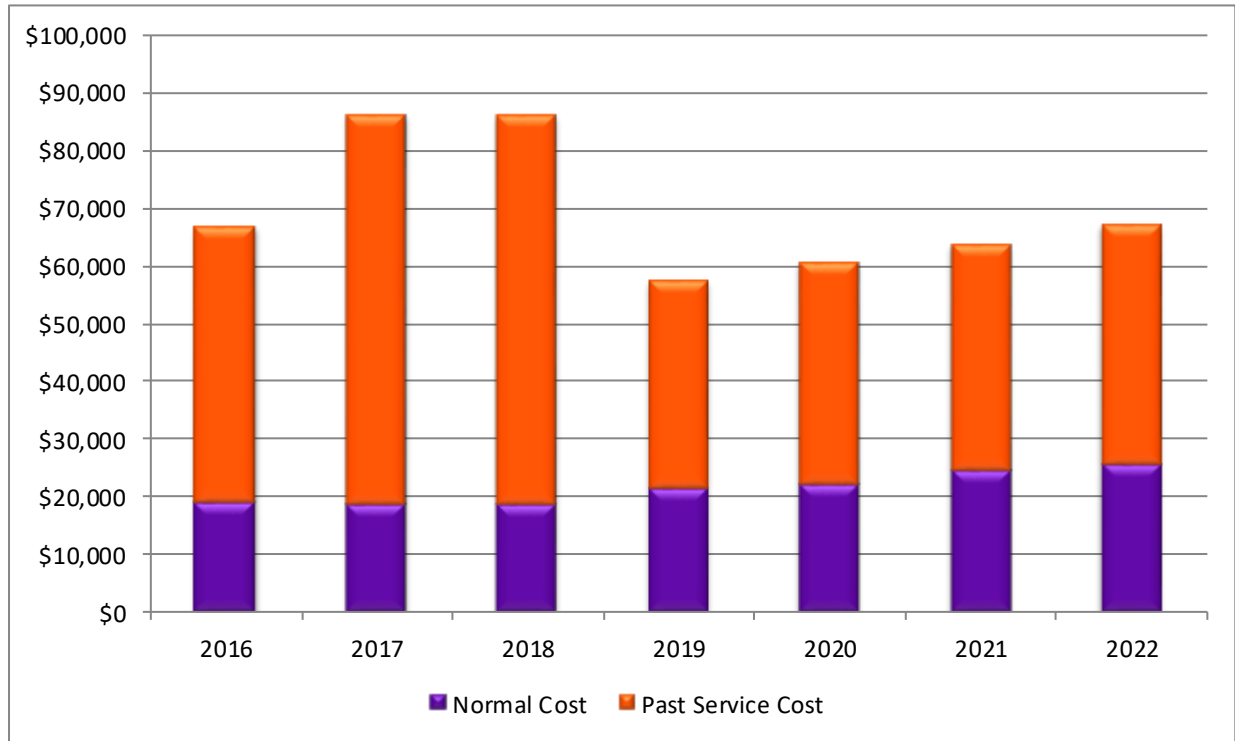


## Determination of Normal Cost and Actuarially Determined Employer Contribution

	January 1, 2019	January 1, 2017
Gross normal cost	\$23,152	\$19,977
Town's normal cost	23,152	19,977
Amortization of unfunded accrued liability	<u>38,024</u>	<u>35,176</u>
Contribution before adjustment as of the valuation date	61,176	55,153
Contribution rounded to nearest \$10	61,180	55,150
Fiscal year ending	2021	2019
Adjustment for interest and inflation	4,150	3,900
Actuarially determined employer contribution	65,330	59,050
Fiscal year ending	2022	2020
Adjustment for interest and inflation	640	590
Actuarially determined employer contribution	65,970	59,640



### 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	
<b>Expected unfunded accrued liability January 1, 2019</b>	
Expected unfunded accrued liability January 1, 2018	
Unfunded accrued liability January 1, 2017	\$302,268
Gross normal cost January 1, 2017	19,977
Town and employee contributions for 2017	(87,000)
Interest at 6.75% to January 1, 2018	19,016
Expected unfunded accrued liability January 1, 2018	254,261
Expected unfunded accrued liability January 1, 2019	
Expected unfunded accrued liability January 1, 2018	254,261
Expected gross normal cost January 1, 2018	20,526
Town and employee contributions for 2018	(87,000)
Interest at 6.75% to January 1, 2019	15,941
Expected unfunded accrued liability January 1, 2019	203,728
<b>Actuarial (gain) / loss January 1, 2019</b>	<b>21,543</b>
<b>Actual unfunded accrued liability January 1, 2019, prior to plan provision, assumption and method changes</b>	<b>225,271</b>
<b>Sources of (gain) / loss</b>	
Assets	50,205
Liabilities	(28,662)
Total (gain) / loss	21,543
<b>Assumption and method changes since prior valuation</b>	<b>65,844</b>
<b>Actual unfunded accrued liability January 1, 2019, after plan provision, assumption and method changes</b>	<b>291,115</b>



## Development of Asset Values

Summary of Fund Activity		
	Market Value	Actuarial Value
<b>1. Beginning value of assets January 1, 2018</b>		
Trust assets	\$1,045,933	\$1,052,836
<b>2. Contributions</b>		
Town contributions during year	87,000	87,000
Employee contributions during year	0	0
Total for plan year	87,000	87,000
<b>3. Disbursements</b>		
Benefit payments during year	43,904	43,904
Administrative expenses during year	0	0
Total for plan year	43,904	43,904
<b>4. Net investment return</b>		
Interest and dividends	30,467	N/A
Realized and unrealized gain / (loss)	(94,433)	N/A
Expected return	N/A	71,619
Recognized gain / (loss)	N/A	(38,365)
Required adjustment due to corridor	N/A	0
Reversal of prior year required adjustment	N/A	0
Investment-related expenses	(4,479)	N/A
Total for plan year	(68,445)	33,254
<b>5. Ending value of assets January 1, 2019</b>		
Trust assets: (1) + (2) - (3) + (4)	1,020,584	1,129,186
<b>6. Approximate rate of return</b>	-6.4%	3.1%



**Relationship of Actuarial Value to Market Value**

1. Market value 1/1/2019	\$1,020,584
2. Gain / (loss) not recognized in actuarial value 1/1/2019	<u>(108,602)</u>
3. Preliminary actuarial value 1/1/2019: (1) - (2)	1,129,186
4. Preliminary actuarial value as a percentage of market value: (3) ÷ (1)	110.6%
5. Gain / (loss) recognized for corridor minimum / maximum	N/A
6. Actuarial value 1/1/2019 after corridor minimum / maximum: (3) + (5)	1,129,186
7. Actuarial value as a percentage of market value: (6) ÷ (1)	110.6%

**Development of Market Value Gain / Loss for 2018 Plan Year**

1. Market value 1/1/2018	\$1,045,933
2. Town contributions	87,000
3. Employee contributions	0
4. Benefit payments	43,904
5. Administrative expenses	0
6. Expected return at 6.75%	<u>71,619</u>
7. Expected value 1/1/2019: (1) + (2) + (3) - (4) - (5) + (6)	1,160,648
8. Market value 1/1/2019	<u>1,020,584</u>
9. Market value gain / (loss) for 2018 plan year: (8) - (7)	(140,064)

**Recognition of Gain / Loss in Actuarial Value**

Year	(a) Gain / (loss)	(b) Total recognized as of 1/1/2018	(c) Recognized in current year: 20% of (a)	(d) Total recognized as of 1/1/2019: (b) + (c)	(e) Not recognized as of 1/1/2019: (a) - (d)
2014	(\$16,473)	(\$13,180)	(\$3,293)	(\$16,473)	\$0
2015	(60,774)	(36,465)	(12,155)	(48,620)	(12,154)
2016	(1,581)	(632)	(316)	(948)	(633)
2017	27,060	5,412	5,412	10,824	16,236
2018	(140,064)	0	<u>(28,013)</u>	(28,013)	<u>(112,051)</u>
Total			(38,365)		(108,602)



<b>Summary of Fund Activity</b>		
	<b>Market Value</b>	<b>Actuarial Value</b>
<b>1. Beginning value of assets January 1, 2017</b>		
Trust assets	\$911,748	\$954,218
<b>2. Contributions</b>		
Town contributions during year	87,000	87,000
Employee contributions during year	0	0
Total for plan year	87,000	87,000
<b>3. Disbursements</b>		
Benefit payments during year	42,592	42,592
Administrative expenses during year	0	0
Total for plan year	42,592	42,592
<b>4. Net investment return</b>		
Interest and dividends	26,280	N/A
Realized and unrealized gain / (loss)	67,649	N/A
Expected return	N/A	62,717
Recognized gain / (loss)	N/A	(8,507)
Required adjustment due to corridor	N/A	0
Reversal of prior year required adjustment	N/A	0
Investment-related expenses	(4,152)	N/A
Total for plan year	89,777	54,210
<b>5. Ending value of assets January 1, 2018</b>		
Trust assets: (1) + (2) - (3) + (4)	1,045,933	1,052,836
<b>6. Approximate rate of return</b>	9.7%	5.6%





**Relationship of Actuarial Value to Market Value**

1. Market value 1/1/2018	\$1,045,933
2. Gain / (loss) not recognized in actuarial value 1/1/2018	(6,903)
3. Preliminary actuarial value 1/1/2018: (1) - (2)	1,052,836
4. Preliminary actuarial value as a percentage of market value: (3) ÷ (1)	100.7%
5. Gain / (loss) recognized for corridor minimum / maximum	N/A
6. Actuarial value 1/1/2018 after corridor minimum / maximum: (3) + (5)	1,052,836
7. Actuarial value as a percentage of market value: (6) ÷ (1)	100.7%

**Development of Market Value Gain / Loss for 2017 Plan Year**

1. Market value 1/1/2017	\$911,748
2. Town contributions	87,000
3. Employee contributions	0
4. Benefit payments	42,592
5. Administrative expenses	0
6. Expected return at 6.75%	62,717
7. Expected value 1/1/2018: (1) + (2) + (3) - (4) - (5) + (6)	1,018,873
8. Market value 1/1/2018	1,045,933
9. Market value gain / (loss) for 2017 plan year: (8) - (7)	27,060

**Recognition of Gain / Loss in Actuarial Value**

Year	(a) Gain / (loss)	(b) Total recognized as of 1/1/2017	(c) Recognized in current year: 20% of (a)	(d) Total recognized as of 1/1/2018: (b) + (c)	(e) Not recognized as of 1/1/2018: (a) - (d)
2013	\$9,235	\$7,388	\$1,847	\$9,235	\$0
2014	(16,473)	(9,885)	(3,295)	(13,180)	(3,293)
2015	(60,774)	(24,310)	(12,155)	(36,465)	(24,309)
2016	(1,581)	(316)	(316)	(632)	(949)
2017	27,060	0	5,412	5,412	21,648
<b>Total</b>			(8,507)		(6,903)

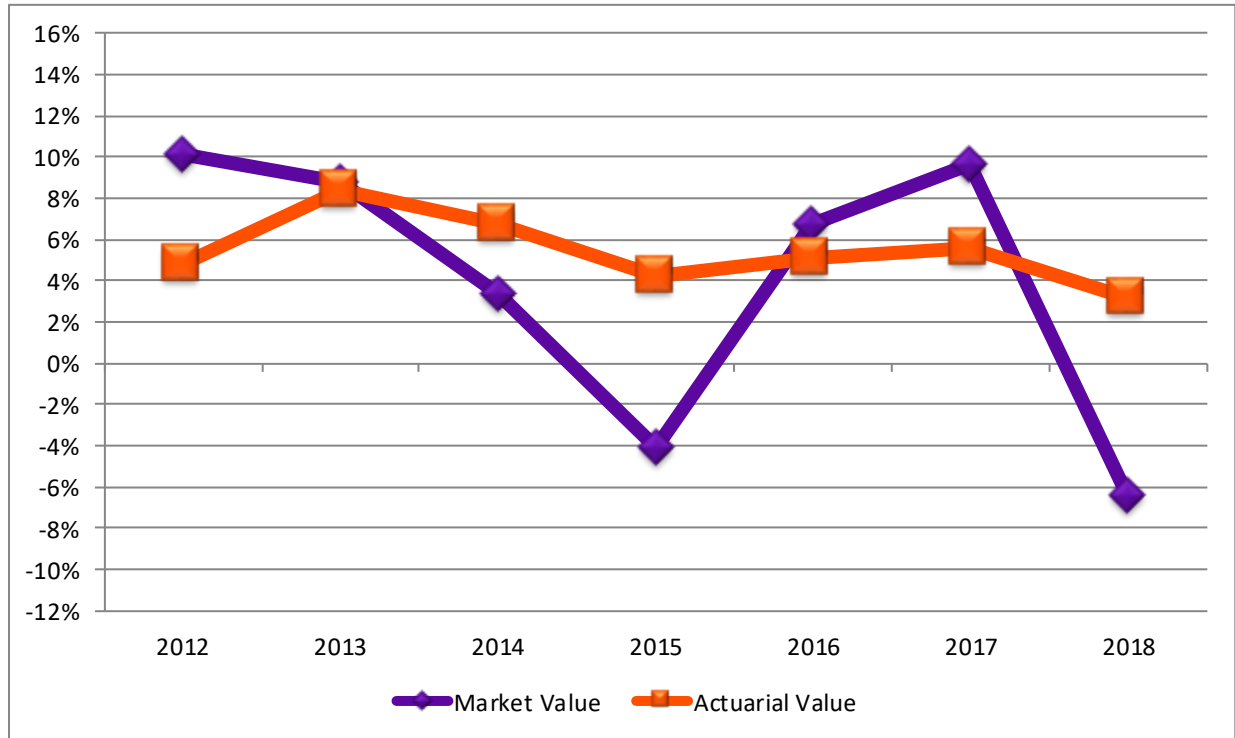


<b>Rate of Return on Market Value of Assets</b>				
<b>Period Ending December 31</b>	<b>Average Annual Effective Rate of Return</b>			
	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
2009	15.1%	1.1%	3.6%	0.4%
2010	11.8%	2.6%	5.1%	2.6%
2011	1.1%	9.2%	3.2%	3.3%
2012	10.1%	7.6%	3.8%	5.5%
2013	8.8%	6.6%	9.3%	5.6%
2014	3.4%	7.4%	6.9%	5.3%
2015	-4.1%	2.5%	3.7%	4.4%
2016	6.8%	1.9%	4.8%	4.0%
2017	9.7%	3.9%	4.8%	4.3%
2018	-6.4%	3.1%	1.7%	5.4%

<b>Rate of Return on Actuarial Value of Assets</b>				
<b>Period Ending December 31</b>	<b>Average Annual Effective Rate of Return</b>			
	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
2009	3.6%	4.2%	3.7%	1.3%
2010	5.3%	3.6%	4.4%	1.6%
2011	4.1%	4.3%	4.4%	2.3%
2012	4.9%	4.7%	3.9%	3.9%
2013	8.4%	5.8%	5.2%	3.9%
2014	6.7%	6.7%	5.9%	4.8%
2015	4.2%	6.4%	5.6%	5.0%
2016	5.1%	5.3%	5.9%	5.1%
2017	5.6%	5.0%	6.0%	5.0%
2018	3.1%	4.6%	4.9%	5.1%



### Actual Rate of Return on Assets





## Target Allocation and Expected Rate of Return January 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			2.60%
Long-Term Expected Nominal Return			6.34%

*\*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 January 1, 2019
2019 base	January 1, 2019	38,024	10	291,115



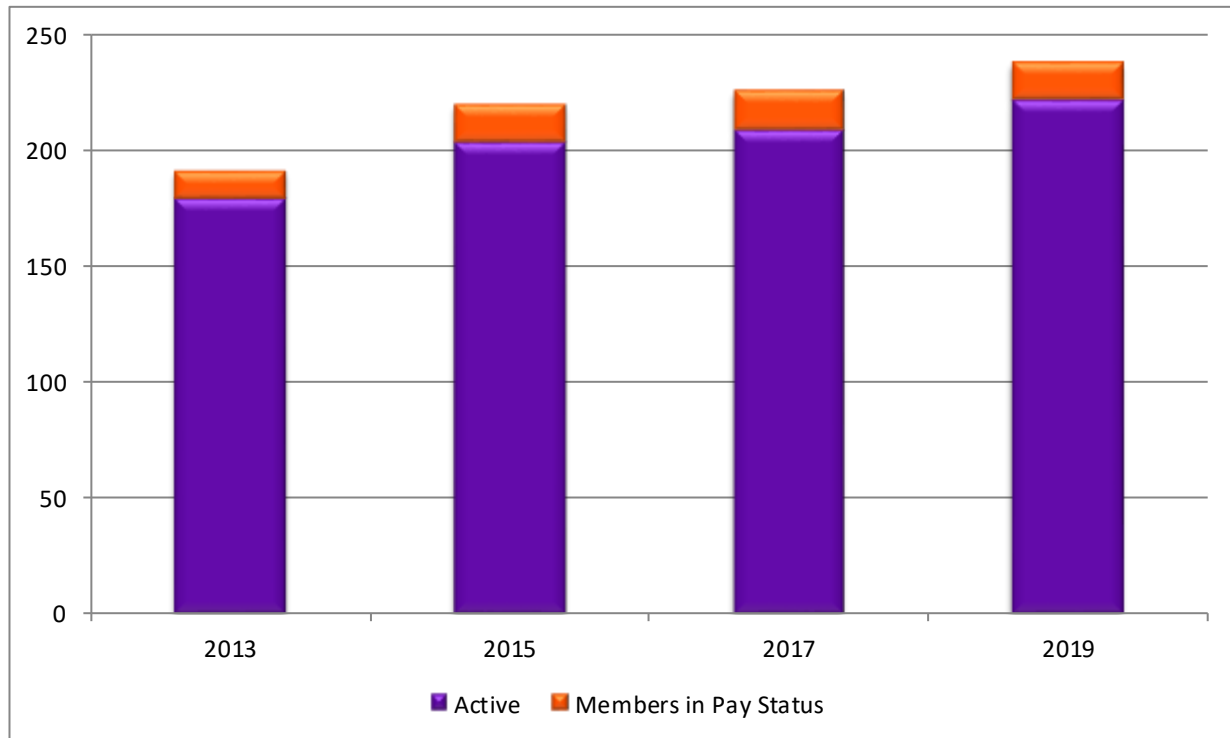
## Member Data

The data reported by the Plan Sponsor for this valuation includes 221 active employees who met the Plan's minimum age and service requirements as of January 1, 2019.

Member Data				
	Active	Terminated vested	Members in pay status	Total
<b>Total members January 1, 2017</b>	208	0	18	226
Adjustments	0	0	0	0
Retirements	-2	0	+2	0
Disabilities	0	N/A	0	0
Terminations				
Vested	0	0	N/A	0
Non-vested	0	0	N/A	0
Deaths				
With death benefit	0	0	0	0
Without death benefit	0	0	-3	-3
Transfers	0	0	N/A	0
Rehires	0	0	N/A	0
New beneficiaries	N/A	N/A	0	0
New entrants	+15	N/A	N/A	+15
<b>Total members January 1, 2019</b>	221	0	17	238



### Member Counts by Status





<b>Member Data</b>			
	<b>Active</b>	<b>Terminated vested</b>	<b>Members in pay status</b>
<b>Average age</b>			
January 1, 2017	41.2	N/A	75.0
January 1, 2019	42.4	N/A	74.2
<b>Average service</b>			
January 1, 2017	17.2	N/A	N/A
January 1, 2019	17.9	N/A	N/A
<b>Total annual benefits</b>			
January 1, 2017	N/A	N/A	\$43,132
January 1, 2019	N/A	N/A	40,260





### Active Member Count by Age and Years of Service

Attained age	Completed Years of Credited Service										
	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		21	1								22
25 to 29		20	4	1							25
30 to 34		20	8	2							30
35 to 39		16	5	5	2						28
40 to 44		15	4	5	1	1					26
45 to 49		7	9	4			1				21
50 to 54		9	9	2	1	2	1				24
55 to 59		5	8	5	2	2					22
60 to 64		1	3	6	2	1		1			14
65 to 69		2									2
70 & over		1	5	1							7
<b>All ages</b>		<b>117</b>	<b>56</b>	<b>31</b>	<b>8</b>	<b>6</b>	<b>2</b>	<b>1</b>			<b>221</b>



## 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 10 years on a closed basis from January 1, 2019. Future changes in the unfunded accrued liability will be amortized separately, assuming a new 10-year amortization each valuation.

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.)

- Investment rate of return
- Mortality
- Inflation

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%. (Prior: 6.75%)

The assumption was changed to better reflect anticipated experience.

#### **Inflation**

2.60%. (Prior: 2.75%)

This assumption is consistent with the Social Security Administration's current best estimate of the ultimate long-term (75-year horizon) annual percentage increase in CPI, as published in the 2019 OASDI Trustees Report.

The assumption was changed to better reflect expected experience.

#### **Mortality**

Pub-2010 (B) Public Retirement Plans Headcount Weighted Mortality Tables for Safety employees, for non-annuitants and annuitants, projected to the valuation date with Scale MP-2018.

Prior: RPH-2014 Mortality Table adjusted to 2006 total dataset, headcount-weighted, projected to the measurement date with Scale MP-2017.

#### **Mortality Improvement**

Projected to date of decrement using Scale MP-2018 (generational).

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

We have selected this mortality assumption because it is based on the latest published public sector pension mortality study released by the Society of Actuaries appropriate for this plan. The headcount-weighted table was used since benefits are not based on pay.

The mortality assumption was updated to better reflect actual experience.



### Retirement age

Age	Rate
65	50%
66	25%
67	25%
68	25%
69	25%
70	100%

### Termination prior to retirement

Sample termination rates are as follows:

Table T-3

Age	Rate
20	6.6%
25	5.3%
30	4.8%
35	4.5%
40	3.8%
45	3.2%
50	1.5%

### Disability

None.

The actuarial assumptions in regards to rates of decrement shown above are based on standard tables modified for certain plan features such as eligibility for full and early retirement where applicable and input from the plan sponsor.

### Administrative expenses

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

### Pre-Retirement Spouse Benefit, Disability Benefits and Termination Benefits

Costed explicitly.

### Accrual of Service

35% of Active Employees will qualify for service credit each year.

The assumption changes increased liabilities by about 4.9%.



## 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

### Effective Date

Original: January 1, 1991.

Last Amendment: February 20, 2002.

### Service

All years of service with the Fire Department from date of membership to early retirement, termination of employment, or Retirement Date.

### Credited Service

No credit prior to January 1, 1991, except active Firefighters with at least 10 years of firefighting service will receive credit for 5 years of service. Maximum years of credited service equals 30.

Based on requirements for credit established by the Committee:

#### 1991 and 1992

40% of calls of member's company

24 drills (company or town)

or

52 calls (Fire or EMS)

24 drills

#### 1993 and after

Minimum of 100 points

Min. 36 fire or EMS calls                      1 point each =                      36

Min. 8 town drills\*                              4 points each =                      32

Min. 16 company drills                      2 points each =                      32

100 points

Sanctioned parade may be substituted for a fire call.

\*Town drill may be substituted for a company drill when the minimum is reached (at 2 points per drill). A minimum of 12 will be held. A (sanctioned) parade may be substituted for a fire call. Drills must be approved by Training Division.

### Normal Form of Annuity

Life Annuity.

### Normal Retirement Date

The first day of the month coinciding with or next following the Participant's 65th birthday and the completion of five years of Credited Service after January 1, 1991.



### **Pension Benefits**

Eligibility for Plan Participation: Meet the requirements for an Active Firefighter.

Normal Retirement Benefit Formula: \$15.00 a month for each year of Credited Service, up to a maximum of twenty years, plus \$5.00 a month for each year in excess of 20, maximum \$350 per month.

### **Early Retirement**

Eligibility: None.

### **Postponed Retirement**

Benefit based on Credited Service at actual retirement.

### **Disability**

Eligibility: After 15 years of Credited Service and become totally and permanently disabled as a result of injuries incurred in the line of duty.

Benefit: \$250 per month commencing on the Participant's Normal Retirement Date.

### **Pre-Retirement Spouse Benefit**

Eligibility: After 20 years of Credited Service and any death.

Benefit: 50% of pension benefit at death. Benefit commences on the first day of January following the date of Participant's death.

### **Vesting**

Eligibility: Ten years of Credited Service (at least five years after January 1, 1991) or 100% at Normal Retirement Date, with five years of Credited Service, earned on and after January 1, 1991.

Benefit Formula: Benefit accrued to date of termination.