TOWN OF BRANFORD VOLUNTEER FIRE DEPARTMENT PENSION PLAN

TOWN OF BRANFORD

VALUATION REPORT

JANUARY 1, 2015

hooker & holcombe

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Executive Summary

Executive Summary		
	January 1, 2015	**January 1, 2013**
Status		
Active Employees	203	179
Retired Pensioners	17	12
Terminated Vested Employees	0	0
Total	220	191
Actuarial present value of future benefits	1,318,099	1,119,112
Actuarial accrued liability	1,120,645	865,542
Asset value		
Market	534,163	432,245
Actuarial	540,595	424,557
Normal cost	18,559	18,918
Unfunded accrued liability	580,050	440,985
Contributions as of end of plan year		
Recommended Contribution	86,184	66,924
Cost per active employee as of the end of plan year	425	374

I. Introduction

Purposes of the Valuation

The purpose of the valuation is to determine the funded status of the plan as well as the recommended cash contribution for the plan year. The information found in *II. Results of the Valuation B and C* of the report have been developed for this purpose.

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,

Town's Ultimate cost = Benefits Paid + Expenses Incurred – Investment Return

Experience During Period Under Review

This report shows an Unfunded Accrued Liability of $580,050. This represents an increase of approximately $139,000 compared to the prior valuation. The plan experienced a liability loss during the last 2 years of about $5,000 (before the actuarial assumptions change).

Changes Since the Last Valuation

The actuarial assumptions listed below have been changed in this year's valuation. See the Actuarial Methods and Assumptions Section IV for a complete description of the changes.

- Actuarial Cost Method
- Mortality
- Turnover
- Disability

Certification

This report presents the results of the January 1, 2015 Actuarial Valuation for the 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 Contribution (ADC) for the fiscal year ending June 30, 2016. This report is intended to satisfy the requirements of Connecticut General Statute 7-450a.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 Town, and on asset and contribution information provided by the Town. 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 such factors as: 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 am a member of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein.

Timothy A. Ryor, FSPA, FCA, MAAA,
Enrolled Actuary 14-05126

December 3, 2015

II. Results of the Valuation

A. Actuarial Balance Sheet

The essential elements of the actuarial valuation process are shown by the actuarial balance sheet. The description of the funding method in Section IV defines and explains the terms used in this actuarial balance sheet.

	January 1, 2015	January 1, 2013
Actuarial Liabilities		
Present Value of Future Benefits for:		
Active Employees	$ 996,694	$ 928,603
Retired Pensioners	321,405	190,509
Terminated Vested Employees	0	0
TOTAL	$1,318,099	$1,119,112
Source of Funds		
Plan Assets (Actuarial Value)	$ 540,595	$ 424,557
Unfunded Accrued Liability	580,050	440,985
Present Value of Future Funding Payments	197,454	253,570
TOTAL	$1,318,099	$1,119,112

II. Results of the Valuation
(continued)

B. Development of Unfunded Accrued Liability (Pension Benefit Obligation) and Funded Ratio

	January 1, 2015	January 1, 2013
Accrued Liability:		
Inactive Employees:		
Retired Pensioners	$321,405	$190,509
Terminated Vested Employees	0	0
	321,405	190,509
Active Employees:	799,240	675,033
Total Accrued Liability	1,120,645	865,542
Plan Assets (Actuarial Value)	540,595	424,557
Unfunded Accrued Liability	580,050	440,985
Funded Ratio (Plan Assets Divided by Total Accrued Liability)	48.2%	49.05%

II. Results of the Valuation (continued)

C. Annual Contribution

Based on the employee data and asset information furnished us, the actuarial methods and assumptions shown in Section IV and the plan provisions outlined in Section V, we have developed the Town's cost per active employee shown below:

	January 1, 2015	January 1, 2015	January 1, 2013
	Contribution (After Assumption Method Changes)	Contribution (Before Assumption Method Changes)	Contribution
Annual Contribution			
a) Town's Ongoing Annual Normal Cost	$18,559	$21,122	$18,918
b) Amortization of Unfunded Accrued Liability*	61,987	45,947	43,628
c) Interest for one year on (a) and (b)	5,638	4,695	4,378
d) Town's Annual Recommended Contribution: (a) + (b) + (c)	**86,184**	**71,764**	**66,924**
Actuarial Accrued Liability	1,120,645	970,548	865,542
Plan Assets (Actuarial Value)	540,595	540,595	424,557
Unfunded Accrued Liability	580,050	429,953	440,985
Investment Return	7.00%	7.00%	7.00%
Number of Active Employees	203	203	179
Cost per Active Employee	425	354	374

** Funding of Unfunded over 30 years from 1999.*

II. Results of the Valuation (continued)

D. Accounting Information

Development of Liabilities and Assets for Vested and Non-Vested Benefits

	January 1, 2015	January 1, 2013
Vested Liabilities		
Active Employees	$446,189	$462,433
Retired Pensioners	321,405	190,509
Terminated Vested Employees	0	0
Total	767,594	652,942
Non-Vested Liabilities		
Active Employees	353,051	212,600
Vested and Non-Vested Liabilities		
Grand Total	1,120,645	865,542
Plan Assets (Market Value)	534,163	432,245
Not yet Funded (Minimum of $0)	586,482	433,297

III. Supporting Exhibits

A. Membership Data

	January 1, 2015	January 1, 2013
Status		
Active Employees	203	179
Retired Pensioners	17	12
Terminated Vested Employees	0	0
Total	220	191
Average Ages for Active Employees		
Average Hiring Age	24.5	23.7
Average Attained Age	40.2	40.4
Benefits		
Total Annual Retirement Benefits	40,792	27,630
Average Annual Retirement Benefit	2,400	2,303
Total Annual Vested Benefit for Terminated Vested Employees	0	0
Average Annual Vested Benefit for Terminated Vested Employees	0	0

Age, Service, Salary Information for 2015

TOWN OF BRANFORD VOLUNTEER FIRE DEPARTMENT

	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**	
Attained Age	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.
Under 25			13	1	7	1															20	1
25 to 29			7	1	18	1	7	1													32	1
30 to 34			5	1	6	1	6	1	4	1											21	1
35 to 39			4	1	3	1	5	1	16	1	3	1									31	1
40 to 44			1	1	2	1	2	1	6	1	6	1	5	1							22	1
45 to 49					2	1	5	1	4	1	3	1	7	1	3	1					24	1
50 to 54			1	1	2	1	4	1	3	1	3	1	3	1	5	1	1	1			22	1
55 to 59							1	1	1	1	2	1	2	1	4	1	6	1	2	1	18	1
60 to 64							1	1	2	1							3	1			6	1
65 to 69											1	1	1	1	1	1			1	1	4	1
70 & over			1	1	1	1													1	1	3	1
All ages			32	1	41	1	31	1	36	1	18	1	18	1	13	1	10	1	4	1	203	1

III. Supporting Exhibits (continued)

B. Assets – Market Value

Summary of Fund Activity	Market Value 1/1/2014 – 12/31/2014	Market Value 1/1/2013 – 12/31/2013
1. Beginning Value		
a. Trust assets	$495,115	$432,245
b. Accrued contribution	0	0
c. Benefits payable	0	0
d. Administrative expenses payable	0	0
e. Net: (a) + (b) - (c) - (d)	495,115	432,245
2. Contributions		
a. Contributions during year		
(1) Employer	62,000	61,000
(2) Employee	0	0
b. Change in accrued contribution	0	0
c. Total for plan year	62,000	61,000
3. Disbursements		
a. Benefit payments during year	39,967	37,115
b. Administrative expenses during year	0	0
c. Change in benefits payable	0	0
d. Change in administrative expenses payable	0	0
e. Total for plan year	39,967	37,115
4. Net investment return		
a. Interest and dividends	12,013	13,095
b. Change in accrued income	0	0
c. Realized gain (loss)	280	18,759
d. Unrealized gain (loss)	6,598	8,429
e. Recognized capital appreciation	0	0
f. Investment-related expenses	(1,876)	(1,298)
g. Total	17,015	38,985
5. Ending value		
a. Trust assets: (1e) + (2a) - (3a) - (3b) + (4g)	534,163	495,115
b. Accrued contribution	0	0
c. Benefits payable	0	0
d. Administrative expenses payable	0	0
e. Net: (a) + (b) - (c) - (d)	534,163	495,115
6. Approximate rate of return:		
200 x (4g)/[(1e) + (5e) - (4g)]	3.36%	8.78%

Note: [(1.0336) x (1.0878)] = 1.1244; i.e., investment return is **12.44%** for the 2-year period.
[(1.0700) x (1.0700)] = 1.1449; i.e., assumed return is **14.49%** for the 2-year period.

III. Supporting Exhibits (continued)

The Actuarial Value of assets is used in the determination of plan contributions. It phases in recognition of investment gains and losses. A method of smoothing is used because the Market Value can swing widely from one year to the next, resulting in undesirable fluctuations in pension contributions. The smoothing is accomplished by recognizing investment gains and losses over a five-year period at 20% per year.

The Actuarial Value is constrained to be within 80% to 120% of Market Value.

C. Assets – Relationship of Actuarial Value to Market Value

Relationship of Actuarial Value to Market Value	
1. Market value 1/1/2015	$534,163
2. Gains (losses) not recognized in actuarial value 1/1/2015	(6,432)
3. Preliminary actuarial value 1/1/2015: (1)–(2)	540,595
4. Preliminary actuarial value as a percentage of market value: (3) ÷(1)	101.2%
5. Gains (losses) recognized for corridor min/max	0
6. Actuarial value 1/1/2015 after corridor min/max: (3)+(5)	540,595
7. Actuarial value as a percentage of market value: (6)÷(1)	101.2%

D. Recognition of Capital Appreciation in Actuarial Value

Recognition of Gains/(Losses) in Actuarial Value

	2010	2011	2012	2013	2014	Total
1. Asset gain (loss)	$ 13,630	$ (19,412)	$ 12,721	$ 9,235	$ (16,473)	$ (299)
2. Recognized as of 1/1/2014	10,904	(11,646)	5,088	1,847	0	6,193
3. Recognized in current year: 20% of (1)	2,726	(3,882)	2,544	1,847	(3,295)	(60)
4. Total recognized as of 1/1/2015: (2) + (3)	13,630	(15,528)	7,632	3,694	(3,295)	6,133
5. Gain (losses) not recognized in actuarial value 1/1/2015: (1) – (4)	0	(3,884)	5,089	5,541	(13,178)	(6,432)

E. Assets – Gain/(Loss)

Assets – Gain/(Loss)	
1. Market value as of 1/1/2014	$495,115
a. Contributions	62,000
b. Benefit Payments	(39,967)
c. Administrative Expenses	(1,876)
d. Expected Interest at 7.00%	35,364
2. Expected value as of 1/1/2015	550,636
3. Market value as of 1/1/2015	534,163
4. Asset gain/(loss): (3) – (2)	(16,473)

III. Supporting Exhibits (continued)

F. Assets – Actuarial Value

Summary of Fund Activity	Actuarial Value 1/1/2014 – 12/31/2014	Actuarial Value 1/1/2013 – 12/31/2013
1. Beginning Value		
a. Trust assets	$485,135	$424,557
b. Accrued contribution	0	0
c. Benefits payable	0	0
d. Administrative expenses payable	0	0
e. Net: (a) + (b) - (c) - (d)	485,135	424,557
2. Contributions		
a. Contributions during year		
(1) Employer	62,000	61,000
(2) Employee	0	0
b. Change in accrued contribution	0	0
c. Total for plan year	62,000	61,000
3. Disbursements		
a. Benefit payments during year	39,967	37,115
b. Administrative expenses during year	0	0
c. Change in benefits payable	0	0
d. Change in administrative expenses payable	0	0
e. Total for plan year	39,967	37,115
4. Net investment return		
a. Interest and dividends	12,013	13,095
b. Change in accrued income	0	0
c. Realized gain (loss)	N/A	N/A
d. Unrealized gain (loss)	N/A	N/A
e. Recognized capital appreciation	23,290	24,896
f. Investment-related expenses	(1,876)	(1,298)
g. Total	33,427	36,693
5. Ending value		
a. Trust assets: (1e) + (2a) - (3a) - (3b) + (4g)	540,595	485,135
b. Accrued contribution	0	0
c. Benefits payable	0	0
d. Administrative expenses payable	0	0
e. Net: (a) + (b) - (c) - (d)	540,595	485,135
6. Approximate rate of return: 200 x (4g)/[(1e) + (5e) - (4g)]	6.74%	8.41%

Note: [(1.0674) x (1.0841)] = 1.1572; i.e., investment return is **15.72%** for the 2-year period.
[(1.0700) x (1.0700)] = 1.1449; i.e., assumed return is **14.49%** for the 2-year period.

IV. Description of Actuarial Methods and Assumptions

Actuarial Methods

Actuarial Cost Method

The actuarial method is the Entry Age Actuarial Cost Method (level percentage of salary*).

Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation*. The normal cost accrual rate equals the present value of future benefits for the participant, determined as of the participant's entry age, divided by the present value of the compensation* expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.

The cost of amortizing the Unfunded Accrued liability constitutes the remaining portion of the Annual Funding Percentage for all benefits and is determined as follows:

1. An Accrued Liability for these benefits is developed for the active employee group by multiplying each active employee's annual cost (described in the above paragraph) by his credited service accrued to the current actuarial valuation date. This operation will produce an Accrued Liability for each active employee. These individual Accrued Liabilities are then added together to obtain a total Accrued Liability for the active employee group.
2. An Accrued Liability for these benefits is also developed for those members or their beneficiaries who are currently receiving benefit payments. This Accrued Liability is equal to the present value of these benefit payments currently being made to such members or their beneficiaries.
3. The sum of these Accrued Liabilities is reduced by the plan assets to develop the Unfunded Accrued Liability for these benefits.
4. The Unfunded Accrued Liability is to be amortized over 30 years from 1999.

Prior: The projected Unit Credit Actuarial Cost Method.

Asset Valuation Method

The Actuarial Value of assets used in the development of plan contribution phases in asset gains and losses. Asset gains and losses are recognized over a five-year period at 20% per year. The Actuarial Value is adjusted, if necessary, so that the Actuarial Value of assets remains within the range of 80% to 120% of the Market Value of assets. The initial Actuarial Value under this method at January 1, 2003 reflects the gains and losses had this method always been in effect since the plan effective date.

The asset gain or loss is determined by comparing the current year fair value of assets to the expected fair value of assets. The expected fair value of assets is determined by applying the prior year's expected return on assets to the prior year fair value of assets, plus contributions less distributions.

* *Per GASB 68 32b, entry age normal costs are projected to increase at the assumed long-term rate of inflation. Compensation for all active participants is assumed to be $1 increased at the assumed inflation rate.*

Actuarial Assumptions

The actuarial assumptions used in the determination of costs and liabilities are as follows:

Interest

7.00% per year, net of investment expenses.

Mortality

RPH-2014 Mortality Table adjusted to 2006 total dataset, headcount-weighted, projected to the measurement date with Scale MP-2015.

Prior: Non-Disabled and Disabled: RP-2000 Mortality Table with separate male and female rates, with no collar adjustment combined table for non-annuitants and annuitants, projected to the valuation date with Scale AA.

Mortality Improvement:

Projected to date of decrement using Scale MP-2015 (generational mortality).

Prior: Non-Disabled and Disabled: Projected to date of decrement using Scale AA (generational mortality).

We have selected this mortality assumption because it is based on the latest published 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.

Inflation

3.0%.

This assumption is based on long term (1926-2013) 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.

Employee Turnover

Sample termination rates are as follows:

Table T-3

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

Employee Turnover (cont.)

Prior: Annual rates based on the following scale:

Age	Rate of Withdrawal
20	11.1%
25	10.1%
30	8.6%
35	6.8%
40	4.9%
45	2.9%
50	1.2%

Employee Disability

None.

Prior: DP85 male and female class 1 disability incidence rates. Annual incidence rates based on the following scale:

	Incidence of Disability	
Age	Male	Female
20	0.029%	0.030%
25	0.038%	0.047%
30	0.048%	0.080%
35	0.069%	0.136%
40	0.117%	0.211%
45	0.202%	0.323%
50	0.358%	0.533%

Retirement Age

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

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.

Pre-Retirement Spouse Benefit, Disability Benefits and Termination Benefits

Costed explicitly.

Expenses

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

Accrual of Service

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

V. Summary of Plan Provisions

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.

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