

The logo for nyhart, featuring the word "nyhart" in a white, lowercase, sans-serif font. The text is centered within a black rectangular box that is part of a larger graphic element consisting of a thick black vertical bar on the left and a thinner red vertical bar to its right.

nyhart

***Town of North Providence, Rhode Island
Police Pension Plan***

*July 1, 2016
Actuarial Valuation Report*

Actuarial Certification	3
Executive Summary	5
Summary Results	5
Changes Since Prior Valuation and Key Notes	6
Assets and Liabilities	7
Present Value of Future Benefits	7
Funding Liabilities	8
Asset Information	9
Reconciliation of Gain/Loss	11
Reconciliation of Unfunded Actuarial Accrued Liability (UAAL)	12
Contribution Recommendation	13
Development of Actuarial Recommended Contribution	13
Demographic Information	14
Participant Reconciliation	16
Plan Provisions	18
Actuarial Assumptions	21

At the request of the plan sponsor, this report summarizes the valuation of the Town of North Providence, Rhode Island Police Pension Plan as of July 1, 2016. The purpose of this report is to communicate the following results of the valuation:

- Funded Status; and
- Determine Actuarial Recommended Contribution for the fiscal years 2017-18 and 2018-19.

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census and asset information has been provided to us by the employer. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the Board. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as 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); and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

Any valuation results shown prior to July 1, 2016 were provided by the prior actuary. The values were checked for reasonableness and when reproduced were within 5% of the provided values.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart

David D. Harris

David D. Harris, ASA, EA, MAAA

Sally Ray

Sally Ray, ASA

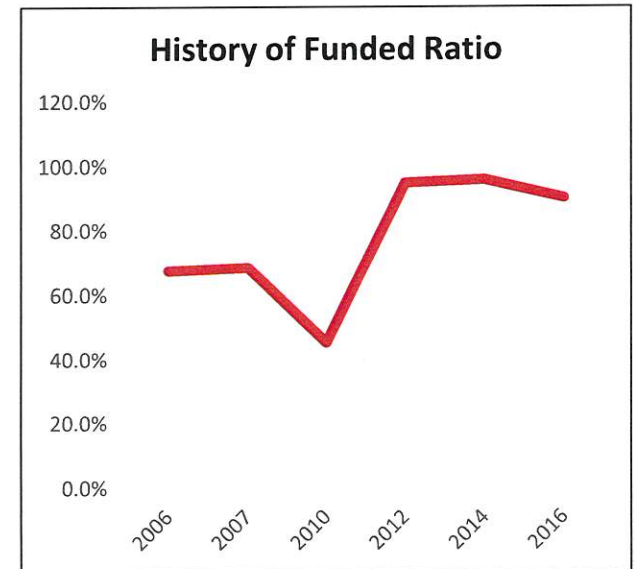
December 20, 2016

Date

Summary Results

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	July 1, 2014	July 1, 2016
Funded Status Measures		
Accrued Liability	\$39,484,542	\$44,148,794
Actuarial Value of Assets	37,854,440	39,792,575
Unfunded Actuarial Accrued Liability (UAAL)	\$1,630,102	\$4,356,219
Funded Percentage (AVA)	95.9%	90.1%
Funded Percentage (MVA)	97.3%	83.1%
Cost Measures		
First Plan Year to Contribute	2015 - 2016	2017 - 2018
Second Plan Year to Contribute	2016 - 2017	2018 - 2019
Recommended Contribution	\$812,452	\$1,079,745
As a percentage of payroll	22.1%	28.3%
Asset Performance		
Market Value of Assets (MVA)	\$38,426,236	\$36,680,757
Actuarial Value of Assets (AVA)	\$37,854,440	\$39,792,575
Actuarial Value/Market Value	98.5%	108.5%
Participant Information		
Active Participants	62	61
Terminated Vested Participants	7	6
Retirees, Beneficiaries, and Disabled Participants	74	88
Total	143	155
Expected Payroll	\$3,674,859	\$3,811,043



Changes since Prior Valuation and Key Notes

There have been no changes to the plan provisions since the last valuation.

To better reflect anticipated experience, the healthy mortality table used to measure funding liability has been changed from RP-2000 Mortality Table, Male and Female, with generational projection of future mortality improvements per Scale AA to RP-2014 Blue Collar Mortality with generational improvements projected beginning in 2006 based on the Social Security Administration's assumptions from the 2015 Trustees' Report. In addition, the disabled mortality table used to measure funding liability has been changed from RP-2000 Disabled Mortality Table, Male and Female, with generational projection of future mortality improvements per Scale AA to RP-2014 Disabled Mortality with generational improvements projected beginning in 2006 based on the Social Security Administration's assumptions from the 2015 Trustees' Report. These changes resulted in a decrease in the liabilities and normal cost.

Based on information provided by the Town regarding proposed salary negotiations with the Police Union, the salary scale was changed from an age-based table to a flat 2.00% scale. This change results in a decrease in liabilities and normal cost.

To be consistent with the updated salary scale, the payroll growth rate for amortization of Unfunded Actuarial Accrued Liability was changed from 3.5% to 2.0%. This change resulted in a slight increase in the actuarially recommended contribution.

Any valuation results shown prior to July 1, 2016 were provided by the prior actuary. The values were checked for reasonableness and when reproduced were within 5% of the provided values.

The actuarially recommended contribution has increased from 22.1% of payroll to 28.3% of payroll, attributed mainly to:

- Asset experience: market returns were flat for the past two years versus the expectation of 7.25% annual growth (+5.8% of payroll)
- Demographic experience: (+7.6% of payroll)
 - Salary increases about twice the expected amounts
 - More retirements than expected with larger benefits than expected
- Assumption changes (-6.1% of payroll)

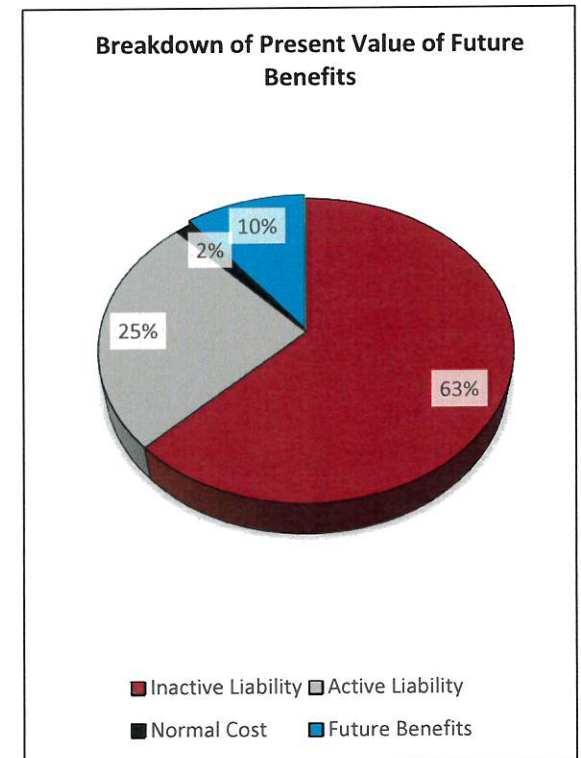
Present Value of Future Benefits

The Present Value of Future Benefits represents the future benefits payable to the existing participants.

July 1, 2016

Present Value of Future Benefits

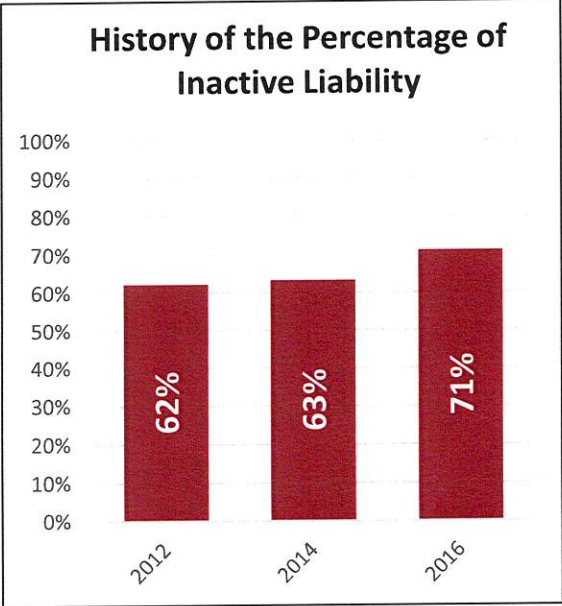
Active participants	
Retirement	\$17,331,460
Disability	1,044,260
Death	249,992
Termination	44,338
Refund of contributions	0
Total active	\$18,670,050
Inactive participants	
Retired participants	\$23,581,716
Beneficiaries	439,052
Disabled participants	6,480,412
Terminated vested participants	932,437
Total inactive	\$31,433,617
Total	\$50,103,667
 Present value of future payrolls	 \$30,954,734



Accrued Liability

The Funding Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions.

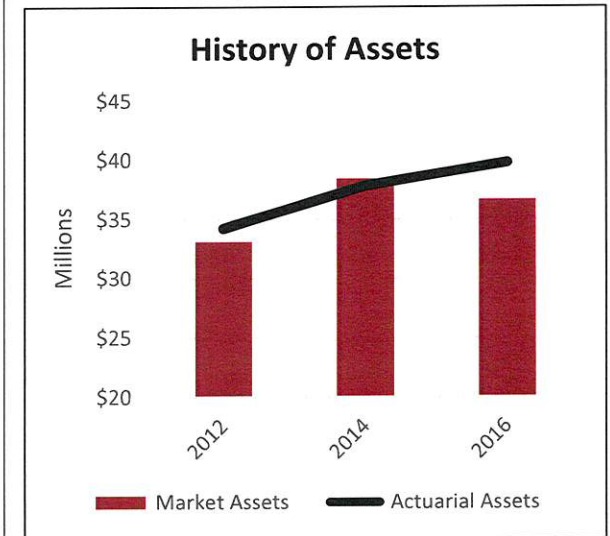
	July 1, 2016
Funding Liabilities	
Active participants	
Retirement	\$12,133,987
Disability	486,846
Death	94,828
Termination	(484)
Refund of contributions	0
Total Active	\$12,715,177
Inactive participants	
Retired participants	\$23,581,716
Beneficiaries	439,052
Disabled participants	6,480,412
Terminated vested participants	932,437
Total Inactive	\$31,433,617
Total	\$44,148,794
 Normal Cost	 \$736,642



Asset Information

The amount of assets backing the pension promise is the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	July 1, 2015	July 1, 2016
Market Value Reconciliation	2014 – 2015	2015 - 2016
Market value of assets, beginning of prior plan year	\$38,426,236	\$37,521,716
Contributions		
Employer contributions	849,111	832,616
Employee contributions	369,520	315,247
Total	\$1,218,631	\$1,147,863
Investment income and expenses	(186,787)	236,394
Benefit payments	(1,936,364)	(2,225,216)
Market value of asset, beginning of current year	\$37,521,716	\$36,680,757
Return on Market Value	-0.49%	0.64%
Market value of assets available for pension benefits	\$37,521,716	\$36,680,757
Actuarial Value of Assets		
Value at beginning of current year	\$39,393,834	\$39,792,575



Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements.

1.	Expected Market Value of Assets as of July 1, 2015		
	(a) Market Value of assets as of July 1, 2014		\$38,426,236
	(b) Employee Contributions		369,520
	(c) Employer Contributions		849,111
	(d) Benefit payments		(1,936,364)
	(e) Expected Investment Income		2,750,256
	(f) Expected Market Value of Assets as of July 1, 2015		\$40,458,759
2.	Actual Market Value of Assets as of July 1, 2015		\$37,521,716
3.	Market Value (Gain)/Loss for 2014-15, (1f) – (2)		\$2,937,043
4.	Expected Market Value of Assets as of July 1, 2016		
	(a) Market Value of assets as of July 1, 2015		\$37,521,716
	(b) Employee Contributions		315,247
	(c) Employer Contributions		832,616
	(d) Benefit payments		(2,225,216)
	(e) Expected Investment Income		2,676,875
	(f) Expected Market Value of Assets as of July 1, 2016		\$39,121,238
5.	Actual Market Value of Assets as of July 1, 2016		\$36,680,757
6.	Market Value (Gain)/Loss for 2015-16: (4f) – (5)		\$2,440,481
7.	Deferred Investment gains or (losses)		
	(a) Current year: 80% x \$2,440,461		\$1,952,385
	(b) First prior year: 60% x \$2,937,043		1,762,226
	(c) Second prior year: 40% x (\$2,274,300)		(909,720)
	(d) Third prior year: 20% x \$1,534,634		306,927
	(e) Total		\$3,111,818
8.	Final actuarial value of assets, (5) + (7e)		\$39,792,575
9.	Return on actuarial value of assets 2014-15		6.02%
10.	Return on actuarial value of assets 2015-16		3.80%

Reconciliation of Gain/Loss

	July 1, 2016
Liability (gain)/loss	
Actuarial liability, beginning of prior year	\$39,484,542
Normal cost for July 1, 2014 – July 1, 2016	1,656,580
Benefit payments for July 1, 2014 - July 1, 2016	(4,161,580)
Change in Assumptions	(915,854)
Expected Interest	5,823,702
Expected actuarial liability, beginning of current year	\$41,887,390
Actual actuarial liability	\$44,148,794
Liability (gain)/loss	\$2,261,404
Asset (gain)/loss	
Actuarial value of assets, beginning of prior year	\$37,854,440
Employer Contributions	1,681,727
Employee Contributions	684,767
Benefit payments	(4,161,580)
Expected Investment return	5,465,800
Expected actuarial value of assets, beginning of current year	\$41,525,154
Actual actuarial value of assets, beginning of current year	\$39,792,575
Asset (gain)/loss	\$1,732,579
Total (gain)/loss	\$3,993,983

Reconciliation of Unfunded Actuarial Accrued Liability (UAAL)

	July 1, 2016
1. UAAL beginning of prior year	\$1,630,102
2. Normal Cost	1,656,580
3. Expenses	0
4. Employer Contributions	(1,681,727)
5. Employee Contributions	(684,767)
6. Interest	357,902
7. Expected UAAL, beginning of current year	\$1,278,090
8. Changes due to:	
(a) Amendments	\$0
(b) Assumptions	
(1) Mortality & Salary Scale Update	(915,854)
(c) Funding Methods	0
(d) (Gain)/Loss	3,993,983
(e) Total	\$3,078,129
9. UAAL beginning of current year	\$4,356,219

Development of Actuarial Recommended Contribution

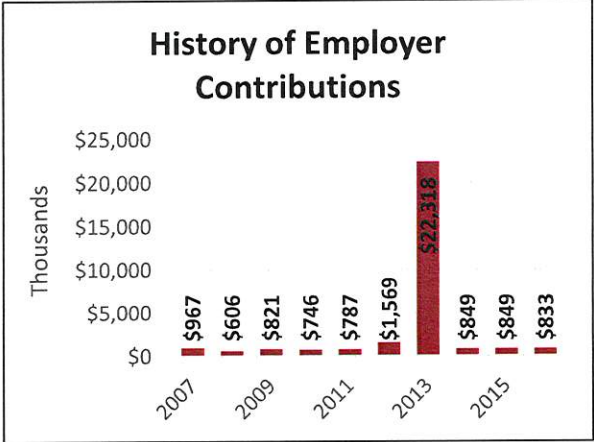
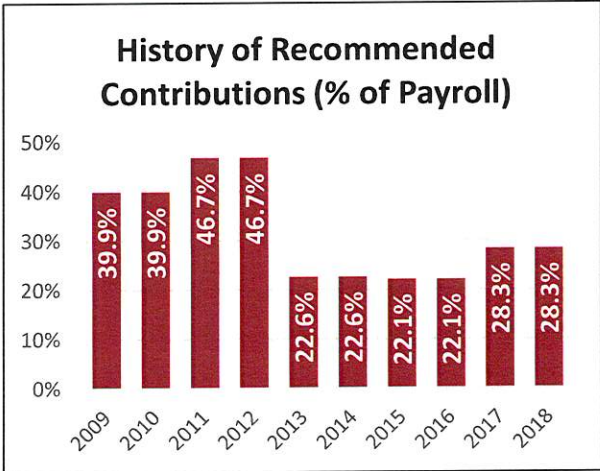
The actuarial recommended contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws.

Amortization of Unrecognized Actuarial Accrued Liability

1. Calculation of UAAL	
(a) Accrued Liability	\$44,148,794
(b) Actuarial Value of Assets	39,792,575
(c) UAAL as of July 1, 2016	\$4,356,219
2. Amortization Period	10
3. UAAL Amortization as of July 1, 2016	\$540,373

Actuarial Recommended Contribution

1. Normal Cost	
(a) Total normal cost	\$736,642
(b) Expected participant contributions	304,883
(c) Net normal cost	\$431,759
2. Amortization of UAAL	540,373
3. Interest	107,613
4. Calculated contribution at valuation date	\$1,079,745
5. Valuation payroll	\$3,811,043
6. Calculated contribution as a percentage of payroll	28.3%



Demographic Information

The foundation of a reliable actuarial report is the participant information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

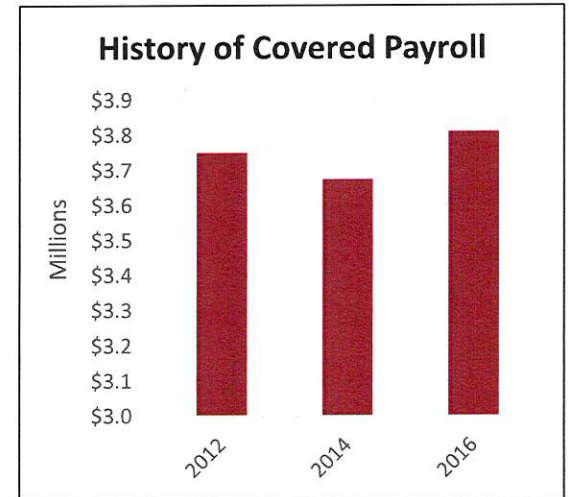
July 1, 2016

Participant Counts

Active Participants	61
Retired Participants – Full Benefit	46
Retired Participants – COLA Only ¹	18
Beneficiaries	6
Disabled Participants	18
Terminated Vested Participants	6
Total Participants	155

Active Participant Demographics

Average Age	37.8
Average Service	9.7
Average Compensation	\$62,476
Covered Payroll	\$3,811,043
Total Payroll	\$3,811,043



¹ This splits out retirees receiving only COLA payments from the Plan. Annuities were purchased through John Hancock.

Demographic Information (continued)

	July 1, 2016
Retiree Statistics – Full Benefit	
Average Age	52.6
Average Annual Benefit	\$35,082
Retiree Statistics – COLA Only	
Average Age	73.6
Average Annual COLA	\$2,640
Beneficiary Statistics	
Average Age	68.7
Average Annual Benefit	\$6,536
Disabled Participants Statistics	
Average Age	54.6
Average Annual Benefit	\$32,405
Terminated Participants Statistics	
Average Age	43.0
Average Annual Benefit	\$14,076

Town of North Providence, Rhode Island Police Pension Plan
Actuarial Valuation as of July 1, 2016
Participant Reconciliation

Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
Prior Year	62	7	16	55	3	143
Active						
To Retired	(10)	0	0	10	0	0
To Disabled	(1)	0	1	0	0	0
To Terminated Vested	(2)	2	0	0	0	0
Terminated Vested						
To Active	1	(1)	0	0	0	0
To Disabled	0	(1)	1	0	0	0
To Terminated Non-Vested	0	(1)	0	0	0	(1)
Retired						
To Death	0	0	0	(4)	0	(4)
Additions						
New Hires	11	0	0	0	0	11
Alternate Payee	0	0	0	3	0	3
New Survivor	0	0	0	0	3	3
Departures	0	0	0	0	0	0
Current Year	61	6	18	64	6	155

Active Participant Schedule

Active participant information grouped based on age and service.

Age Group	Years of Service										Total
	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 & Up	
Under 25	1	1									2
25 to 29	2	7	3								12
30 to 34	1	2	5	2							10
35 to 39			4	9							13
40 to 44		2		4	3	1					10
45 to 49			1	3	2	3	1				10
50 to 54			1		2	1					4
55 to 59											0
60 to 64											0
65 to 69											0
70 & up											0
Total	4	12	14	18	7	5	1	0	0	0	61

Plan Effective Date:

The plan was originally effective July 1, 1978.

Eligibility for Participation:

All full-time Police Officers working 1,000 hours or more and are contributing to the Plan are eligible to participate.

Credited Service:

For Vesting

A year of vesting service is credited for each plan year in which a participant is credited with at least 1,000 hours of service.

For Benefit Accrual

Full years and completed months from date of hire.

Average Compensation:

Average of 3 highest non-consecutive years during the last 10 years of base annual pay (including longevity pay and excluding overtime)

Normal Retirement Benefit:

Eligibility: Completion of 20 years of service regardless of age

Benefit: 2.50% of Average Compensation for the first 20 years of Credited Service plus 2.00% of Average Compensation for any years of Credited Service in excess of 20. The maximum retirement benefit is 75% of Average Compensation.

Occupational Disability Benefit:

Eligibility: Permanent and total disability

Benefit: 66 2/3% of Average Compensation

Non-Occupational Disability Benefit:

Eligibility: Completion of 7 years of service and eligible for Social Security Disability

Benefit: 50% of Average Compensation

Pre-Retirement Death Benefit:

- Eligibility: Immediately eligible, payable immediately
- Benefit: If married with surviving spouse, 40% of Final Average Salary plus 10% for dependent children, subject to a maximum of 50%. If no surviving spouse, 15% of Final Average Salary for each dependent child, subject to a maximum of 45%, and ceasing when the last child has attained his 18th birthday.
- Additional Benefit: \$400 per year of service, subject to a minimum of \$2,000 and a maximum of \$8,000, but no less than the Employee Accumulation. If death occurs after the termination date, only the Employee Accumulation is payable.

Post-Retirement Death Benefit:

- Eligibility: Death after retirement, payable immediately
- Benefit: \$400 per year of service, reduced by 25% for each year subsequent to retirement date subject to a minimum of \$2,000, plus the Employee Accumulation less annuity payments received. If the former participant's termination date occurred before their retirement date, only their Employee Accumulation less annuity payments received is payable.

Vesting:

100% on completing 10 years of vesting service

Employee Contributions:

- Prior to January 1, 2007* 7% of Compensation, accumulated with 5% interest
- On or after January 1, 2007* 8% of Compensation, accumulated with 5% interest

Normal form of payment

The normal form of payment for a married participant is a monthly benefit payable for the participant's lifetime with 67.5% of such benefit continuing to a surviving spouse. The normal form of payment for an unmarried participant is a monthly benefit payable for the participant's lifetime with no further payments after the participant's death.

Cost of Living Increases (FE):

Participants retiring on after July 1, 1982 and before July 1, 1986

Eligibility: All eligible.

COLA: Lump sum payment each January 1st in an amount equal to 3% of the original retirement allowance next following date of retirement, plus 3% every year thereafter, not compounded.

Participants retiring on or after July 1, 1986 and before July 1, 2004

Eligibility: Completion of 20 years of service

COLA: Lump sum payment each January 1st in an amount equal to 3% of the original annual retirement allowance, increasing each year by 1%, to a maximum of 12%.

Participants retiring on or after July 1, 2004 and before January 1, 2006

Eligibility: Completion of 20 years of service

COLA: Lump sum payment each January 1st beginning January 1, 2008 in an amount equal to 3% per year of the annual retirement allowance, not compounded, for a period of 15 years. At the end of 15 years, the COLA will not increase but will continue to be paid.

Participants retiring on or after July 1, 2006

Eligibility: Completion of 20 years of service

COLA: Lump sum payment each January 1st in an amount equal to 3% per year of the annual retirement allowance, not compounded, for a period of 25 years. At the end of 25 years, the COLA will not increase but will continue to be paid.

Actuarial Equivalence

Actuarial Equivalence will be computed using 7.0% interest and the mortality table is the UP-1984 Table.

Plan Provisions Not Included

We are not aware of any plan provisions not included in the report.

Adjustments Made for Subsequent Events

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact the results of this report.

Valuation Date:	July 1, 2016	
Participant and Asset Information as of:	July 1, 2016	
Retirement Rates (FE):	Service	Rate
	20	40%
	21-22	30%
	23-25	40%
	26-27	5%
	28	100%
Withdrawal Rates (FE):	Age	Rate
	20-30	2.90%
	35	1.90%
	40	1.70%
	45	0.00%
Disability Rates (FE):	50% of the 1985 Pension Disability Table (DP-85) Class 4. 50% of disabilities are assumed to be duty-related	
Mortality (FE):		
Healthy	RP-2014 Blue Collar Mortality with generational improvements projected beginning in 2006 based on the Social Security Administration's assumptions from the 2015 Trustees' Report	
Disabled	RP-2014 Disabled Mortality with generational improvements projected beginning in 2006 based on the Social Security Administration's assumptions from the 2015 Trustees' Report	
Salary Projection Scale (FE):	2.00% based on information provided by the Town regarding proposed salary negotiations with the Police Union	
Interest Rate (CO):	7.25%	
Expense and/or Contingency Loading (FE):	None	
Marital Status and Ages (FE):	70% of Participants assumed to be married with wives assumed to be 1 year younger than husbands. 100% of active members are assumed to have one dependent child	
Funding method	Liabilities and contributions in the report are based on application of an Entry Age Normal cost method. In determining the Actuarially Recommended Contribution, the excess of the entry age actuarial accrued liability over the actuarial value of plan assets is amortized over an open 10-year period as a level percentage of pay. For this purpose, pay is assumed to grow at 2.0% annually.	

Asset Valuation Method:	Market value of assets with a five year smoothing of gains and losses.
Amortization Method:	Open 10-year level percent of pay amortization of Unfunded Actuarial Accrued Liability; for this purpose, pay is assumed to grow at 2.0% annually
Changes Since Prior Report:	<p>The healthy mortality table used to measure funding liability has been changed from RP-2000 Mortality Table, Male and Female, with generational projection of future mortality improvements per Scale AA to RP-2014 Blue Collar Mortality with generational improvements projected beginning in 2006 based on the Social Security Administration's assumptions from the 2015 Trustees' Report. In addition, the disabled mortality table used to measure funding liability has been changed from RP-2000 Disabled Mortality Table, Male and Female, with generational projection of future mortality improvements per Scale AA to RP-2014 Disabled Mortality with generational improvements projected beginning in 2006 based on the Social Security Administration's assumptions from the 2015 Trustees' Report. In addition, based on information provided by the Town regarding proposed salary negotiations with the Police Union, the salary scale was changed from an age-based table to a flat 2.00% scale. All of these changes resulted in a decrease in the liabilities and normal cost.</p> <p>To reflect the updated salary scale, the payroll growth rate for amortization of Unfunded Actuarial Accrued Liability was changed from 3.5% to 2.0%.</p>

FE indicates an assumption representing an estimate of future experience

MD indicates an assumption representing observations of estimates inherent in market data

CO indicates an assumption representing a combination of an estimate of future experience and observations of market data