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Town of Westerly
Police Pension Fund

July 1, 2019 ACTUARIAL VALUATION

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At the request of the plan sponsor, this report summarizes the actuarial results of the Town of Westerly Police Pension Fund as of July 1, 2019. The purpose of this report is to communicate the following results of the valuation:

• Funded Status;
• Determine Actuarial Recommended Contribution for plan year ending June 30, 2020; and
• Determine Actuarial Recommended Contribution for plan year ending June 30, 2021.

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 employer. 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.

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

Elizabeth A. Wiley

Elizabeth A. Wiley, FSA, EA

Carter M Angell

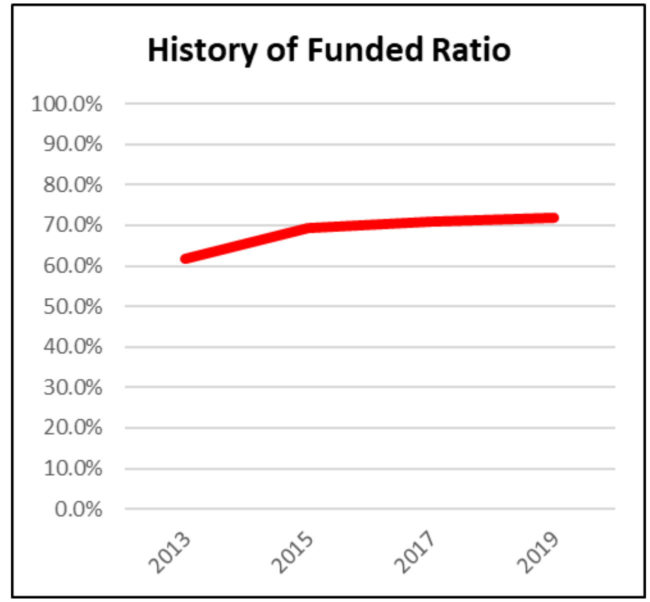
Carter M Angell, FSA, EA, MAAA

12/13/2019
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.

Valuation Date	July 1, 2017	July 1, 2019
Funded Status Measures		
Entry Age Accrued Liability	$46,420,634	$52,873,279
Actuarial Value of Assets	32,963,763	38,010,559
Unfunded Actuarial Accrued Liability (UAAL)	13,456,871	14,862,720
Funded Percentage (AVA)	71.0%	71.9%
Funded Percentage (MVA)	70.2%	72.3%
Asset Performance		
Market Value of Assets (MVA)	$32,601,961	$38,247,039
Actuarial Value of Assets (AVA)	$32,963,763	$38,010,559
Actuarial Value/Market Value	101.1%	99.4%
Participant Information		
Active Participants	48	45
Terminated Vested Participants	1	1
Retirees, Beneficiaries, and Disabled Participants	48	52
Total	97	98



Cost Measures for Plan Year Ending:	June 30, 2019	June 30, 2020	June 30, 2021
Actuarial Recommended Contribution	$1,636,400	$1,759,248	$1,786,470
Actuarial Recommended Contribution (as a percentage of projected payroll)	42.3%	46.7%	44.9%
Total Payroll	$3,866,804	$3,768,316	$3,975,573

Changes since Prior Valuation and Key Notes

The mortality improvement scale has been updated from using the fully generational scale MP-2016 to using the fully generational scale MP-2018. The mortality table (RP-2014 Total) and the year in which improvements begin (2006) remain the same. This change results in a decrease in liability and normal cost.

The valuation interest rate has been reduced from 7.25% to 7.00% to match future expected asset performance. This change resulted in an increase in liability and normal cost.

Prior to the 7/1/2019 valuation, assets between the Town of Westerly Police Pension Fund and the Town of Westerly Police OPEB plan were invested within the same trust. Each plan was allocated its pro-rata share of the return based on each plan's separate cash flows for the year and proportion of the fund as of the beginning of the year. The actuarial value of assets, which was determined using a 5-year smoothing method of each year's gains and losses, was allocated between the two plans based on the year end percentage of the total market value of assets which each plan had been allocated. The two plans are now separately invested. With the 7/1/2019 valuation, the Town of Westerly Police Pension Fund is now using a 5-year smoothing method of each year's asset gains and losses based on its own fund's individual performance with a fresh start of gains and losses as of 7/1/2019.

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

Valuation Summary

	07/01/2013	07/01/2015	07/01/2017	07/01/2019
Funding				
Accrued Liability	$38,565,941	$41,967,326	$46,420,634	$52,873,279
Actuarial Value of Assets	$23,756,900	$29,123,313	$32,963,763	$38,010,559
Unfunded Actuarial Accrued Liability	$14,809,041	$12,844,013	$13,456,871	$14,862,720
Funded Percentage	61.6%	69.4%	71.0%	71.9%
Normal Cost (NC)	$851,843	$994,412	$904,511	$925,576
NC as a Percent of Covered Payroll	26.0%	25.7%	24.7%	24.6%
Actual Contribution	$1,586,044	$1,716,400	$1,720,000	TBD
Recommended Contribution	$1,272,700	$1,716,400	$1,667,700	$1,636,400
Recommended Contribution (% of Pay)	51.9%	42.0%	40.9%	42.3%
Interest Rate	7.50%	7.50%	7.25%	7.00%
Rate of Return				
Actuarial Value of Assets	5.9%	8.6%	7.0%	7.2%
Market Value of Assets	9.2%	4.4%	11.7%	7.8%
Demographic Information				
Active Participants	49	49	48	45
Terminated Vested Participants	1	1	1	1
Retired Participants	40	38	42	43
Beneficiaries	6	8	6	6
Disabled Participants	0	0	0	3
Total Participants	96	96	97	98
Covered Payroll	$3,281,010	$3,864,806	$3,665,217	$3,768,316
Average Covered Pay	$70,642	$78,874	$76,359	$83,740

Identification of Risks

The results presented in this report are shown as single point values. However, these values are derived using assumptions about future markets and demographic behavior. If actual experience deviates from our assumptions, the actual results for the plan will consequently deviate from those presented in this report. Therefore, it is critical to understand the risks facing this pension plan. The following table shows the risks we believe are most relevant to the Town of Westerly Police Pension Fund. The risks are generally ordered with those we believe to have the most significance at the top. Also shown are possible methods by which a more detailed assessment of the risk can be performed.

Type of Risk	Method to Assess Risk
Investment Return	Scenario Testing; Asset Liability Study
Contribution Risks	Stress Testing
Participant Longevity	Annual Monitoring; Experience Study – Recently Completed in 2018
Salary Growth	Experience Study – Recently completed in 2018
Demographic Risk	Experience Study – Recently completed in 2018

Plan Maturity Measures - July 1, 2019

Each pension plan has a distinct life-cycle. New plans promise future benefits to active employees and then accumulate assets to pre-fund those benefits. As the plan matures, benefits are paid and the pre-funded assets begin to decumulate until ultimately, the plan pays out all benefits. A plan's maturity has a dramatic influence on how risks should be viewed. The following maturity measures illustrate where the Town of Westerly Police Pension Fund falls in its life-cycle.

Duration of Liabilities: 13.9

Duration is the most common measure of plan maturity. It is defined as the sensitivity of the liabilities to a change in the interest rate assumption. The metric also approximates the weighted average length of time, in years, until benefits are expected to be paid. A plan with high duration is, by definition, more sensitive to changes in interest rates. A plan with low duration is more susceptible to risk if asset performance deviates from expectations as there would be less time to make up for market losses in adverse market environments while more favorable environments could result in trapped surplus from gains. Conversely, high duration plans can often take on more risk when investing, and low duration plans are less sensitive to interest rate fluctuations.

Demographic Distribution - Ratio of Actively Accruing Participants to All Participants: 44.9%

A plan with a high ratio is more sensitive to fluctuations in salary (if a salary-based plan) and statutory changes. A plan with a low ratio is at higher risk from demographic experience. Such a plan should pay close attention to valuation assumptions as there will be less opportunity to realize future offsetting gains or losses when current experience deviates from assumptions. Plans with a low ratio also have limited opportunities to make alterations to plan design to affect future funded status.

Asset Leverage - Ratio of Payroll for Plan Participants to Market Value of Assets: 9.9%

Younger plans typically have a large payroll base from which to draw in order to fund the plan while mature plans often have a large pool of assets dedicated to providing benefits to a population primarily consisting of members no longer on payroll. Plans with low asset leverage will find it more difficult to address underfunding, as the contributions needed to make up the deficit will represent a higher percentage of payroll than for a plan with high asset leverage.

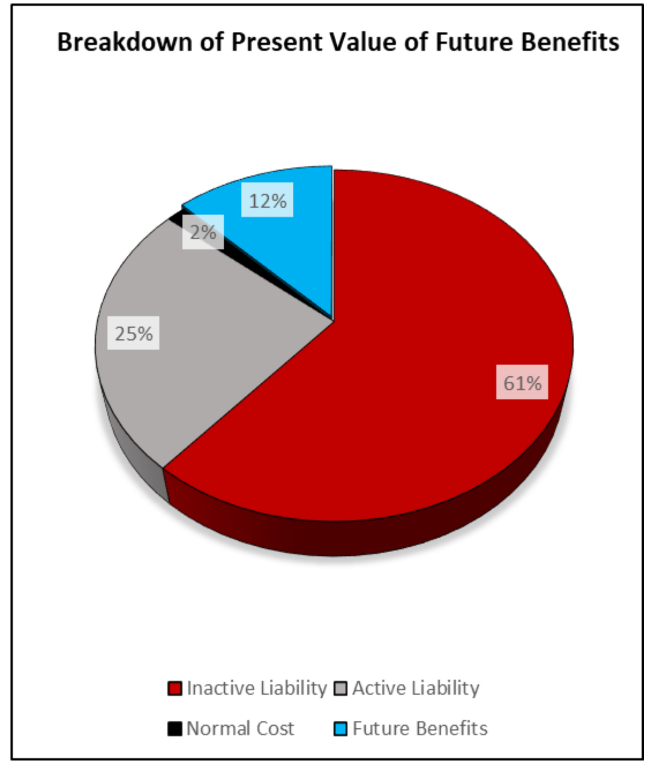
Benefit Payment Percentage - Ratio of Annual Benefit Payments to Market Value of Assets: 6.2%

As a plan enters its decumulation phase, a larger percentage of the pre-funded assets are paid out each year to retirees. A high percentage is not cause for alarm as long as the plan is nearly fully funded. However, such a plan is more sensitive to negative asset performance, especially if cash contributions are not an option to make up for losses.

Present Value of Future Benefits

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

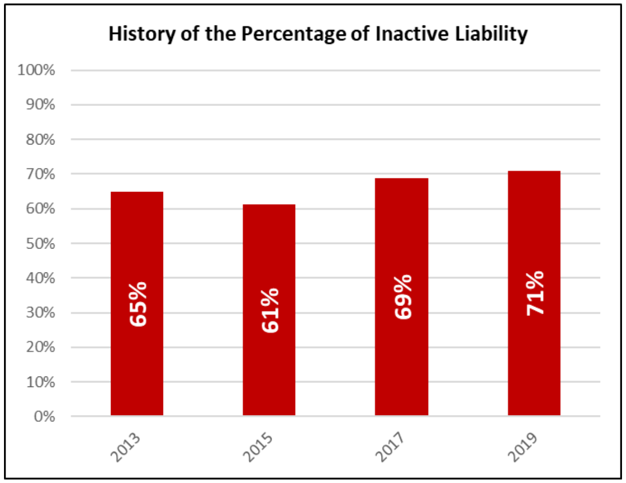
	July 1, 2019
Present Value of Future Benefits	
Active participants	
Retirement	$22,261,134
Disability	$659,995
Death	$246,693
Termination	$619,972
Refund of contributions	$0
Total active	$23,787,794
Inactive participants	
Retired participants	$34,073,321
Beneficiaries	$1,434,072
Disabled participants	$1,727,483
Terminated vested participants	$317,763
Total inactive	$37,552,639
Total	$61,340,433



Entry Age Accrued Liability

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

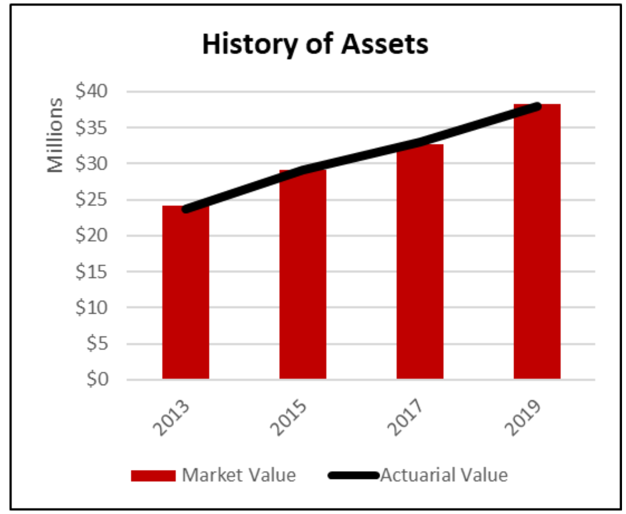
	July 1, 2019
Active participants	
Retirement	$15,142,310
Disability	$188,497
Death	$79,237
Termination	($89,404)
Refund Contributions	$0
Total Active	$15,320,640
Inactive participants	
Retired participants	$34,073,321
Beneficiaries	$1,434,072
Disabled participants	$1,727,483
Terminated vested participants	$317,763
Total Inactive	$37,552,639
Total	$52,873,279
Normal Cost	$925,576



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, 2018 - June 30, 2019
Market Value Reconciliation	
Market value of assets, as of 7/1/2018	$35,568,335
Contributions	
Employer contributions	1,795,200
Employee contributions	473,884
Total	$2,269,084
Investment income	2,841,117
Benefit payments	(2,371,675)
Investment expenses	(59,822)
Market value of assets, beginning of current year	$38,247,039
Return on Market Value	7.84%
Actuarial Value of Assets	
Value at beginning of current year	$38,010,559
Actuarial Value as a % of Market Value	99.4%



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Asset Information (continued) – Development of Actuarial Value of Assets

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

	July 1, 2019
Investment Gain or (Loss)	
1. Expected market value of assets	
(a) Market value of assets, as of 7/1/2018	$35,568,335
(b) Contributions	2,269,084
(c) Benefit payments	(2,371,675)
(d) Expected return	2,485,695
(e) Expected market value of assets, beginning of current year	$37,951,439
2. Market value of assets, beginning of current year	$38,247,039
3. Actual return on market value	$2,781,295
4. Amount subject to phase in [(3) – (1d)]	$295,600
5. Phase in of asset gain/(loss)	
(a) Current year (80% x $295,600)	$236,480
(b) First prior year (60% x $0)	0
(c) Second prior year (40% x $0)	0
(d) Third prior year (20% x $0)	0
(e) Total phase-in	$236,480
6. Actuarial value of assets, beginning of current year [(2)-(5e)]	$38,010,559
7. Return on actuarial value of assets	7.2%

Reconciliation of Gain/Loss

	July 1, 2019
Liability (Gain)/Loss	
1. Actuarial liability, as of 7/1/2017	$46,420,634
2. Normal cost for prior 2 years	1,809,022
3. Benefit payments	(4,566,510)
4. Expected Interest	6,915,735
5. Change in Assumptions	1,372,387
6. Change in Plan Provisions	0
7. Expected actuarial liability, beginning of current year	$51,951,268
8. Actual actuarial liability	$52,873,279
9. Liability (Gain)/Loss, (8) – (7)	$922,011
Asset Gain/(Loss)	
10. Actuarial value of assets, as of 7/1/2017	$32,963,763
11. Contributions	4,566,386
12. Benefit payments	(4,566,510)
13. Expected Investment return	5,283,400
14. Expected actuarial value of assets, beginning of current year	$38,247,039
15. Actual actuarial value of assets, beginning of current year	$38,010,559
16. Asset Gain/(Loss), (15) – (14)	$236,480
Total (Gain)/Loss, (9) - (16)	$685,531

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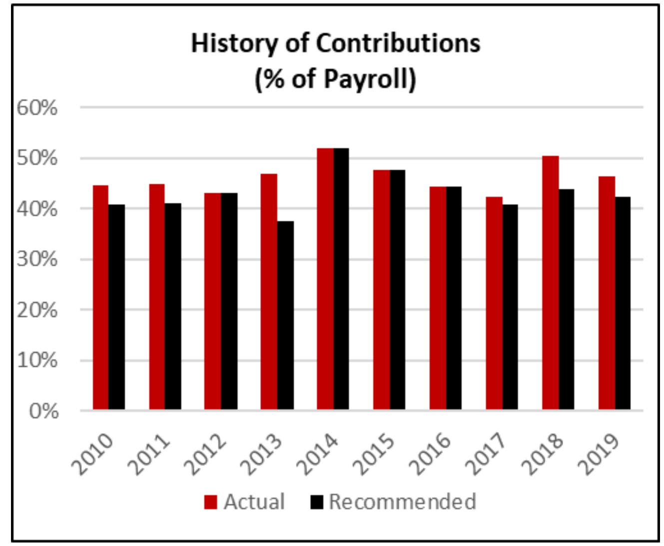
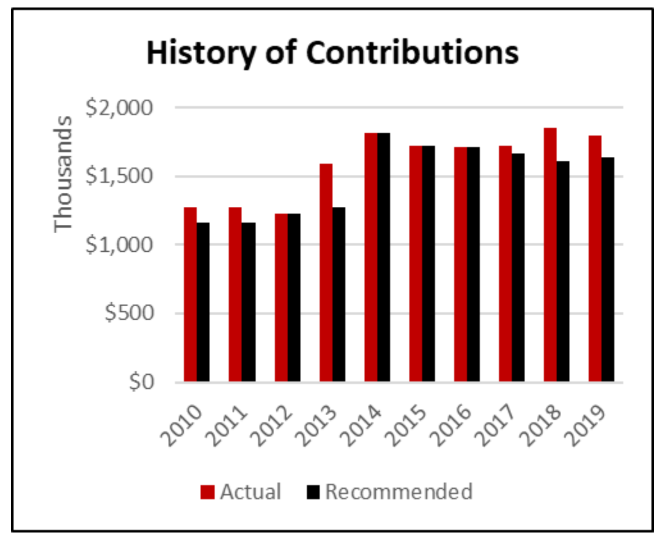
Development of Actuarial Recommended Contribution

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

	July 1, 2019
Funded Position	
1. Entry Age Accrued Liability	$52,873,279
2. Actuarial value of assets	$38,010,559
3. Unfunded actuarial accrued liability (UAAL)	$14,862,720
Employer Contributions	
1. Normal Cost	
(a) Total normal cost	$925,576
(b) Expected participant contributions	$449,958
(c) Employer normal cost	$475,618
2. Amortization of UAAL, 24 Years Remaining from 30 Year Closed Amortization at 7/1/2014	$1,211,090
3. Applicable interest	$72,540
4. Actuarial recommended funding contribution for plan year ending June 30, 2020 (1c) + (2) + (3)	$1,759,248





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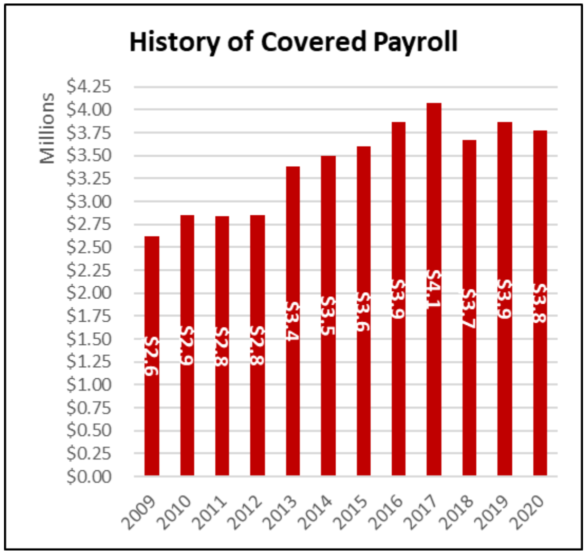
Demographic Information

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, 2019	July 1, 2019
Participant Counts		
Active Participants	48	45
Retired Participants	42	43
Beneficiaries	6	6
Disabled	0	3
Terminated Vested Participants	1	1
Total Participants	97	98
Active Participant Demographics		
Average Age	38.2	38.1
Average Service	11.1	11.4
Average Compensation	$76,359	$83,740
Covered Payroll	$3,665,217	$3,768,316



Demographic Information (continued)

	July 1, 2017	July 1, 2019
Retiree Statistics		
Average Age	61.0	60.8
Average Monthly Benefit	$4,104	$4,388
Beneficiary Statistics		
Average Age	70.6	72.6
Average Monthly Benefit	$1,698	$1,929
Disabled		
Average Age	N/A	58.0
Average Monthly Benefit	N/A	$3,659
Terminated Participant Statistics		
Average Age	49.3	51.3
Average Monthly Benefit	$2,216	$2,216

Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
Prior Year	48	1	0	42	6	97
Active						
To Disabled	(2)	0	2	0	0	0
To Retired	(4)	0	0	4	0	0
Retired						
To Disabled	0	0	1	(1)	0	0
To Death	0	0	0	(2)	0	(2)
Additions	3	0	0	0	0	3
Departures	0	0	0	0	0	0
Current Year	45	1	3	43	6	98

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Active Participant Schedule

Active participant information grouped based on age and service.

	Years of Service									
Age Group	**0 to 5**	**5 to 10**	**10 to 15**	**15 to 20**	**20 to 25**	**25 to 30**	**30 to 35**	**35 to 40**	**40 & Up**	**Total**
Under 25	5									5
25 to 29	3	3								6
30 to 34	1	6								7
35 to 39	1	2	5							8
40 to 44			2	3	1					6
45 to 49				5	1					6
50 to 54	1		1	2	1		1			6
55 to 59				1						1
60 to 64										0
65 to 69										0
70 & up										0
Total	11	11	8	11	3		1			45

Participation

All regular police officers are eligible to participate.

Normal retirement benefit

A pension for life computed as 50% of annual pay for 20 years of service plus 2% times annual pay for each year of service over 20 years up to 5 years plus 1% times annual pay for each year of service over 25 years (maximum service equals 30)

For those hired after July 1, 2010, a pension for life computed as 50% of annual pay for 25 years of service plus 3% times annual pay for each year of service over 25 years (maximum service equals 30)

Normal retirement date

Effective July 1, 1987, a policeman may retire upon completion of 20 years of service
Effective July 1, 2010, a policeman hired after July 1, 2010 may retire upon completion of 25 years of service
Effective July 1, 2013, a policeman hired after July 1, 2013 may retire upon completion of 25 years of service and attainment of age 52

Annual pay

Base salary for the 12 months immediately preceding retirement

Credited service

Period of employment as police officer of Town

Normal form of payment

67.5% Joint & Survivor annuity

Vesting

100% vested after 10 years of service. Participants with less than 10 years of service receive a return of employee contributions with interest.

Non Occupational Disability retirement

10% of final Annual Pay for participants with less than 10 years of service, 18% for 10 to 15 years of service, and 27% for 15 to 20 years of service

Occupational Disability retirement

50% of final Annual Pay

Preretirement death benefit

Return of member's contributions with interest.

Postretirement death benefit

Continuation of 67.5% of deceased retired member's pension to spouse until death or remarriage. If no eligible spouse, benefit payable to dependent children under age 18

Death in line of duty benefit

Heirs shall receive benefits the member would have been entitled to as though they had been members of the bargaining unit for 20 years

Cost-of-living adjustment

Retired prior to June 30, 1990	2.5% Simple, retroactive to July 1, 1993
Retired on or after June 30, 1990	2.5% Simple, effective July 1, 1994
Retired on or after July 1, 1998	3.0% Simple
Hired after July 1, 2010	3.0% Simple after earlier of 5 years of payment or attainment of age 52
Hired after July 1, 2013	2.0% Simple

Member Contributions

12.0% of pay

Except where otherwise indicated, the following assumptions were selected by the plan sponsor with the concurrence of the actuary. Prescribed assumptions are based on the requirements of the relevant law, the Internal Revenue Code, and applicable regulation. The actuary was not able to evaluate the prescribed assumptions for reasonableness for the purpose of the measurement. Unless otherwise specified, assumptions are based on a study of actuarial experience for the plan during 7/1/2007 – 7/1/2017. See experience study dated August 17, 2018.

Valuation Date

July 1, 2019

Participant Data

Collected as of July 1, 2019

Actuarial Cost Method

Entry Age Method

Asset Valuation Method

Fair market value of assets on the measurement date adjusted for a five year phase-in of gains and losses of plan assets at 20% per year

Amortization Method

Closed 30-year level dollar amortization of the Unfunded Actuarial Accrued Liability beginning July 1, 2013.

Interest Rate

7.00% net of investment expenses

This assumption has been set by the plan sponsor in conjunction with their asset advisors. Detailed evaluation of this assumption was outside the scope of our engagement.

Annual Pay Increases

Service	Rate
0	15.00%
1	14.00%
2	12.00%
3	11.00%
4	10.00%
5	9.00%
6	8.00%
7	7.00%
8	6.00%
9	5.50%
10	5.25%
11-12	5.00%
13	4.75%
14	4.50%
15	4.25%
16+	4.00%

The annual pay increases reflect the employer's average target increase for a career employee.

Actuarial Assumptions

Cost of Living Increases

Valued explicitly

Mortality Rates

Healthy

RP 2014 Mortality Table with generational improvements from 2006 using scale MP-2018

Disabled

RP 2014 Disabled Mortality Table with generational improvements from 2006 using scale MP-2018

As the plan is not large enough to have credible experience, mortality assumptions are set to reflect general population trends.

Disability Rates

33% of the 1985 Pension Disability Table Class 4 rates for males and females

Withdrawal Rates

Service	Rate
0	7.00%
1	5.50%
2	5.00%
3	4.50%
4	4.00%
5	3.50%
6	3.00%
7	2.50%
8	2.25%
9	2.00%
10	1.75%
11	1.50%
12	1.25%
13	1.00%
14	0.75%
15	0.50%
16+	0.00%

Retirement Rates

For those hired on or before July 1, 2010:

Service	Rate
20-22	30.00%
23	20.00%
24-27	30.00%
28	100.00%

For those hired after July 1, 2010:

Service	Rate
25-27	30.00%
28	20.00%
29	30.00%
30	40.00%
31	100.00%

For those hired after July 1, 2013, these same rates apply upon attainment of age 52.

Marital Status and Ages

70% of males and 60% of females assumed married with wives 3 years younger than husbands

Payment Form

67.5% Joint & Survivor annuity for married; Single Life annuity otherwise

Expense and/or Contingency Loading

Estimated annual administrative fees. As administrative expenses are not paid from the pension trust, no administrative expenses are assumed.

The actuarial report also shows the necessary items required for plan reporting and any state requirements.

- ✓ Actuarial Recommended Contribution for Plan Year Ending June 30, 2021

Development of Actuarial Recommended Contribution for Plan Year Ending June 30, 2021

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

	July 1, 2019
Funded Position	
1. Entry Age Accrued Liability	$52,873,279
2. Actuarial value of assets	$38,010,559
3. Unfunded actuarial accrued liability (UAAL)	$14,862,720
Employer Contributions	
1. Normal Cost	
(a) Total normal cost	$925,576
(b) Expected participant contributions	$449,958
(c) Employer normal cost	$475,618
2. Covered payroll	$3,768,316
3. Employer Normal Cost as a % of payroll	12.62%
4. Projected payroll	$3,975,573
5. Employer Normal Cost for 2018-2019 Plan Year	$501,717
6. Amortization of UAAL, Amortization of UAAL, 24 Years Remaining from 30 Year Closed Amortization at 7/1/2014	$1,211,090
7. Applicable Interest	$73,663
8. Actuarially recommended contribution for plan year ending June 30, 2021 (5) + (6) + (7)	$1,786,470