



## **The Retirement Plan for Employees of the Town of Portsmouth, Rhode Island**

**Actuarial Valuation and Review as of  
July 1, 2019**

This report has been prepared at the request of the Town of Portsmouth, RI to assist in administering The Retirement Plan for Employees of the Town of Portsmouth, Rhode Island. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Town of Portsmouth, Rhode Island and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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November 27, 2019

Ms. Lisa Mills, Finance Director  
Town of Portsmouth, Rhode Island  
2200 East Main Road  
Portsmouth, RI 02871

Dear Ms. Mills:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2019. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal 2020 and later years.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Town of Portsmouth, Rhode Island to assist in administering the Retirement Plan. The census information and financial information on which our calculations were based was prepared by the staff of the Plan. That assistance is gratefully acknowledged.

The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in my opinion, the assumptions as approved by the Town of Portsmouth, Rhode Island are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: *Bridget P. Orr*  
Bridget P. Orr, ASA, MAAA, EA  
Consulting Actuary

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# Section 1: Actuarial Valuation Summary

## Purpose and Basis

This report was prepared by Segal Consulting to present a valuation of The Retirement Plan for Employees of the Town of Portsmouth, Rhode Island as of July 1, 2019. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. 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; and changes in plan provisions or applicable law.

Certain disclosure information required by Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 as of July 1, 2019 for the Plan is provided in a separate report.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Retirement Plan, as administered by the Town of Portsmouth, Rhode Island;
- The characteristics of covered active employees, inactive employees, and retired employees and beneficiaries as of July 1, 2019, provided by the Town of Portsmouth, Rhode Island;
- The assets of the Plan as of June 30, 2019, provided by the Town of Portsmouth, Rhode Island;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. and
- The funding policy adopted by the Town of Portsmouth, Rhode Island.

## Significant Issues

1. Segal Consulting (“Segal”) strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The funding policy adopted by the Town of Portsmouth, Rhode Island meets this standard and funds the unfunded actuarial accrued liability of the Plan by June 30, 2040 in level amortization payments.
2. The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 56.3%, compared to the prior year funded ratio of 58.1%. This ratio is one measure of funding status, and its history is a measure of funding progress. Using the market value of assets, the funded ratio is 55.1%, compared to 57.8% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan’s benefit obligation or the need for or the amount of future contributions.
3. The Actuarially Determined Contribution for the fiscal year ended June 30, 2020 is the previously budgeted amount of \$4,484,385. The results of this valuation are used to determine the Actuarially Determined Contribution for the fiscal year ending June 30, 2021 of \$4,918,997. In the prior valuation, the fiscal 2021 contribution was projected to be \$4,487,362. The increase is primarily due to the assumption changes and experience and investment losses detailed in Section 2.
4. The unfunded actuarial accrued liability is \$45,430,950, which is an increase of \$4,353,022 since the prior valuation.
5. The actuarial loss from investment and other experience is \$2,695,441, or 2.6% of actuarial accrued liability.
6. The net experience loss from sources other than investment experience was 1.49% of the actuarial accrued liability prior to reflection of assumption changes. This loss was primarily due to Police and Fire retirements earlier than expected, more disability retirements than expected, fewer deaths than projected amongst retired employees and beneficiaries, and salary increases greater than expected.
7. The rate of return on the market value of assets was 3.04% for the July 1, 2018 to June 30, 2019 plan year. The return on the actuarial value of assets was 4.66% for the same period due to the recognition of prior years’ investment gains and losses. This resulted in an actuarial loss when measured against the assumed rate of return of 6.75%. Given the low fixed income interest rate environment, target asset allocation and expectations of future investment returns for various classes, we advise the Town of Providence, Rhode Island to continue to monitor actual and anticipated investment returns relative to the assumed long-term rate of return on investments of 6.75%.
8. The actuarial value of assets is 102.1% of the market value of assets. The investment experience in the past years has only been partially recognized in the actuarial value of assets. As the deferred net loss is recognized in future years, the cost of the Plan is likely to increase unless the net loss is offset by future experience.
9. The following actuarial assumptions were changed with this valuation:
  - Based on recent experience and historical and current demographic data, the retirement rate for employees with 20 years of service was increased from 50% to 60% for employees of the Police department and from 30% to 60% for employees of the Fire department.
  - The administrative expense assumption was decreased from \$40,000 to \$37,500 for the year beginning July 1, 2019.

- For healthy and disabled employees, the mortality tables were changed from the RP-2006 Employee and Healthy Annuitant Mortality Tables to the RP-2006 White Collar Employee and Healthy Annuitant Mortality Tables, and the projection scale for future mortality improvement applied to the mortality tables was updated from the SSA-2014 2D scale to the MP-2019 scale.

As a result of these assumption changes, the employer normal cost increased by \$32,600 and the actuarial accrued liability increased by \$2,358,787.

10. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution under the Plan's funding policy and measuring the progress of that funding policy. The Net Pension Liability (NPL) and Pension Expense under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, for inclusion in the plan and employer's financial statements as of June 30, 2019, will be provided separately. The accounting disclosures will utilize different methodologies from those employed in the funding valuation, as required by the GASB. However, the actuarially determined contribution in this valuation is expected to be used as the actuarially determined contribution (ADC) for GASB financial reporting.
11. This actuarial report as of July 1, 2019 is based on financial and demographic data as of that date. Changes subsequent to that date are not reflected and will affect future actuarial costs of the plan.
12. Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Plan's future financial condition, but have included a brief discussion of some risks that may affect the Plan in Section 2. A more detailed assessment of the risks would provide the Town with a better understanding of the inherent risks. This could be important because relatively small changes in investment performance can produce large swings in the unfunded liabilities, because retired employees account for most of the Plan's liabilities, leaving limited options for reducing costs in the event of adverse experience and because the Town has not had a detailed risk done assessment in the past.

## Summary of Key Valuation Results

		2019	2018
<b>Contributions for plan year beginning July 1:</b>	• Actuarially Determined Contributions for fiscal 2020 and fiscal 2019	\$4,484,385	\$4,324,430
	• Actuarially Determined Contributions for fiscal 2020 and fiscal 2019 as a percent of compensation	55.91%	53.43%
	• Actuarially Determined Contributions for fiscal 2021 and fiscal 2020	\$4,918,997	\$4,484,385
	• Actuarially Determined Contributions for fiscal 2021 and fiscal 2020 as a percent of compensation	62.10%	56.04%
<b>Actuarial accrued liability for plan year beginning July 1:</b>	• Retired employees <sup>1</sup> and beneficiaries	\$81,210,661	\$74,924,712
	• Inactive employees with a vested right to a deferred or immediate benefit	1,978,383	1,692,253
	• Inactive employees due a refund of employee contributions	--	12,120
	• Active employees	20,787,572	21,443,161
	• Total	103,976,616	98,072,246
	• Normal cost including administrative expenses for plan year beginning July 1	1,128,974	1,193,715
<b>Assets for plan year beginning July 1:</b>	• Market value of assets (MVA)	\$57,341,324	\$56,716,068
	• Actuarial value of assets (AVA)	58,545,666	56,994,318
	• Actuarial value of assets as a percentage of market value of assets	102.10%	100.49%
<b>Funded status for plan year beginning July 1:</b>	• Unfunded actuarial accrued liability on market value of assets	\$46,635,292	\$41,356,178
	• Funded percentage on MVA basis	55.15%	57.83%
	• Unfunded actuarial accrued liability on actuarial value of assets	\$45,430,950	\$41,077,928
	• Funded percentage on AVA basis	56.31%	58.11%
	• Amortization period on an AVA basis	21	22
<b>Key assumptions:</b>	• Net investment return	6.75%	6.75%
	• Inflation rate	2.75%	2.75%
	• Salary increases	3.50%	3.50%
<b>Demographic data for plan year beginning July 1:</b>	• Number of retired employees <sup>1</sup> and beneficiaries	192	179
	• Number of inactive employees with a vested right to a deferred or immediate benefit	14	9
	• Number of inactive employees due a refund of employee contributions	0	1
	• Number of active employees	133	143
	• Total compensation	\$7,750,088	\$7,820,129
	• Average compensation	58,271	54,686

<sup>1</sup> Including alternate payees



# Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

<b>Plan of benefits</b>	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
<b>Participant data</b>	An actuarial valuation for a plan is based on data provided to the actuary by the Town of Portsmouth, Rhode Island. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
<b>Assets</b>	The valuation is based on the market value of assets as of the valuation date, as provided by the Town of Portsmouth, Rhode Island. The Town of Portsmouth, Rhode Island uses an “actuarial value of assets” that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
<b>Actuarial assumptions</b>	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan employees for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each employee for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Town of Portsmouth, Rhode Island. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- Actuarial results in this report are not rounded, but that does not imply precision.
- If the Town of Portsmouth, Rhode Island is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Town of Portsmouth, Rhode Island should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

## Section 2: Actuarial Valuation Results

### Employee Data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered employees, including active employees, inactive employees, retired employees and beneficiaries.

This section presents a summary of significant statistical data on these employee groups.

More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A and B*.

#### EMPLOYEE POPULATION: 2011 – 2019

Year Ended June 30	Active Employees	Inactive Employees	Retired Employees and Beneficiaries	Total Non- Actives	Ratio of Non- Actives to Actives
2011	189	14	109	123	0.65
2012	178	13	121	134	0.75
2013	165	14	137	151	0.92
2014	164	11	144	155	0.95
2015	160	7	153	160	1.00
2016	153	7	161	168	1.10
2017	151	8	169	177	1.17
2018	143	10	179	189	1.32
2019	133	14	192	206	1.55

Note: Employee counts prior to 2014 are from the prior actuary's reports.

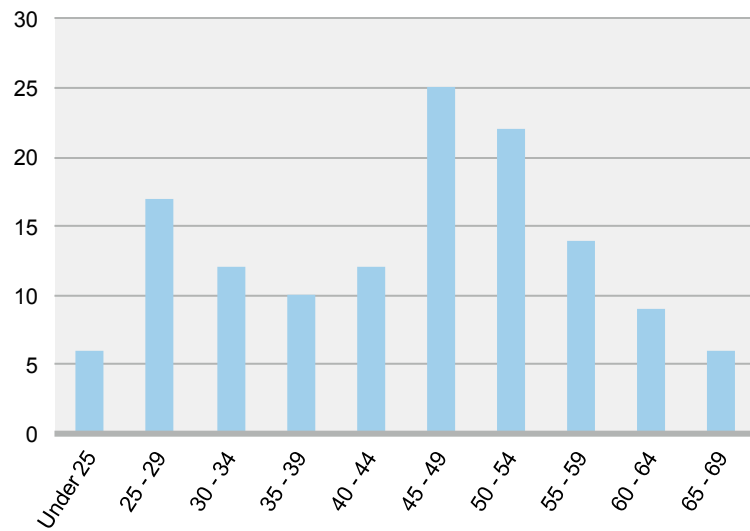
## Active Employees

Plan costs are affected by the age, years of service and compensation of active employees. In this year's valuation, there were 133 active employees with an average age of 45.3, average years of service of 10.9 years and average compensation of \$58,271. The 143 active employees in the prior valuation had an average age of 46.5, average service of 11.0 years and average compensation of \$54,686.

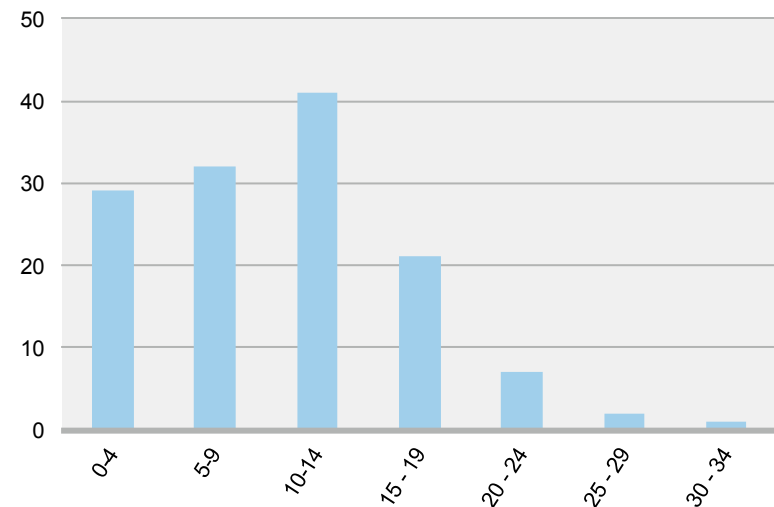
Among the active employees, there were none with unknown age and/or service information.

### Distribution of Active Employees as of June 30, 2019

#### ACTIVES BY AGE



#### ACTIVES BY YEARS OF SERVICE



## Inactive Employees

In this year's valuation, there were 14 employees with a vested right to a deferred or immediate vested benefit.

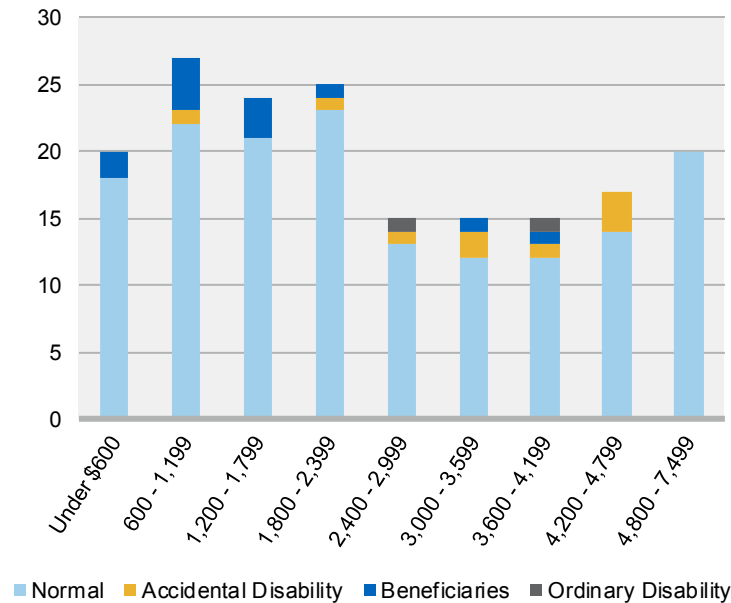
## Retired Employees and Beneficiaries

As of June 30, 2019, 180 retired employees and 12 beneficiaries, including 14 alternate payees, were receiving total monthly benefits of \$481,791. For comparison, in the previous valuation, there were 167 retired employees and 12 beneficiaries, including 12 alternate payees, receiving monthly benefits of \$448,224. These figures include total benefits of retired employees and beneficiaries for whom the Town pays only the COLA portion of the benefit.

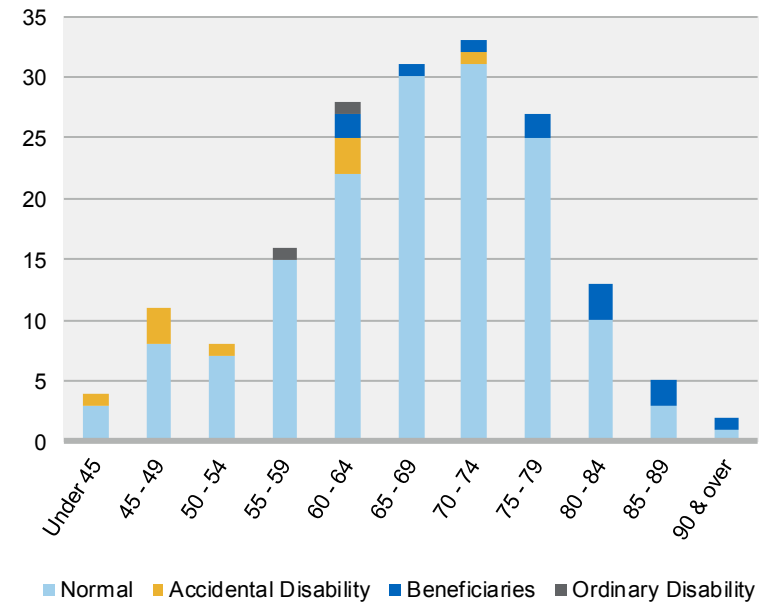
As of June 30, 2019, the average monthly benefit for retired employees is \$2,509, compared to \$2,504 in the previous valuation. The average age for retired employees is 66.7 in the current valuation, compared with 66.2 in the prior valuation.

### Distribution of Retired Employees and Beneficiaries as of June 30, 2019

BY TYPE AND MONTHLY AMOUNT



BY TYPE AND AGE



## Historical Plan Population

The chart below demonstrates the decline of the active population over the last nine years. The chart also shows the growth among the retired population over the same time period.

### EMPLOYEE DATA STATISTICS: 2011 – 2019

Year Ended June 30	Active Employees			Retired Employees and Beneficiaries		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2011	189	46.8	10.5	109	64.4	\$2,076
2012	178	45.3	9.7	121	64.4	2,155
2013	165	45.5	9.2	137	58.9	2,251
2014	164	46.9	10.5	144	64.5	2,273
2015	160	47.1	10.9	153	64.6	2,289
2016	153	46.9	11.2	161	65.5	2,329
2017	151	46.9	11.0	169	65.6	2,430
2018	143	46.5	11.0	179	66.2	2,504
2019	133	45.3	10.9	192	66.7	2,509

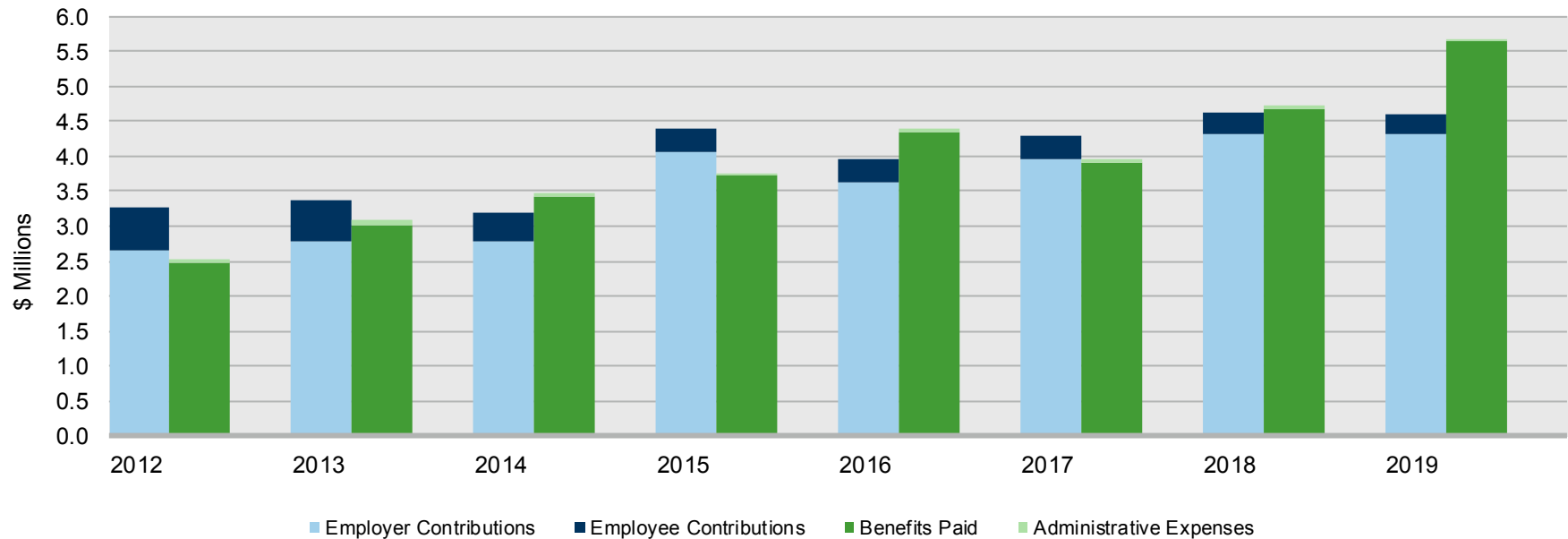
Note: Employee counts prior to 2014 are from the prior actuary's reports.

## Financial Information

Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibit C*.

**COMPARISON OF CONTRIBUTIONS MADE WITH BENEFITS AND EXPENSES PAID  
FOR YEARS ENDED JUNE 30, 2012 – 2019**



It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Town has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

### DETERMINATION OF ACTUARIAL VALUE OF ASSETS FOR YEAR ENDED JUNE 30, 2019

1	Market value of assets, June 30, 2019				\$57,341,324
2	Calculation of unrecognized return	Original Amount <sup>1</sup>	Percent Deferred	Unrecognized Amount <sup>2</sup>	
	(a) Year ended June 30, 2019	-\$2,085,544	80%	-\$1,668,435	
	(b) Year ended June 30, 2018	329,198	60	197,520	
	(c) Year ended June 30, 2017	2,468,728	40	987,492	
	(d) Year ended June 30, 2016	-3,604,596	20	-720,919	
	(e) Year ended June 30, 2015	-2,905,039	0	0	
	(f) Total unrecognized return				-1,204,342
3	Preliminary actuarial value: (1) - (2f)				\$58,545,666
4	Adjustment to be within 20% corridor				0
5	Final actuarial value of assets as of June 30, 2019: (3) + (4)				58,545,666
6	Actuarial value as a percentage of market value: (5) ÷ (1)				102.1%
7	Amount deferred for future recognition: (1) - (5)				-\$1,204,342

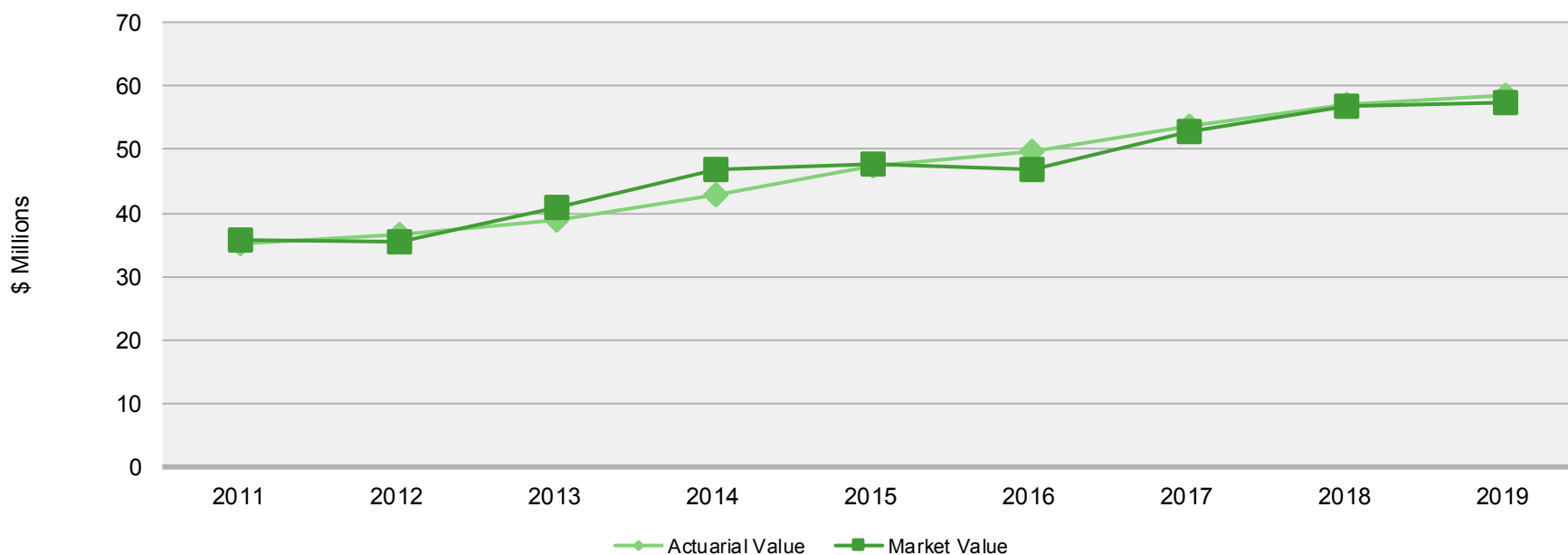
<sup>1</sup> Total return minus expected return on a market value basis.

<sup>2</sup> Recognition at 20% per year over five years.



Both the actuarial value and market value of assets are representations of the Plan’s financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Plan’s liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

### ACTUARIAL VALUE OF ASSETS VS. MARKET VALUE OF ASSETS AS OF JUNE 30, 2011 – 2019



## Actuarial Experience

To calculate the actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), any contribution requirement will decrease from the previous year. On the other hand, any contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss for the year ended June 30, 2019 is \$2,695,441. A discussion of the major components of the actuarial experience is on the following pages.

### ACTUARIAL EXPERIENCE FOR YEAR ENDED JUNE 30, 2019

1	Net loss from investments	-\$1,178,234
2	Net gain from administrative expenses	5,599
3	Net loss from other experience	-1,522,806
4	Net experience loss: 1 + 2 + 3	-\$2,695,441

## Investment Experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Town of Portsmouth, Rhode Island's investment policy. The rate of return on the market value of assets was 3.04% for the year ended June 30, 2019.

For valuation purposes, the assumed rate of return on the actuarial value of assets is 6.75%. The actual rate of return on an actuarial basis for the 2019 plan year was 4.66%. Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended June 30, 2019 with regard to its investments.

### INVESTMENT EXPERIENCE

		Year Ended June 30, 2019	
		Market Value	Actuarial Value
1	Net investment income	\$1,706,305	\$2,632,397
2	Average value of assets	56,175,544	56,453,794
3	Rate of return: 1 ÷ 2	3.04%	4.66%
4	Assumed rate of return	6.75%	6.75%
5	Expected investment income: 2 × 4	\$3,791,849	\$3,810,631
6	Actuarial gain/(loss): 1 – 5	<u>-\$2,085,544</u>	<u>-\$1,178,234</u>

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the actual market value investment return for the last eight years, including a five-year average.

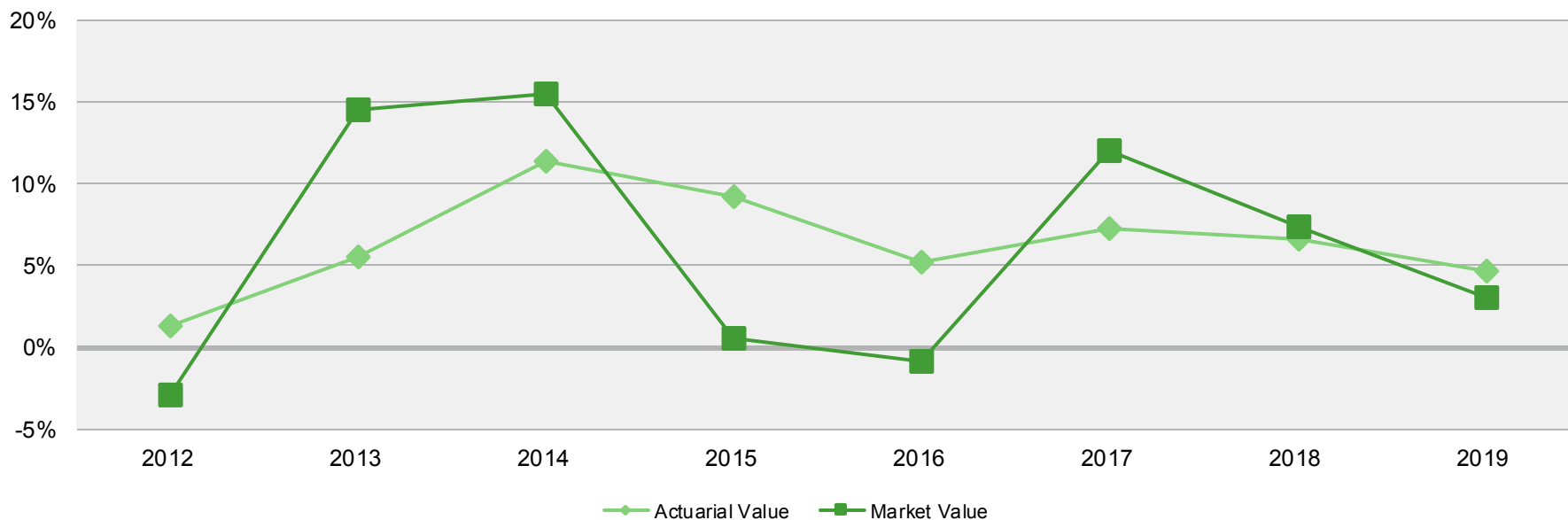
### INVESTMENT RETURN – ACTUARIAL VALUE VS. MARKET VALUE: 2012 - 2019

Year Ended June 30	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
2012	\$476,263	1.34%	-\$1,043,944	-2.90%
2013	2,031,630	5.54	5,140,734	14.47
2014	4,410,989	11.41	6,306,511	15.51
2015	3,961,266	9.16	277,740	0.59
2016	2,472,978	5.23	-395,702	-0.83
2017	3,631,778	7.30	5,647,914	11.99
2018	3,538,439	6.61	3,897,741	7.37
2019	<u>2,632,397</u>	4.66	<u>1,706,305</u>	3.04
Total	\$23,155,740		\$21,537,299	
	Most recent five-year average return	6.49%		4.44%

Note: Each year's yield is weighted by the average asset value in that year.

As described earlier in this section, the actuarial asset valuation method gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

### MARKET AND ACTUARIAL RATES OF RETURN FOR YEARS ENDED JUNE 30, 2012 - 2019



## Administrative Expenses

Administrative expenses for the year ended June 30, 2019 totaled \$36,000 compared to the assumption of \$40,000. This resulted in a gain of \$5,599 for the year when adjusted for interest. Based on past experience and future expectations, we have changed the assumption from \$40,000 to \$37,500 for the current year.

## Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among employees,
- retirement experience (earlier or later than projected),
- mortality (more or fewer deaths than projected),
- the number of disability retirements (more or fewer than projected), and
- salary increases (greater or smaller than projected).

The net loss from this other experience for the year ended June 30, 2019 amounted to \$1,522,806, which is 1.5% of the actuarial accrued liability.

### LIABILITY CHANGES DUE TO DEMOGRAPHIC EXPERIENCE FOR YEAR ENDED JUNE 30, 2019

Loss due to active retirements earlier than projected	<u>-\$482,427</u>
Loss due to fewer deaths than projected amongst retired employees and beneficiaries	<u>-265,253</u>
Loss due to more disability retirements than projected	<u>-464,868</u>
Loss due to salary increases greater than projected	<u>-203,780</u>
Miscellaneous loss	<u>-106,478</u>
<b>Total</b>	<b><u>-\$1,522,806</u></b>

## Changes in the Actuarial Accrued Liability

The actuarial accrued liability as of July 1, 2019 is \$103,976,616, an increase of \$5,904,370, or 6.0%, from the actuarial accrued liability as of the prior valuation date. The liability is expected to grow each year with normal cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed in the previous subsection) and changes in assumptions (described below).

## Actuarial Assumptions

The following actuarial assumptions were changed with this valuation:

- Based on recent experience and historical and current demographic data, the retirement rate for employees with 20 years of service was increased from 50% to 60% for employees of the Police department and from 30% to 60% for employees of the Fire department.
- The administrative expense assumption was decreased from \$40,000 to \$37,500 for the year beginning July 1, 2019.
- For healthy and disabled employees, the mortality tables were changed from the RP-2006 Employee and Healthy Annuitant Mortality Tables to the RP-2006 White Collar Employee and Healthy Annuitant Mortality Tables, and the projection scale for future mortality improvement applied to the mortality tables was updated from the SSA-2014 2D scale to the MP-2019 scale.

These changes increased the actuarial accrued liability by 2.32% and increased the employer normal cost by 3.85%.

Details on actuarial assumptions and methods are in *Section 4, Exhibit I*.

## Plan Provisions

There were no changes in plan provisions since the prior valuation.

A summary of plan provisions is in *Section 4, Exhibit II*.

## Development of Unfunded Actuarial Accrued Liability

### DEVELOPMENT FOR YEAR ENDED JUNE 30, 2019

1	Unfunded actuarial accrued liability at beginning of year	\$41,077,928
2	Normal cost at beginning of year	1,193,715
3	Total contributions	-4,595,611
4	Interest	
	• For whole year on 1 + 2	\$2,853,336
	• For half year on 3	-152,646
	Total interest	<u>2,700,690</u>
5	Expected unfunded actuarial accrued liability	\$40,376,722
6	Changes due to:	
	• Experience loss	\$2,695,441
	• Assumption changes	<u>2,358,787</u>
	Total changes	<u>\$5,054,228</u>
7	Unfunded actuarial accrued liability at end of year	\$45,430,950



## Actuarially Determined Contribution

The Town of Portsmouth, RI has a policy to fund the unfunded actuarial accrued liability of The Retirement Plan for Employees of the Town of Portsmouth, Rhode Island by June 30, 2040 in level amortization payments. The projection of the unfunded actuarial accrued liability recognizes any deferred investment gains or losses due to the operation of the actuarial valuation method.

Because the fiscal year ending June 30, 2020 contribution has been previously budgeted at \$4,484,385, the results of this valuation are used to determine the actuarially determined contribution for the fiscal year ending June 30, 2021 of \$4,918,997. This contribution is comprised of a projected employer normal cost payment and a 20-year level payment on the projected July 1, 2020 unfunded actuarial accrued liability.

The funding schedule shown on the following page shows the actuarially determined contribution for each year until the projected full funding date of June 30, 2040.

The actuarially determined contribution requirement as of July 1, 2019 is based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

### ACTUARIALLY DETERMINED CONTRIBUTION FOR YEAR BEGINNING JULY 1

	2019		2018	
	Amount	% of Projected Compensation	Amount	% of Projected Compensation
1 Total normal cost	\$1,091,474	13.61%	\$1,153,715	14.25%
2 Administrative expenses	37,500	0.46%	40,000	0.49%
3 Expected employee contributions	<u>-250,587</u>	<u>-3.12%</u>	<u>-280,955</u>	<u>-3.47%</u>
4 Employer normal cost: (1) + (2) - (3)	\$878,387	10.95%	\$912,760	11.27%
5 Actuarial accrued liability	103,976,616		98,072,246	
6 Actuarial value of assets	<u>58,545,666</u>		<u>56,994,318</u>	
7 Unfunded actuarial accrued liability: (5) - (6)	\$45,430,950		\$41,077,928	
8 Payment on unfunded actuarial accrued liability	3,497,488	43.60%	3,307,031	40.85%
9 Adjustment for timing	108,510	1.36%	104,639	1.29%
10 Total actuarially determined contribution: (4) + (8) + (9)	<u>4,484,385</u>	<u>55.91%</u>	<u>4,324,430</u>	<u>53.43%</u>
11 Projected compensation	\$8,021,342		\$8,093,833	

Notes: Actuarially determined contributions are assumed to be paid at the beginning of every quarter.  
Actuarially determined contributions are determined with previous valuations.

## Funding Schedule

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Unfunded Liability	(4) Actuarially Determined Contribution: (2) + (3)	(5) Increase	(6) Payroll	(7) Contributions as a % of Payroll: (4) / (6)	(8) Actuarial Accrued Liability	(9) Actuarial Value of Assets	(10) Total Unfunded Liability: (8) – (9)	(11) Funded Ratio: (9) / (8)
2020	\$900,169	\$3,584,216	\$4,484,385		\$8,021,342	55.91%	\$103,976,616	\$58,545,666	\$45,430,950	56.31%
2021	881,710	4,037,287	4,918,997	9.69%	7,920,788	62.10%	106,456,656	61,024,355	45,432,301	57.32%
2022	852,722	4,028,926	4,881,648	-0.76%	7,796,085	62.62%	108,853,265	64,651,526	44,201,739	59.39%
2023	843,951	4,067,466	4,911,417	0.61%	7,753,190	63.35%	111,201,638	67,801,874	43,399,764	60.97%
2024	829,831	4,111,259	4,941,090	0.60%	7,666,262	64.45%	113,459,739	70,914,246	42,545,493	62.50%
2025	815,981	4,111,259	4,927,240	-0.28%	7,586,638	64.95%	115,605,881	74,471,140	41,134,741	64.42%
2026	757,869	4,111,259	4,869,128	-1.18%	7,343,200	66.31%	117,579,590	77,950,827	39,628,763	66.30%
2027	686,061	4,111,259	4,797,320	-1.47%	7,001,518	68.52%	119,252,430	81,231,299	38,021,131	68.12%
2028	648,367	4,111,259	4,759,626	-0.79%	6,796,164	70.03%	120,655,794	84,350,810	36,304,984	69.91%
2029	599,512	4,111,259	4,710,771	-1.03%	6,554,197	71.87%	121,784,167	87,311,170	34,472,997	71.69%
2030	555,872	4,111,259	4,667,131	-0.93%	6,342,409	73.59%	122,653,263	90,135,912	32,517,351	73.49%
2031	488,817	4,111,259	4,600,076	-1.44%	5,989,626	76.80%	123,185,948	92,756,249	30,429,699	75.30%
2032	466,351	4,111,259	4,577,610	-0.49%	5,877,916	77.88%	123,445,280	95,244,149	28,201,131	77.15%
2033	444,153	4,111,259	4,555,412	-0.48%	5,748,024	79.25%	123,501,168	97,679,034	25,822,134	79.09%
2034	401,443	4,111,259	4,512,702	-0.94%	5,501,689	82.02%	123,296,298	100,013,743	23,282,555	81.12%
2035	364,861	4,111,259	4,476,120	-0.81%	5,313,778	84.24%	122,829,992	102,258,438	20,571,554	83.25%
2036	343,029	4,111,259	4,454,288	-0.49%	5,164,149	86.25%	122,094,543	104,416,982	17,677,561	85.52%
2037	325,495	4,111,259	4,436,754	-0.39%	5,090,180	87.16%	121,145,348	106,557,125	14,588,223	87.96%
2038	314,702	4,111,259	4,425,961	-0.24%	5,037,736	87.86%	119,986,090	108,695,735	11,290,355	90.59%
2039	308,853	4,111,259	4,420,112	-0.13%	5,037,932	87.74%	118,654,559	110,884,678	7,769,881	93.45%
2040	307,295	4,111,259	4,418,554	-0.04%	5,078,260	87.01%	117,187,144	113,175,369	4,011,775	96.58%
2041	306,262	0	306,262	-93.07%	5,130,439	5.97%	115,594,733	115,594,733	0	100.00%
2042	309,238	0	309,238	0.97%	5,210,980	5.93%	113,898,751	113,898,751	0	100.00%

Notes: Fiscal 2020 contribution set at budgeted amount.

Contribution is assumed to be paid at the beginning of each quarter.

Normal cost and payroll are based on a closed group projection, except for School Management and employees eligible for a disability benefit only, for whom normal cost and payroll are projected to increase 2.75% per year.

Schedule reflects deferred investment gains and losses.

Columns (8) through (11) are as of the beginning of the fiscal year.

## Risk

Since the actuarial valuation results are dependent on a given set of assumptions and data as of a specific date, there is a risk that emerging results may differ significantly as actual experience differs from the assumptions.

This report does not contain a detailed analysis of the potential range of future measurements, but does include a brief discussion of some risks that may affect the Plan. We recommend a more detailed assessment of the risks to provide the Town with a better understanding of the risks inherent in the Plan. This assessment may include scenario testing, sensitivity testing, stress testing and stochastic modeling.

➤ Investment Risk (the risk that returns will be different than expected)

The market value rate of return over the last 8 years has ranged from a low of -2.90% to a high of 15.51%.

➤ Longevity Risk (the risk that mortality experience will be different than expected)

The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the actuarially determined contribution.

➤ Contribution Risk (the risk that actual contributions will be different from actuarially determined contribution)

The Plan's funding policy requires payment of the actuarially determined contribution. As long as this policy is adhered to, contribution risk is negligible.

If contributions remain as projected and future experience matches the current assumptions, we project the unfunded actuarial accrued liability will be paid off in 21 years.

➤ Demographic Risk (the risk that employee experience will be different than assumed)

Examples of this risk include:

- Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply.
- More or less active employee turnover than assumed.
- Disability experience different than assumed.
- Salary increases greater or less than projected.

➤ Actual Experience Over the Last 6 years and Implications for the Future

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience.

The investment gain(loss) over the past six years has ranged from a loss of \$3,604,596 to a gain of \$3,561,195. If all investment returns were equal to the assumed return over the last eight years, the market value of assets as of the current valuation date would be approximately \$60,918,983 as opposed to the actual value of \$57,341,324.

The non-investment gain(loss) over the last six years has ranged from a loss of \$1,998,917 to a loss of \$605,122.

The funded percentage on the actuarial value of assets has ranged from a low of 52.1% to a high of 61.5% since 2011.

➤ Maturity Measures

As pension plans mature, the cash need to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities.

Currently the Plan has a non-active to active employee ratio of 1.55. For the prior year benefits paid plus expenses were \$1,081,049 more than contributions received. As the Plan matures, more cash will be needed from the investment portfolio to meet benefit payments.

## Section 3: Supplemental Information

### EXHIBIT A – TABLE OF PLAN COVERAGE

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
<b>Active employees in valuation:</b>			
• Number	133	143	-7.0%
• Average age	45.3	46.5	-1.2
• Average years of service	10.9	11.0	-0.1
• Total compensation	\$7,750,088	\$7,820,129	-0.9%
• Average compensation	58,271	54,686	6.6%
• Employee contributions	4,363,354	4,900,569	-11.0%
<b>Inactive employees with a vested right to a deferred or immediate benefit<sup>1</sup></b>	14	9	55.6%
<b>Retired employees:<sup>2</sup></b>			
• Number in pay status	169	158	7.0%
• Average age	66.7	66.1	0.6
• Average monthly benefit	\$2,532	\$2,552	-0.8%
<b>Disabled employees:</b>			
• Number in pay status	11	9	22.2%
• Average age	55.3	54.6	0.7
• Average monthly benefit	\$3,327	\$3,107	7.1%
<b>Beneficiaries:</b>			
• Number in pay status	12	12	0.0%
• Average age	77.6	76.5	1.1
• Average monthly benefit	\$1,433	\$1,424	0.6%

<sup>1</sup> In addition, there was one inactive employee due a refund of employee contributions in 2018.

<sup>2</sup> Includes 14 alternate payees in pay status in 2019 and 12 in 2018.

**EXHIBIT B – EMPLOYEES IN ACTIVE SERVICE AS OF JUNE 30, 2019  
BY AGE, YEARS OF SERVICE, AND AVERAGE COMPENSATION**

Age	Years of Service							
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34
Under 25	6	6	--	--	--	--	--	--
	\$53,204	\$53,204	--	--	--	--	--	--
25 - 29	17	12	5	--	--	--	--	--
	\$61,689	\$56,771	\$73,493	--	--	--	--	--
30 - 34	12	5	4	3	--	--	--	--
	\$64,510	\$57,879	\$65,295	\$74,517	--	--	--	--
35 - 39	10	2	1	7	--	--	--	--
	\$69,173	\$64,266	\$68,017	\$70,740	--	--	--	--
40 - 44	12	--	3	8	1	--	--	--
	\$69,791	--	\$74,636	\$67,707	\$71,934	--	--	--
45 - 49	25	1	8	5	10	1	--	--
	\$63,336	\$53,293	\$45,831	\$71,973	\$69,738	\$106,214	--	--
50 - 54	22	2	5	7	7	1	--	--
	\$50,675	\$57,281	\$36,268	\$57,466	\$50,542	\$62,902	--	--
55 - 59	14	1	4	7	--	2	--	--
	\$40,711	\$53,320	\$44,740	\$30,027	--	\$63,744	--	--
60 - 64	9	--	2	1	1	3	1	1
	\$56,237	--	\$78,479	\$46,500	\$27,021	\$59,393	\$52,794	\$44,684
65 - 69	6	--	--	3	2	--	1	--
	\$50,742	--	--	\$56,009	\$36,760	--	\$62,902	--
Total	133	29	32	41	21	7	2	1
	\$58,271	\$56,537	\$56,390	\$59,888	\$58,269	\$67,826	\$57,848	\$44,684

## EXHIBIT C – SUMMARY STATEMENT OF INCOME AND EXPENSES ON A MARKET VALUE BASIS

	Year Ended June 30, 2019	Year Ended June 30, 2018
Net assets at market value at the beginning of the year	\$56,716,068	\$52,916,280
<b>Contribution income:</b>		
• Employer contributions	\$4,324,436	\$4,322,591
• Employee contributions	271,175	301,399
• Less administrative expenses	<u>-36,000</u>	<u>-46,104</u>
Net contribution income	4,559,611	4,577,886
<b>Net investment income</b>	1,706,305	3,897,741
<b>Total income available for benefits</b>	<b>\$6,265,916</b>	<b>\$8,475,627</b>
<b>Less benefit payments</b>	<b>-\$5,640,660</b>	<b>-\$4,675,839</b>
<b>Change in reserve for future benefits</b>	<b>\$625,256</b>	<b>\$3,799,788</b>
<b>Net assets at market value at the end of the year</b>	<b>\$57,341,324</b>	<b>\$56,716,068</b>

## EXHIBIT D – DEPARTMENT RESULTS AS OF JULY 1, 2019

	School	Fire	Police	Public Works	Town	Total
1 Demographics						
• Active employees in valuation	43	33	34	16	7	133
• Inactive employees	8	0	2	1	3	14
• Retired employees and beneficiaries in pay status	<u>64</u>	<u>45</u>	<u>48</u>	<u>13</u>	<u>22</u>	<u>192</u>
• Total	115	78	84	30	32	339
2 Total normal cost	\$191,224	\$366,652	\$421,258	\$35,805	\$76,535	1,091,474
3 Administrative expenses	6,570	12,597	14,473	1,230	2,630	37,500
4 Expected employee contributions	<u>-75,633</u>	<u>-62,293</u>	<u>-100,824</u>	<u>0</u>	<u>-11,837</u>	<u>-250,587</u>
5 Employer normal cost: (2) + (3) + (4)	\$122,161	\$316,956	\$334,907	\$37,035	\$67,328	\$878,387
6 Employer normal cost, adjusted for timing	125,190	324,816	343,212	37,953	68,998	900,169
7 Employer normal cost as a percentage of compensation	6.91%	13.68%	13.84%	3.85%	12.13%	10.95%
8 Actuarial accrued liability	\$14,433,307	\$34,079,497	\$38,216,351	\$3,916,905	\$13,330,556	\$103,976,616
9 Actuarial value of assets	<u>8,126,900</u>	<u>19,188,996</u>	<u>21,518,316</u>	<u>2,205,475</u>	<u>7,505,979</u>	<u>58,545,666</u>
10 Unfunded actuarial accrued liability: (8) - (9)	\$6,306,407	\$14,890,501	\$16,698,035	\$1,711,430	\$5,824,577	\$45,430,950
11 Payment on unfunded actuarial accrued liability, adjusted for timing	511,497	1,177,200	1,288,188	133,151	474,180	3,584,216
12 Actuarially determined contribution for fiscal year 2020: (6) + (11)	636,687	1,502,016	1,631,400	171,104	543,178	4,484,385
13 Actuarially determined contribution as a percentage of projected compensation	36.00%	64.85%	67.42%	17.79%	97.87%	55.91%
14 Projected compensation	\$1,768,489	\$2,316,187	\$2,419,682	\$961,986	\$554,998	\$8,021,342
15 Actuarially determined contribution for fiscal year 2021	682,159	1,650,347	1,832,388	190,982	563,121	4,918,997
16 Actuarially determined contribution for fiscal year 2022	677,093	1,651,394	1,809,376	190,995	552,790	4,881,648
17 Actuarially determined contribution for fiscal year 2023	678,234	1,657,864	1,828,173	192,801	554,345	4,911,417



## EXHIBIT E – DEFINITIONS OF PENSION TERMS

The following list defines certain technical terms for the convenience of the reader:

<b>Actuarial Accrued Liability for Actives:</b>	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
<b>Actuarial Accrued Liability for Pensioners and Beneficiaries:</b>	The single-sum value of lifetime benefits to existing pensioners and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
<b>Actuarial Cost Method:</b>	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
<b>Actuarial Gain or Loss:</b>	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
<b>Actuarially Equivalent:</b>	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
<b>Actuarial Present Value (APV):</b>	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

<b>Actuarial Present Value of Future Plan Benefits:</b>	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
<b>Actuarial Valuation:</b>	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).
<b>Actuarial Value of Assets (AVA):</b>	The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.
<b>Actuarially Determined:</b>	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
<b>Actuarially Determined Contribution (ADC):</b>	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
<b>Amortization Method:</b>	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
<b>Amortization Payment:</b>	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.
<b>Assumptions or Actuarial Assumptions:</b>	The estimates upon which the cost of the Fund is calculated, including: <u>Investment return</u> - the rate of investment yield that the Fund will earn over the long-term future; <u>Mortality rates</u> - the death rates of employees and pensioners; life expectancy is based on these rates; <u>Retirement rates</u> - the rate or probability of retirement at a given age or service; <u>Disability rates</u> - the probability of disability retirement at a given age; <u>Withdrawal rates</u> - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; <u>Salary increase rates</u> - the rates of salary increase due to inflation and productivity growth.

<b>Closed Amortization Period:</b>	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.
<b>Decrements:</b>	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
<b>Defined Benefit Plan:</b>	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
<b>Defined Contribution Plan:</b>	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
<b>Employer Normal Cost:</b>	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
<b>Experience Study:</b>	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
<b>Funded Ratio:</b>	The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.
<b>GASB 67 and GASB 68:</b>	Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
<b>Investment Return:</b>	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
<b>Net Pension Liability (NPL):</b>	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
<b>Normal Cost:</b>	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.

<b>Open Amortization Period:</b>	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period with level percentage of payroll is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never decrease, but will become smaller each year, in relation to covered payroll, if the actuarial assumptions are realized.
<b>Plan Fiduciary Net Position:</b>	Market value of assets.
<b>Total Pension Liability (TPL):</b>	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
<b>Unfunded Actuarial Accrued Liability:</b>	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.
<b>Valuation Date or Actuarial Valuation Date:</b>	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

## Section 4: Actuarial Valuation Basis

### EXHIBIT I – ACTUARIAL ASSUMPTIONS AND ACTUARIAL COST METHOD

<b>Net Investment Return:</b>	6.75%. The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as provided by Segal Marco Advisors, as well as the Plan's target asset allocation.
<b>Salary Increases:</b>	3.5% per year. The salary increase assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgement.
<b>Payroll Growth:</b>	Based on a closed group projection, except for School Management and employees eligible for a disability benefit only, for whom total payroll is projection to increase 2.75% per year.
<b>Interest on Employee Contributions:</b>	5.0%
<b>Administrative Expenses:</b>	\$37,500 (previously, \$40,000) The administrative expense assumption is based on information on expected expenses provided by the staff of the Town of Portsmouth, RI.
<b>Defined Contribution Account Balance:</b>	Balances as of July 1, 2019 were provided by the Town of Portsmouth, RI and were assumed to earn 6.75% annually. Balances were converted to monthly benefits using valuation interest and mortality assumptions.
<b>Cost-of-Living Adjustments:</b>	Cost-of-living increases for pensioners whose COLAs were based on 50% of the percentage salary increase received the previous July 1 by the active bargaining unit from which the employee retired or whose COLAs were based on the annual CPI adjustment are assumed to be 2% annually. Cost-of-living increases for all other pensioners were provided by the Town of Portsmouth, RI.

**Mortality Rates:**

*Pre-Retirement:* RP-2006 White Collar Employee Mortality Table projected generationally using Scale MP-2019 (previously, RP-2006 Employee Mortality Table projected generationally using Scale SSA-2014 2D)

*Healthy Retiree:* RP-2006 White Collar Healthy Annuitant Mortality Table projected generationally using Scale MP-2019 (previously, RP-2006 Healthy Annuitant Mortality Table projected generationally using Scale SSA-2014 2D)

*Disabled Retiree:* RP-2006 White Collar Healthy Annuitant Mortality Table set forward 5 years and projected generationally using Scale MP-2019 (previously, RP-2006 Healthy Annuitant Mortality Table set forward 5 years and projected generationally using Scale SSA-2014 2D)

The underlying tables with generational projection to the ages of employees as of the measurement date reasonably reflect the mortality experience of the Plan as of the measurement date.

The mortality rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of deaths by age and the projected number based on the prior year's assumption over the most recent five years. These mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

**Termination Rates before Retirement:**

Fire and Police Rate (%)								
Mortality <sup>1</sup>								
Age	Current		Previous		Disability <sup>2</sup>		Withdrawal	
	Male	Female	Male	Female	Male	Female	Male	Female
20	0.04	0.02	0.05	0.02	0.09	0.05	9.87	14.87
25	0.04	0.02	0.05	0.02	0.13	0.09	6.87	9.87
30	0.03	0.02	0.05	0.02	0.18	0.15	4.87	6.87
35	0.04	0.03	0.06	0.03	0.25	0.23	3.87	4.87
40	0.05	0.04	0.08	0.05	0.35	0.27	2.65	3.65
45	0.08	0.06	0.12	0.08	0.47	0.44	1.50	2.50
50	0.14	0.10	0.20	0.12	0.68	0.66	0.16	1.16
55	0.21	0.15	0.30	0.17	1.14	1.06	--	--
60	0.35	0.24	0.50	0.28	1.72	1.23	--	--

School, Public Works and Town Rate (%)								
Mortality <sup>1</sup>								
Age	Current		Previous		Disability <sup>2</sup>		Withdrawal	
	Male	Female	Male	Female	Male	Female	Male	Female
20	0.04	0.02	0.05	0.02	0.01	0.02	9.92	14.92
25	0.04	0.02	0.05	0.02	0.02	0.02	6.92	9.92
30	0.03	0.02	0.05	0.02	0.02	0.04	4.92	6.92
35	0.04	0.03	0.06	0.03	0.03	0.07	3.92	4.92
40	0.05	0.04	0.08	0.05	0.06	0.11	2.78	3.78
45	0.08	0.06	0.12	0.08	0.10	0.16	1.69	2.69
50	0.14	0.10	0.20	0.12	0.18	0.27	0.47	1.47
55	0.21	0.15	0.30	0.17	0.36	0.48	0.08	0.08
60	0.35	0.24	0.50	0.28	0.63	0.58	--	--

The withdrawal rates and disability rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of withdrawals and disability retirements by age and the projected number based on the prior year's assumption over the most recent five years.

<sup>1</sup> Mortality rates do not reflect generational projection.

<sup>2</sup> 100% of the disability rates shown represent accidental disability.

Retirement Rates:	Rate (%)				
	Service	Police		Fire	
		Current	Previous	Current	Previous
	20	60.0	50.0	60.0	30.0
	21	15.0	15.0	10.0	10.0
	22	5.0	5.0	10.0	10.0
	23	5.0	5.0	10.0	10.0
	24	5.0	5.0	10.0	10.0
	25	50.0	50.0	10.0	10.0
	26	50.0	50.0	10.0	10.0
	27	50.0	50.0	30.0	30.0
	28	50.0	50.0	30.0	30.0
	29	50.0	50.0	30.0	30.0
	30	100.0	100.0	100.0	100.0



	Rate (%)			
	Age	School	Town Management/ Public Works	Town Non-Management
	55	2.0	5.0	--
	56	2.0	5.0	--
	57	2.0	5.0	--
	58	2.0	5.0	--
	59	2.0	5.0	--
	60	30.0	10.0	10.0
	61	5.0	10.0	10.0
	62	35.0	15.0	15.0
	63	35.0	15.0	15.0
	64	10.0	15.0	15.0
	65	10.0	50.0	50.0
	66	10.0	50.0	50.0
	67	10.0	100.0	100.0
	68	30.0	--	--
	69	30.0	--	--
	70	100.0	--	--
	The retirement rates were based on historical and current demographic data, adjusted to reflect economic conditions of the area and estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of retirements and the projected number based on the prior year's assumption over the most recent five years.			
<b>Retirement Rates for Inactive Vested Participants:</b>	Normal Retirement Age The retirement age for inactive vested participants was based on historical and current demographic data, adjusted to reflect economic conditions of the area and estimated future experience and professional judgment.			
<b>Unknown Data for Participants:</b>	Same as those exhibited by employees with similar known characteristics.			
<b>Family Composition:</b>	85% of participants are assumed to be married. None are assumed to have dependent children. Females are assumed to be three years younger than their male spouses.			
<b>Benefit Election:</b>	Monthly life annuity for School, Public Works and Town. 67.5% Joint and Survivor annuity for married Police and Fire, in accordance with Section 45-21.3-1, General Laws of Rhode Island (1956).			

<b>2018 – 2019 Salary:</b>	Salaries for benefits and contributions were provided by the Town of Portsmouth, RI.
<b>Actuarial Value of Assets:</b>	Market value of assets as reported by the Town of Portsmouth, RI less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
<b>Actuarial Cost Method:</b>	Entry Age Actuarial Cost Method. Entry Age is the age at date of hire. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary, with Normal Cost determined using the plan of benefits applicable to each participant.
<b>Justification for Change in Actuarial Assumptions:</b>	<p>Based on past experience and future expectations, the following actuarial assumptions were changed as of July 1, 2019:</p> <ul style="list-style-type: none"> <li>• The retirement rate for employees with 20 years of service was increased from 50% to 60% for employees of the Police department and from 30% to 60% for employees of the Fire department.</li> <li>• The administrative expense assumption was decreased from \$40,000 to \$37,500 for the year beginning July 1, 2019.</li> <li>• For healthy and disabled employees, the mortality tables were changed from the RP-2006 Employee and Healthy Annuitant Mortality Tables to the RP-2006 White Collar Employee and Healthy Annuitant Mortality Tables, and the projection scale for future mortality improvement applied to the mortality tables was updated from the SSA-2014 2D scale to the MP-2019 scale.</li> </ul>

## EXHIBIT II – SUMMARY OF PLAN PROVISIONS

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

<b>Plan Year:</b>	<ul style="list-style-type: none"> <li>• Effective July 1, 2006: July 1 through June 30</li> <li>• Prior to July 1, 2006: January 1 through December 31</li> </ul>
<b>Plan Status:</b>	<ul style="list-style-type: none"> <li>• <i>Police</i>: Closed (with the exception of disability benefits)</li> <li>• <i>Fire</i>: Closed (with the exception of disability benefits)</li> <li>• <i>School Non-Management</i>: Closed</li> <li>• <i>School Management</i>: Ongoing</li> <li>• <i>Town</i>: Closed</li> <li>• <i>Public Works</i>: Closed (with the exception of disability benefits)</li> </ul>

### POLICE

<b>Normal Retirement Benefit:</b>	<ul style="list-style-type: none"> <li>• <i>Service Requirement</i>: 20 years of credited service</li> <li>• <i>Amount</i>: 60% of average monthly earnings plus 2% for each year beyond 20 years subject to a maximum of 70%.</li> <li>• An employee's average monthly earnings are defined as the highest gross annual salary during the last three years of employment. Gross annual salary includes base salary and longevity, but excludes overtime, clothing allowance, holiday pay and any other forms of compensation.</li> <li>• Employees hired on or after July 1, 2010 are not entitled to Normal Retirement Benefits.</li> </ul>
<b>Accidental Disability:</b>	<ul style="list-style-type: none"> <li>• <i>Service Requirement</i>: None.</li> <li>• <i>Amount</i>: 67% of gross annual salary. For employees hired on or after July 1, 2010, this benefit will be offset by the actuarially equivalent benefit provided by the account balance from the defined contribution plan.</li> </ul>
<b>Ordinary Disability:</b>	<ul style="list-style-type: none"> <li>• <i>Service Requirement</i>: 10 years of credited service</li> <li>• <i>Amount</i>: 50% of highest consecutive two years average salary. For employees hired on or after July 1, 2010, this benefit is payable until Normal Retirement Date at which time the participant would begin taking distributions exclusively from the 401(a) plan.</li> </ul>
<b>Deferred Vested Benefit:</b>	<ul style="list-style-type: none"> <li>• <i>Service Requirement</i>: 10 years of credited service</li> <li>• <i>Amount</i>: Normal Retirement Benefit payable at Normal Retirement Date, prorated if less than 20 years of service</li> </ul>

<b>Spouse's Pre-Retirement Death Benefit:</b>	<ul style="list-style-type: none"> <li>• <i>Service Requirement:</i> 10 years of credited service</li> <li>• <i>Amount:</i> 30% of final five-year average earnings payable to the spouse plus 10% of final five-year average earnings payable to each minor child under age 21. The maximum benefit payable is 50% of final five-year average earnings. Employees hired on or after July 1, 2010 are not entitled to pre-retirement death benefits.</li> </ul>
<b>Cost of Living Adjustments:</b>	<ul style="list-style-type: none"> <li>• Employees who retired on or after July 1, 2003 with 20 years of credited service receive a 3% COLA commencing on the January 1st following the first anniversary of retirement. Employees who retired prior to July 1, 2003 receive a COLA based on 50% of the percentage salary increase received the previous July 1 by the active bargaining unit employees in the department from which the employee retired.</li> <li>• Effective July 1, 2010, employees who retire on or after July 1, 2013 with 20 years of credited service or become disabled receive a 3% COLA commencing on the January 1st following the second year of retirement.</li> <li>• There is no COLA on a Deferred Vested Benefit or a Pre-Retirement Death Benefit.</li> </ul>
<b>Employee Contributions:</b>	<ul style="list-style-type: none"> <li>• 9.0% of gross annual earnings.</li> <li>• No contributions for employees hired on or after July 1, 2010.</li> </ul>
<b>Normal Form of Payment:</b>	Benefits will continue to the surviving spouse and dependent children of a deceased retired police officer in accordance with Section 45-21.3-1, General Laws of Rhode Island (1956). The surviving spouse will receive 67.5% of the participant's benefit until death or remarriage in which case dependent children will receive the benefit until age 18. On death, if there is no spousal benefit due, the estate will receive a refund of participant contributions in excess of any retirement payments received.
<b>Credited Service:</b>	Full years plus fractions thereof from date of hire to date of termination.
<b>Changes in Plan Provisions:</b>	There were no changes in plan provisions reflected in this valuation.

## FIRE

### Normal Retirement Benefit:

- *Service Requirement:* 20 years of credited service
- *Amount:*
  - For service before July 1, 2013: 3% of average monthly earnings per year of credited service to a maximum of 20 years plus 2% for each year beyond 20 years.
  - For service on or after July 1, 2013 and before June 30, 2016: 1% of average monthly earnings per year of credited service.
  - For service on or after July 1, 2016: 2% of average monthly earnings per year of credited service.
  - Fire Deputy and Fire Chief: 3% of average monthly earnings per year of credited service to a maximum of 20 years plus 2% for each year beyond 20 years.
  - The maximum benefit is 74% of average monthly earnings.
  - An employee's average monthly earnings are defined as the highest gross annual salary during the last three years of employment. Gross annual salary includes base salary, longevity and EMT bonus, but excludes overtime, clothing allowance, holiday pay and any other forms of compensation.

Employees hired on or after July 1, 2013 are not entitled to Normal Retirement Benefits.

### Accidental Disability:

- *Service Requirement:* None
- *Amount:* 66 ⅔% of gross annual salary. For employees hired on or after July 1, 2013, this benefit will be offset by the actuarially equivalent benefit provided by the account balance from the defined contribution plan.

### Ordinary Disability:

- *Service Requirement:* 10 years of credited service
- *Amount:* 50% of highest consecutive three years average salary. For employees hired on or after July 1, 2013, this benefit is payable until Normal Retirement Date at which time the participant would begin taking distributions exclusively from the 401(a) plan.

### Deferred Vested Benefit:

- *Service Requirement:* 10 years of credited service
- *Amount:* Normal Retirement Benefit payable at Normal Retirement Date, prorated if less than 20 years of service.

### Spouse's Pre-Retirement Death Benefit:

- *Service Requirement:* 10 years of credited service
- *Amount:* 30% of final five-year average earnings payable to the spouse plus 10% of final five-year average earnings payable to each minor child under age 21. The maximum benefit payable is 50% of final five-year average earnings. Employees hired on or after July 1, 2013 are not entitled to pre-retirement death benefits.

<b>Cost of Living Adjustments:</b>	<ul style="list-style-type: none"> <li>• Employees who retired prior to July 1, 2007 receive a COLA based on 50% of the percentage salary increase received the previous July 1 by the active bargaining unit employees in the department from which the employee retired.</li> <li>• Employees who retired on or after July 1, 2007 and before July 1, 2013 with 20 years of credited service receive a 3% COLA commencing on the January 1st immediately following the participant's retirement.</li> <li>• Employees who retire under a Fire Service disability incurred after July 1, 2010 will receive a 1.7% COLA commencing on the January 1<sup>st</sup> immediately following the fifth anniversary of retirement.</li> <li>• Employees who retire on or after July 1, 2013 with 20 years of credited service receive a 1.7% non-compounding COLA commencing on the January 1st following the fifth anniversary of retirement.</li> <li>• Fire Chiefs receive a 3% COLA commencing on the January 1st following the fifth year of retirement, regardless of date of retirement.</li> <li>• Employees who retired prior to July 1, 2016 under Accidental Disability receive a 3% compounding COLA commencing on the January 1st immediately following the participant's retirement.</li> <li>• Employees who retire on or after July 1, 2016 under Accidental Disability receive a 3% non-compounding COLA commencing on the January 1st immediately following the participant's retirement.</li> <li>• There is no COLA on a Deferred Vested Benefit or a Pre-Retirement Death Benefit.</li> </ul>
<b>Employee Contributions:</b>	<ul style="list-style-type: none"> <li>• 4.0% of gross annual earnings inclusive of base salary, longevity, EMT bonus and holiday pay.</li> <li>• Fire Deputy and Fire Chief: 10.0% of gross annual earnings inclusive of base salary, longevity, EMT bonus and holiday pay.</li> <li>• No contributions for employees hired on or after July 1, 2013.</li> </ul>
<b>Normal Form of Payment:</b>	<p>Benefits will continue to the surviving spouse and dependent children of a deceased retired firefighter in accordance with Section 45-21.3-1, General Laws of Rhode Island (1956). The surviving spouse will receive 67.5% of the participant's benefit until death or remarriage in which case dependent children will receive the benefit until age 18. On death, if there is no spousal benefit due, the estate will receive a refund of participant contributions in excess of any retirement payments received.</p>
<b>Credited Service:</b>	<p>Full years plus fractions thereof from date of hire to date of termination.</p>
<b>Changes in Plan Provisions:</b>	<p>There were no changes in plan provisions.</p>

## SCHOOL

### Normal Retirement Benefit:

- *Age and Service Requirement:* Age 60 with 10 years of credited service
- *Amount:*
  - Non-Certified:
    - » For service before October 1, 2013: 2.5% of average monthly earnings per year of credited service.
    - » For service on or after October 1, 2013: 1% of average monthly earnings per year of credited service.
    - » Benefit is reduced prorata if less than 20 years of service.
    - » Non-certified employees hired after July 1, 2012 and before October 1, 2013 were transferred to the defined contribution plan effective October 1, 2013.
  - Management: 2.5% of average monthly earnings per year of credited service. Benefit is reduced prorata for less than 20 years of service.
  - An employee's average monthly earnings are defined as base annual salary and longevity pay averaged over the final three years of employment.

School Department employees who are not School Management, who are hired on or after October 1, 2013 are not eligible to participate in this Plan.

### Early Retirement Benefit:

- *Age and Service Requirement:* Age 55 with 20 years of credited service
- *Amount:* Normal Retirement Benefit multiplied by the ratio of credited service as of the Early Retirement Date to the number of years the employee would have completed if he or she remained employed until Normal Retirement Date.

### Ordinary Disability:

- *Service Requirement:* 10 years of credited service
- *Amount:* Accrued benefit as of the date of disability multiplied by the ratio of credited service as of the date of disability to the number of years the employee would have completed if he or she remained employed until Normal Retirement Date, with payments ceasing upon the Employee's attainment of Normal or Early Retirement Date.

### Deferred Vested Benefit:

- *Service Requirement:* 10 years of credited service
- *Amount:* Normal Retirement Benefit payable at Normal Retirement Date, prorated if less than 20 years of service.

### Spouse's Pre-Retirement Death Benefit:

- *Service Requirement:* 10 years of credited service
- *Amount:* 100% Joint and Survivor benefit is payable to the spouse upon the death of the employee, prorated if less than 20 years and reduced for early retirement and payable no earlier than when the employee would be eligible to retire.

<b>Cost of Living Adjustments:</b>	<ul style="list-style-type: none"> <li>• Non-certified: Effective July 1, 2002, employees who retire at age 55 with 20 years of credited service shall receive a 1.7% COLA beginning on the first anniversary of retirement. For retirements on or after October 1, 2013, the COLA commences on the fifth anniversary of retirement.</li> <li>• Management: Effective January 1, 2001 employees who retire at age 55 with 25 years of credited service or age 60 with 20 years of credited service shall receive a 1.7% COLA beginning on the first anniversary of retirement.</li> <li>• There is no COLA on a Deferred Vested Benefit, an Ordinary Disability Benefit, or a Pre-Retirement Death Benefit.</li> </ul>
<b>Employee Contributions:</b>	<ul style="list-style-type: none"> <li>• Non-Certified: 4% of gross annual salary.</li> <li>• Management: 6% of gross annual salary.</li> </ul>
<b>Normal Form of Payment:</b>	Life annuity payable monthly.
<b>Credited Service:</b>	Full years plus fractions thereof from date of hire to date of termination.
<b>Changes in Plan Provisions:</b>	There were no changes in plan provisions reflected in this valuation.



## TOWN

### Normal Retirement Benefit:

- *Age and Service Requirement:* Age 60 with 10 years of credited service
- *Amount:*
  - Non-Management:
    - » For service before July 1, 2013: 2.5% of average monthly earnings per year of credited service to a maximum of 27 years.
    - » For service on or after July 1, 2013 and before July 1, 2016: 1% of average monthly earnings per year of credited service.
    - » For service on or after July 1, 2016: 2% of average monthly earnings per year of credited service.
    - » The maximum benefit is 67.5% of average monthly earnings.
    - » Benefit is reduced prorata if less than 20 years of service.
  - Management: 3.0% of average monthly earnings per year of credited service for up to 20 years of service, plus 2.0% of average monthly earnings per year of credited service to a maximum of 74%. For benefit accrual purposes, credited service is frozen as of July 1, 2014.
  - An employee's monthly earnings are defined as the highest annual salary (base salary and longevity) during the final three years of employment.

Town Hall employees hired on or after July 1, 2012 are not eligible to participate in this Plan.

### Early Retirement Benefit:

- *Age and Service Requirement:* Management: Age 55 with 25 years of credited service
- *Amount:* Management: Normal Retirement Benefit multiplied by the ratio of credited service as of the Early Retirement Date to the number of years the employee would have completed if he or she remained employed until Normal Retirement Date.

There is no Early Retirement Benefit for Non-Management employees.

### Ordinary Disability:

- *Service Requirement:* 10 years of credited service
- *Amount:* Accrued benefit as of the date of disability multiplied by the ratio of credited service as of the date of disability to the number of years the employee would have completed if he or she remained employed until Normal Retirement Date, with payments ceasing upon the Employee's attainment of Normal or Early Retirement Date.

### Deferred Vested Benefit:

- *Service Requirement:* 10 years of credited service
- *Amount:* Normal Retirement Benefit payable at Normal Retirement Date, prorated if less than 20 years of service.

**Spouse's Pre-Retirement Death Benefit:**

- *Service Requirement:* 10 years of credited service
- *Amount:* 30% of final five-year average earnings payable to the spouse plus 10% of final five-year average earnings payable to each minor child under 21. The maximum benefit payable is 50% of final five-year average earnings.

**Cost of Living Adjustments:**

- *Non-Management:* Employees who are members of PMEA and who retire on or after July 1, 1998 at age 60 with 20 years of credited service receive a 2.0% COLA with a two-year waiting period from date of retirement. Effective July 1, 2003, the COLA commences the January 1st immediately following retirement. Effective July 1, 2005 employees retiring at or after age 60 with at least 20 years of credited service shall receive a cost of living adjustment of the annual Consumer Price Index (CPI-U, U.S. city average established on December 31 of the preceding year), but shall be not less than 2% or more than 3%, annually commencing on the first anniversary of retirement. For retirements on or after July 1, 2013, the COLA is 1.7% and commences on the fifth anniversary of retirement. Effective July 1, 2016, for employees retiring at or after age 60 with 25 years of credited service, the COLA commences on the earlier of age 65 or the second anniversary of retirement.
- *Management:* Employees who retire on or after July 1, 2002 at age 60 with 20 years of credited service or age 55 with 25 years of service receive a 2.0% COLA with a one-year waiting period from date of retirement. Employees who retire on or after July 1, 2004 receive a 3.0% COLA commencing on the January 1st following the first anniversary of retirement. For retirements on or after July 1, 2013, the COLA is 1.7% commencing on the January 1st following the fifth anniversary of retirement.
- There is no COLA on a Deferred Vested Benefit, an Ordinary Disability Benefit, or a Pre-Retirement Death Benefit.

**Employee Contributions:**

- Non-Management: Effective July 1, 2016, 5% of base salary.
- Management: No employee contributions after July 1, 2014.

**Normal Form of Payment:**

Life annuity payable monthly.

**Credited Service:**

Full years plus fractions thereof from date of hire to date of termination.

**Changes in Plan Provisions:**

There were no changes in plan provisions reflected in this valuation.

## PUBLIC WORKS

<b>Normal Retirement Benefit:</b>	<ul style="list-style-type: none"> <li>• <i>Age and Service Requirement:</i> Age 60 with 10 years of credited service</li> <li>• <i>Amount:</i> <ul style="list-style-type: none"> <li>– For employees with less than 10 years of credited service at July 1, 2013 who were hired before June 30, 2010: 2.5% of average monthly earnings per year of credited service up to a maximum of 25%. Benefit is reduced prorata if less than 20 years of service.</li> <li>– For employees with 10 or more years of service as of June 30, 2013: 2.5% of average monthly earnings per year of credited service prior to July 1, 2013 to a maximum of 67.5%. Benefit is reduced prorata if less than 20 years of service.</li> <li>– An employee's average monthly earnings are defined as annual salary (base salary and longevity) averaged over the final five years of employment.</li> </ul> </li> </ul> <p>Employees hired on or after July 1, 2010 are not entitled to Normal Retirement Benefits.</p>
<b>Ordinary Disability:</b>	<ul style="list-style-type: none"> <li>• <i>Service Requirement:</i> 10 years of credited service</li> <li>• <i>Amount:</i> Accrued benefit as of the date of disability multiplied by the ratio of credited service as of the date of disability to the number of years the employee would have completed if he or she remained employed until Normal Retirement Date, with payments ceasing upon the Employee's attainment of Normal or Early Retirement Date. For employees hired on or after July 1, 2013, this benefit will be offset by the actuarially equivalent benefit provided by the account balance for the defined contribution plan.</li> </ul>
<b>Deferred Vested Benefit:</b>	<ul style="list-style-type: none"> <li>• <i>Service Requirement:</i> 10 years of credited service</li> <li>• <i>Amount:</i> Normal Retirement Benefit payable at Normal Retirement Date, prorated if less than 20 years of service.</li> </ul>
<b>Spouse's Pre-Retirement Death Benefit:</b>	<ul style="list-style-type: none"> <li>• <i>Service Requirement:</i> 10 years of credited service</li> <li>• <i>Amount:</i> 30% of final five-year average earnings payable to the spouse plus 10% of final five-year average earnings payable to each minor child under 21. The maximum benefit payable is 50% of final five-year average earnings. Employees hired on or after July 1, 2010 are not entitled to pre-retirement death benefits.</li> </ul>
<b>Cost of Living Adjustments:</b>	<ul style="list-style-type: none"> <li>• Employees who retire on or after July 1, 1987 at age 60 with 20 years of credited service shall receive 50% of the percentage salary increase received the previous July 1 by the active bargaining unit employees in the department from which the employee retired. There is a two-year waiting period commencing on the January 1 following date of retirement. Employees who retire on or after July 1, 2013 at age 60 with 10 years of service receive a 1.7% COLA commencing on the sixth anniversary of retirement.</li> <li>• There is no COLA on a Deferred Vested Benefit, an Ordinary Disability Benefit, or a Pre-Retirement Death Benefit.</li> </ul>
<b>Employee Contributions:</b>	No employee contributions after July 1, 2013.

<b>Normal Form of Payment:</b>	Life annuity payable monthly.
<b>Credited Service:</b>	Full years plus fractions thereof from date of hire to date of termination.
<b>Changes in Plan Provisions:</b>	There were no changes in plan provisions reflected in this valuation.