

City of Trenton
Retiree Health Care Plan
Actuarial Valuation Report
As of June 30, 2018



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May 14, 2019

Ms. Karen Sall
City Controller/Deputy City Administrator
City of Trenton
2800 Third Street
Trenton, Michigan 48183

**Re: City of Trenton Retiree Health Care Plan Actuarial Valuation as of June 30, 2018
Actuarial Disclosures**

Dear Ms. Sall:

The results of the June 30, 2018 Actuarial Valuation of the City of Trenton Retiree Health Care Plan are presented in this report.

This report was prepared at the request of the City and is intended for use by the City and those designated or approved by the City. This report may be provided to parties other than the City only in its entirety and only with the permission of the City. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are to measure the System's funding progress and to determine the Actuarially Computed Employer Contributions for the fiscal years ending June 30, 2020 and June 30, 2021. This report should not be relied on for any purpose other than the purposes described herein. Determinations of the liability associated with the benefits described in this report for purposes other than those identified above may be significantly different. This report does not satisfy Governmental Accounting Standards Board (GASB) Statements No. 74 or No. 75.

The contributions in this report are determined using the actuarial assumptions and methods disclosed in Section E of this report. Additional assessment of risks was outside the scope of this assignment.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

Ms. Karen Sall
May 14, 2019
Page 2

The findings in this report are based on data and other information through June 30, 2018. 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 or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

The valuation was based upon information furnished by the City of Trenton, concerning retiree health benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City of Trenton.

This report was prepared using assumptions adopted by the City of Trenton. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. Additional information about the actuarial assumptions is included in the section of this report entitled Actuarial Cost Method and Assumptions.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement health plans. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the City of Trenton Retiree Health Care Plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

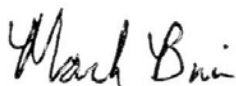
Mark Buis and Laura Frankowiak are Members of the American Academy of Actuaries (MAAA). These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.


Gabriel, Roeder, Smith & Company will be pleased to review this valuation and report with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY



Mark Buis, FSA, EA, FCA, MAAA



Laura Frankowiak, ASA, FCA, MAAA

MB/LF:bd

EXECUTIVE SUMMARY

Executive Summary

Actuarially Computed Employer Contribution

Please note that beginning with the fiscal year ending June 30, 2017, GASB Statement No. 43 was replaced by GASB Statement No. 74. Also, beginning with the fiscal year ending June 30, 2018, GASB Statement No. 45 was replaced by GASB Statement No. 75. Separate GASB reports will be required to comply with the actuarial requirements of GASB Statement No. 74 and GASB Statement No. 75. As such, there will no longer be an “Annual Required Contribution” calculated in the valuation reports. Therefore, we have determined the “Actuarially Computed Employer Contribution” for subsequent years.

We have calculated the Actuarially Computed Employer Contribution for the fiscal years ending June 30, 2020 and June 30, 2021 under the interest rate assumption of 6.00%. Below is a summary of the results.

Fiscal Year Ending	Actuarially Computed Employer Contribution	Estimated Premiums/Claims Paid for Retirees
June 30, 2020	\$5,527,783	\$3,022,901
June 30, 2021	5,498,513	3,188,694

For additional details please see the Section titled “Valuation Results.”

Liabilities and Assets – as of June 30, 2018

1. Present Value of Future Benefit Payments	\$69,208,578
2. Actuarial Accrued Liability	62,237,754
3. Plan Assets	10,336,899
4. Unfunded Actuarial Accrued Liability (2) – (3)	51,900,855
5. Funded Ratio (3)/(2)	16.6%

The Present Value of Future Benefit Payments (PVFB) is the present value of all benefits projected to be paid from the plan for past and future service to current members. The Actuarial Accrued Liability is the portion of the PVFB allocated to past service by the Plan’s funding method (see the Section titled “Actuarial Cost Method and Actuarial Assumptions”).

SECTION A

VALUATION RESULTS

City of Trenton – Results by Division as of June 30, 2018

	TPOAM	Non-Union	Water/WWTP	Fire	Police	Total
A. Present Value of Future Benefits						
i) Retirees and Beneficiaries	\$9,116,857	\$5,549,136	\$ 6,242,238	\$12,189,902	\$13,381,306	\$ 46,479,439
ii) Vested Terminated Members	0	0	0	0	0	0
iii) Active Members	<u>2,411,470</u>	<u>4,279,941</u>	<u>3,278,385</u>	<u>5,283,064</u>	<u>7,476,279</u>	<u>22,729,139</u>
Total Present Value of Future Benefits	11,528,327	9,829,077	9,520,623	17,472,966	20,857,585	69,208,578
B. Present Value of Future Normal Costs	468,655	793,790	583,110	2,305,845	2,819,424	6,970,824
C. Actuarial Accrued Liability (A.-B.)	11,059,672	9,035,287	8,937,513	15,167,121	18,038,161	62,237,754
D. Actuarial Value of Assets	1,286,929	1,051,367	4,134,760	1,764,881	2,098,962	10,336,899
E. Unfunded Actuarial Accrued Liability (C.-D.)	9,772,743	7,983,920	4,802,753	13,402,240	15,939,199	51,900,855
F. Funded Ratio (D./C.)	11.6%	11.6%	46.3%	11.6%	11.6%	16.6%
G. Fiscal Year Ending June 30, 2020						
i) Employer Normal Cost	\$ 65,837	\$ 123,000	\$ 81,704	\$ 199,182	\$ 269,830	\$ 739,553
ii) Amortization of UAAL (19 years)*	<u>901,606</u>	<u>736,575</u>	<u>443,088</u>	<u>1,236,454</u>	<u>1,470,507</u>	<u>4,788,230</u>
Actuarially Computed Employer Contribution	\$ 967,443	\$ 859,575	\$ 524,792	\$ 1,435,636	\$ 1,740,337	\$ 5,527,783
H. Fiscal Year Ending June 30, 2021						
Actuarially Computed Employer Contribution	\$ 963,953	\$ 851,211	\$ 519,976	\$ 1,435,179	\$ 1,728,194	\$ 5,498,513

* Unfunded Accrued Actuarial Liability.

The unfunded actuarial accrued liabilities were amortized as a level dollar amount over a period of 19 years beginning with the fiscal year ending June 30, 2020 and decreasing by 1 each year thereafter. The long-term rate of investment return used in this valuation is 6.00%.

Comments

COMMENT A: The recommended contributions for the June 30, 2018 valuation have decreased since the prior valuation as of June 30, 2016. Factors contributing to this decrease include, but are not limited to:

- Increasing the long-term rate of investment return from 4.00% to 6.00%; and
- More favorable claims and premium experience than projected.

Partially offsetting these factors were increases due to:

- Adjusting the healthcare cost trend rates; and
- Updating the mortality tables and other demographic assumptions to be consistent with the MERS pension assumptions.

The combined impact of the changes in assumptions and the increase to the long-term rate of investment return decreased the liability by approximately \$20,000,000.

COMMENT B: One of the key assumptions used in any valuation of the cost of postemployment benefits is the rate of return on the assets that will be used to pay Plan benefits. Higher assumed investment returns will result in a lower Actuarially Computed Employer Contribution. Lower returns will tend to increase the Actuarially Computed Employer Contribution. We have calculated the liability and the resulting Actuarially Computed Employer Contribution using an assumed annual rate of investment return of 6.00%.

COMMENT C: The plan sponsor is required by GASB to perform actuarial valuations at least biennially unless there are significant changes in the OPEB.

COMMENT D: The contributions shown include amortization of the unfunded actuarial accrued liability over a closed 19-year period.

COMMENT E: The calculations within this report have been performed incorporating \$10,336,899 in retiree health assets. We understand from the plan sponsor that these assets reside in a qualifying trust and can, therefore, be used in determining the Actuarially Computed Employer Contribution. Per the request of the City, assets were allocated in the following way: 40% of the assets were used for the Water/WWTP group, and the remaining 60% of the assets were divided equally among the remaining subgroups shown in this report in proportion to each group's Actuarial Accrued Liability on the valuation date.

Comments

COMMENT F: The “Cadillac” tax is a 40% excise tax paid by the coverage provider (employer and/or insurer) on the value of health plan costs in excess of certain thresholds, effective in 2022. The initial thresholds are \$10,200 for single coverage or \$27,500 for family coverage. Many plans are below the thresholds today, but are likely to exceed them in the next decade. The thresholds will be indexed at CPI-U, which is lower than the medical inflation rates affecting the cost of the plans. There is considerable uncertainty about how the tax would be applied, and considerable latitude in grouping of participants for tax purposes. Combining early retiree and Medicare eligible retiree costs is allowed and can keep plans under the thresholds for a longer period of time. For this valuation, a 4.00% load was applied to the health care liabilities to approximate the cost for future excise tax, based on the current plan provisions and assumptions. We have not identified any other specific provision of health care reform that would be expected to have a significant impact on the measured obligation. As additional guidance on the legislation is issued, we will review and monitor the impact.

COMMENT G: The GASB issued Statement Nos. 74 and 75 for OPEB valuations similar to the new pension standards. GASB Statement No. 74 for the plan OPEB disclosures is effective for fiscal years beginning after June 15, 2016. GASB Statement No. 75 for employer OPEB disclosures is effective for employer fiscal years beginning after June 15, 2017. The GASB implementation guides for Statement Nos. 74 and 75 provide additional clarification related to the implementation of these Statements. The information necessary for GASB Statement Nos. 74 and 75 will need to be developed at a later date. The basis for the GASB Statement Nos. 74 and 75 information is expected to be this valuation (as of June 30, 2018), rolled forward to the measurement date.

COMMENT H: Michigan Public Act 202 of 2017 created new reporting and other requirements for local units of government. As such, we can work with the City of Trenton Retiree Health Care Plan to develop a funding policy to document Plan procedures and facilitate compliance. GRS will be providing the City of Trenton a separate supplemental report at a later date which will incorporate Public Act 202 uniform assumptions.

COMMENT I: Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the market value of assets. Unless otherwise indicated, with regards to any funded status measurements presented in this report:

- The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligations, and
- The measurement is inappropriate for assessing the need for or the amount of future employer contributions.

SECTION B

RETIREE PREMIUM RATE DEVELOPMENT

Retiree Premium Rate Development

Initial medical premium rates were developed for the two classes of retirees (pre-65 and post-65). For the pre-65 retirees, the medical rates were calculated by using actual incurred retiree claims and exposure data for the period of January 2016 to December 2018. The self-insured pre-65 medical data was provided by the City of Trenton.

For the post-65 retirees, the fully-insured medical rates provided by the City of Trenton were utilized to determine the appropriate premium rates. The fully-insured Medicare Advantage medical rate is used as the basis of the initial per capita cost without demographic adjustment since the rate reflects the demographics of this segment. Since CMS reimbursements are not expected to increase as quickly as medical trend, Medicare Advantage premiums are expected to increase somewhat faster than healthcare inflation. To account for this expectation, we have increased the Medicare rates slightly to account for the expected CMS reimbursement lagging behind medical increases. This adjustment will be reevaluated at the time of the next valuation.

The prescription drug rates were calculated separately for pre-65 and post-65 retirees by using actual incurred retiree claims and exposure data for the period of January 2016 to December 2018. The self-insured prescription drug data was provided by the City of Trenton.

There are no differences between the benefit options available to future retirees/mirrored retirees and the non-mirrored existing retirees, other than cost sharing arrangements.

Age graded and sex distinct premiums are utilized by this valuation. The premiums developed by the preceding process are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process “distributes” the average premium over all age/sex combinations and assigns a unique premium for each combination. The age/sex specific premiums more accurately reflect the health care utilization and cost at that age.

The combined monthly one-person medical and drug premiums at select ages are shown below.

For Those Not Eligible for Medicare (Pre-65)				
Age	Future Retirees		Current Retirees	
	Male	Female	Male	Female
40	\$ 379.54	\$ 616.73	\$ 381.38	\$ 619.72
50	615.23	757.90	618.22	761.58
60	1,045.61	1,029.57	1,050.68	1,034.56
64	1,271.49	1,199.94	1,277.66	1,205.77

For Those Eligible for Medicare (Post-65)				
Age	Future Retirees		Current Retirees	
	Male	Female	Male	Female
65	\$ 543.43	\$ 512.57	\$ 578.80	\$ 545.93
75	635.81	620.41	677.20	660.79
85	672.33	680.25	716.09	724.53

We did not “age grade” the dental and vision premium rates for this valuation, since dental and vision claims do not vary significantly by age. Dental and vision coverage are only provided to retirees prior to age 65. The average monthly dental premiums used in this valuation are \$27.14 for the first person with coverage per member per month and \$25.05 for the second person with coverage per member per month. The monthly vision premium used in this valuation is \$11.37 for the first person with coverage per member per month and \$11.58 for the second person with coverage per member per month.

James E. Pranschke is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to certify the per capita retiree health care rates shown above.


James E. Pranschke, FSA, MAAA

SECTION C

SUMMARY OF BENEFITS

City of Trenton Retiree Health Care Plan Summary of the Benefit Provisions as of June 30, 2018

Leaving Employment as a Result of	Bargaining Unit	Hire Date	Point System	Eligibility for Benefit		Benefit Provided by Employer (A)			Post-6/30/2005 Retirees (B)	Retiree Share of Cost (C)		
				Age	Years of Service	Retiree	Spouse	Dependent (D)		Retiree	Spouse	Post-6/30/2005
Normal Retirement	TPOAM	Before 1/1/1996		60	10	All	All	All	Mirroring (eff 1/14/08)	None	None	R e f e r
Normal Retirement	TPOAM	Before 1/1/1996		55	15	All	All	All	Mirroring (eff 1/14/08)	None	None	
Normal Retirement	TPOAM	Before 1/1/1996		50	25	All	All	All	Mirroring (eff 1/14/08)	None	None	
Normal Retirement	Non-Union	Before 1/1/1996		60	10	All	All	All	Mirroring	None	None	r t o
Normal Retirement	Non-Union	Before 1/1/1996		55	15	All	All	All	Mirroring	None	None	
Normal Retirement	Non-Union	Before 1/1/1996		50	25	All	All	All	Mirroring	None	None	
Normal Retirement	TILA (Lieutenants)	Before 1/1/1996		Any	25	All	All	All	Mirroring (eff 7/07)	None	None	s c h e d u l e
Normal Retirement	MAP (Police)	Before 1/1/1996		Any	25	All	All	All	Mirroring	None	None	
Normal Retirement	IAFF (Fire)	Before 1/1/1996		Any	25	All	All	All	Mirroring	None	None	
Normal Retirement	TPOAM	Post 1/1/1996	80 points (age + service)		15	All	All	All	Mirroring	None	None	e l o w
Normal Retirement	Non-Union	Post 1/1/1996	80 points (age + service)		15	All	All	All	Mirroring	None	None	
Normal Retirement	TPOAM	Post 6/30/12							H CSP*	None	None	
Normal Retirement	Non-Union	Post 6/30/12							H CSP*	None	None	b e l o w
Normal Retirement	MAP/IAFF (Police/Fire)	Post 6/30/16							H CSP*	None	None	
Normal Retirement	TILA (Lieutenants)	Post 1/1/1996		55	20	All	All	All	Mirroring	None	None	
Normal Retirement	MAP (Police)	Post 1/1/1996		55	20	All	All	All	Mirroring	None	None	b e l o w
Normal Retirement	IAFF (Fire)	Post 1/1/1996		55	20	All	All	All	Mirroring	None	None	
Deferred Vested Termination						None	None	None				
Non-Duty Disability						None	None	None				b e l o w
Duty Disability						None	None	None				
Non-Duty Death-in-Service	All units			Any	Any		All for 5 years	All for 5 years			None	
Duty Death-in-Service	All units			Any	Any		All for 5 years	All for 5 years			None	

- A -** All includes the following: Medical, prescription drugs, dental and vision.
Dental and vision only until the age of 65. Life insurance is currently provided in the amount of \$10,000, older retirees have lesser amounts based on date of retirement.
 - B -** Employees, who retire(d) after 6/30/2005, except as noted otherwise, will have the same level of coverage as that provided to active employees.
 - C -** Schedule of premium sharing becomes effective for all active employees and retirees post-6/30/2005 is as follows: 80/20 cost share.
For Medicare eligible retirees, premium sharing is offset by Medicare premiums paid by the retiree.
 - D -** No family continuation for all employee groups was revoked with the adoption of the 2010 Healthcare Act.
- * - Plan Closures: TPOAM, General, Non-Union: 6/30/2012. Police and Fire: 6/30/2016. Employees hired after these dates are in the HCSP. It was assumed that these members do not have access to the Retiree Health Care Plan.

City of Trenton Retiree Health Care Plan

Summary of Benefit Provisions as of June 30, 2018

Life Insurance:

Life Insurance is available upon retirement in the amount of \$10,000.

SECTION D

SUMMARY OF PARTICIPANT DATA

City of Trenton
Active Members* as of June 30, 2018
by Age and Years of Service

Age	Years of Service to Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.
20-24	8							8
25-29	13	1						14
30-34	12	5	3					20
35-39	5	11	3					19
40-44	5	1	7	5	1			19
45-49	8		2	4	11			25
50-54	4	3	1		3	4		15
55-59	1		2	1	7	3	2	16
60-64	2		2		1		1	6
65 & Over			1					1
Totals	58	21	21	10	23	7	3	143

* Includes members eligible for future life insurance benefits only.

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

OPEB Group	Count	Age	Service
TPOAM	27	40.1 yrs.	8.2 yrs.
Non-Union	33	48.8	10.6
Water/WWTP	20	45.2	14.1
Fire	29	37.0	9.4
Police	34	39.0	11.3
Total	143	41.9	10.6

City of Trenton Inactive Members as of June 30, 2018 by Age

Number of Retiree and Beneficiary Contracts

	Opt-Out/ Ineligible#	One-Person Coverage	Two-Person Coverage*	Total
Male	7	33	100	140
Female	9	55	10	74
Total	16	88	110	214

* Includes family coverage.

Includes retirees and beneficiaries with only non-medical coverage.

Age	Current Retirees with Medical Coverage					
	Number of Those Covered					
	TPOAM	Non-Union	Water/WWTP	Fire	Police	Total
0-44						
45-49				3		3
50-54	4	1	1	5	4	15
55-59	5		3	7	6	21
60-64	10	2	5	3	10	30
65-69	5	8	7	10	7	37
70-74	4	3	4	3	5	19
75-79	2	7	1	4	6	20
80-84	2	8	2	4	9	25
85-89	2	3	1	3	8	17
90-94	2	3		1	3	9
95 +	1			1		2
Totals	37	35	24	44	58	198

There are 0 terminated members eligible for deferred Plan benefits.

SECTION E

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Actuarial Methods for City of Trenton Retiree Health Care Plan as of June 30, 2018

Actuarial Cost Method. Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

- (i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
- (ii) each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Actuarial gains (losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded actuarial accrued liabilities (UAAL) (full funding credit if assets exceed liabilities) were amortized as a level dollar. The UAAL was determined using the actuarial value of assets and actuarial accrued liability calculated as of the valuation date and projected to the beginning of the fiscal year at the assumed rate of investment return.

Actuarial Value of Assets. The Actuarial Value of Assets is set equal to the reported market value of assets. Assets were allocated among the subgroups shown in this report in the following proportion: 40% to the Water/WWTP subgroup, then the remaining 60% of the assets in proportion to each group's Actuarial Accrued Liability on the valuation date.

Amortization Factors: The following amortization factors were used in developing the Actuarially Computed Employer Contribution for the fiscal years shown:

	Fiscal Year Ending June 30,	
	2020	2021
Level Dollar	11.4896	11.1493

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (MERS) as of June 30, 2018

All assumptions are expectations of future experience, not market measures. The rationale for the rates of merit and longevity salary increase, base wage inflation, rates of mortality, early retirement rates, rates of separation from active membership, and disability rates used in this valuation is included in the MERS 5-year experience study for the period January 1, 2009 to December 31, 2013 performed by the prior MERS pension actuary. We have not performed an independent analysis of plan experience, but we anticipate beginning the next 5-year experience study for the period January 1, 2014 to December 31, 2018 following the completion of the December 31, 2018 pension valuations.

The rate of investment return was 6.00% a year, compounded annually net after investment expenses.

The rates of price inflation are not specifically used for this valuation. However, a rate of price inflation of 2.50% would be consistent with other assumptions in this report.

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which future contributions will be based.

Sample Ages	% Increase in Salary at Sample Ages		
	Merit & Longevity	Base (Wage Inflation)	Total Percentage Increase in Pay
20	11.00 %	3.75 %	14.75 %
25	7.20	3.75	10.95
30	3.10	3.75	6.85
35	1.90	3.75	5.65
40	1.20	3.75	4.95
45	0.81	3.75	4.56
50	0.52	3.75	4.27
55	0.30	3.75	4.05
60	0.00	3.75	3.75

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (MERS) as of June 30, 2018

The rates of mortality used for individual members are in accordance with the following tables.

The mortality table used to project the mortality experience of non-disabled plan members is a 50% Male - 50% Female blend of the following tables:

1. The RP-2014 Healthy Annuitant Mortality Tables, with rates multiplied by 105%
2. The RP-2014 Employee Mortality Tables
3. The RP-2014 Juvenile Mortality Tables

For ages 0-17, we use the rates in Table 3; for ages 18-49, we use the rates in Table 2; for ages 70 and older, we use the rates in Table 1; and for ages 50-69 we blend Table 2 and Table 1 as follows:

- a. Age 50, use 60% of Table 2 and 40% of Table 1
- b. Age 51, use 57% of Table 2 and 43% of Table 1
- c. Etc. ...
- d. Age 69, use 3% of Table 2 and 97% of Table 1

The mortality table used to project the mortality experience of disabled plan members is a 50% Male - 50% Female blend of the RP-2014 Disabled Retiree Mortality Tables.

Ninety percent (90%) of active member deaths are assumed to be non-duty deaths and 10% of the deaths are assumed to be duty related.

Possible future mortality improvements are reflected in the mortality assumption. The mortality assumptions include a 10% margin for future mortality improvements, relative to the actual mortality experience seen in the 2009-2013 Experience Study, as performed by the prior MERS pension actuary.

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (MERS) as of June 30, 2018

The life expectancies and mortality rates projected for non-disabled members are shown below for selected ages:

Sample Ages	Expected Years of Life Remaining	Mortality Rates
20	63.06	0.03%
25	58.15	0.03
30	53.24	0.03
35	48.33	0.04
40	43.43	0.05
45	38.56	0.08
50	33.74	0.23
55	29.18	0.37
60	24.79	0.58
65	20.59	0.94
70	16.66	1.56
75	13.07	2.51
80	9.85	4.18

The life expectancies and mortality rates projected for disabled members are shown below for selected ages:

Sample Ages	Expected Years of Life Remaining	Mortality Rates
20	46.95	0.47%
25	43.14	0.54
30	39.24	0.55
35	35.33	0.65
40	31.52	0.82
45	27.98	1.30
50	24.87	1.62
55	21.91	1.89
60	18.97	2.18
65	16.04	2.63
70	13.19	3.43
75	10.54	4.77
80	8.18	6.88

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (MERS) as of June 30, 2018

Retirement Rates

A schedule of retirement rates is used to measure the probability of eligible members retiring during the next year. To reflect the impact plan design may have on retirement experience, separate retirement rates apply to valuation divisions with pension benefit multipliers less than or equal to 2.50% and greater than 2.50%. Certain retirement ages may not apply, depending on the benefit age of first eligibility.

Normal Retirement - Age Based Benefit Provisions

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year*#	
	Less than or Equal to 2.50%	Greater than 2.50%
50	20%	23%
51	20	23
52	20	24
53	20	26
54	20	26
55	20	30
56	20	33
57	21	35
58	21	39
59	21	42
60	21	43
61	22	48
62	22	49
63	22	49
64	23	50
65	25	50
66	25	50
67	26	50
68	28	50
69	30	50
70	100	100

* For those eligible prior to age 50, the retirement rate is 22% per year. Members in a defined contribution plan follow the retirement pattern of those with a defined benefit of less than or equal to 2.50% per year.

All members who reach eligibility for normal retirement pension benefits before reaching eligibility for retiree health benefits are assumed to retire at the rate of 3% per year during the period when they are not eligible for health.

**Actuarial Assumptions for
City of Trenton Retiree Health Care Plan (MERS)
as of June 30, 2018**

Early Retirement - Reduced Pension Benefit

Retirement Ages	Percent of Eligible Active Members Retiring within Next Year
50	2.00%
51	2.00
52	3.30
53	3.80
54	5.60
55	4.30
56	4.20
57	4.10
58	5.00
59	6.20

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (MERS) as of June 30, 2018

Rates of separation from active membership are used to estimate the number of employees at each age that are expected to terminate employment before qualifying for retirement benefits. The rates of separation from active membership do not apply to members eligible to retire, and do not include separation on account of death or disability. The assumed rates of separation applied in the current valuation are based on years of service, and scaled up or down according to each group's experience.

Group	Separation Rate Scaling Factor
All Divisions	100%

The base separation rates (see the table below) are multiplied by the scaling factor to obtain the assumed withdrawal rates. Sample rates of separation from active employment, before application of the scaling factor, are shown below:

Samples Years of Service	% of Active Members Separating within the Next Year
0	19.60%
1	16.30
2	13.30
3	10.50
4	8.60
5	6.90
10	4.60
15	3.40
20	2.60
25	2.20
30 and over	2.20

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (MERS) as of June 30, 2018

Disability Rates

Disability rates are used in the valuation to estimate the incidence of member disability in future years.

The assumed rates of disablement at various ages are shown below:

Sample Ages	Percent Becoming Disabled within the Next Year
20	0.02%
25	0.02
30	0.02
35	0.05
40	0.08
45	0.20
50	0.29
55	0.38
60	0.39
65	0.39

80% of the disabilities are assumed to be non-duty and 20% of the disabilities are assumed to be duty related. For those plans which have adopted disability provision D-2, for pension benefit purposes, 40% of the disabilities are assumed to be non-duty and 60% are assumed to be duty related.

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (ACT 345) as of June 30, 2018

The actuarial assumptions for ACT 345 participants in this report were based upon the results of an Experience Study for the City of Trenton Fire and Police Retirement System covering the period July 1, 2011 through June 30, 2016. A report dated April 3, 2017 presented the results of the Experience Study. The actuarial assumptions represent estimates of future experience, not market measures.

The rate of investment return was 6.00% a year, compounded annually net after investment expenses.

The rate of price inflation is not specifically used for this valuation. However, a rate of price inflation of 2.50% would be consistent with other assumptions in this report.

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefit amounts will be based.

Years of Service	% Increase in Salary at Sample Ages		
	Merit & Seniority	Base (Economic)	Increase Next Year
1	6.00%	3.00%	9.00%
2	5.25%	3.00%	8.25%
3	4.50%	3.00%	7.50%
4	3.75%	3.00%	6.75%
5	3.00%	3.00%	6.00%
10	1.20%	3.00%	4.20%
15	0.68%	3.00%	3.68%
20	0.30%	3.00%	3.30%
25	0.15%	3.00%	3.15%
30	0.15%	3.00%	3.15%
Ref	144	0.03	

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (ACT 345) as of June 30, 2018

Healthy Life Post-Retirement Mortality Table:

The RP-2014 Healthy Annuitant Generational Mortality Tables, with blue-collar adjustments and extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale. A base year of 2006 with future mortality improvements assumed each year using scale MP-2016. This assumption was first used for the June 30, 2016 valuation. Sample values follow:

Sample Ages	Probability of Dying Next Year		Future Life Expectancy (Years)	
	Men	Women	Men	Women
55	0.5969 %	0.4169 %	28.69	31.57
60	0.8682	0.6184	24.14	26.85
65	1.3131	0.9064	19.86	22.35
70	2.0091	1.4079	15.91	18.07
75	3.2010	2.3250	12.30	14.10
80	5.3221	3.9625	9.12	10.58

Based on retirements in 2018. Retirements in future years will reflect improvements in life expectancy.

Healthy Life Pre-Retirement Mortality Table:

The RP-2014 Employee Generational Mortality Tables, with blue-collar adjustments and extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale. A base year of 2006 with future mortality improvements assumed each year using scale MP-2016. This assumption was first used for the June 30, 2016 valuation. Sample values follow:

Sample Ages	Probability of Dying Next Year	
	Men	Women
35	0.0715 %	0.0345 %
40	0.0838	0.0484
45	0.1237	0.0736
50	0.2132	0.1198
55	0.3590	0.1943
60	0.6230	0.2953

Based on decrement in 2018. Decrements in future years will reflect improvements in life expectancy.

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (ACT 345) as of June 30, 2018

Disabled Retirement Mortality Table:

The RP-2014 Disabled Mortality Tables, extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale. A base year of 2006 with future mortality improvements assumed each year using scale MP-2016. This assumption was first used for the June 30, 2016 valuation. Sample values follow:

Sample Ages	Probability of Dying Next Year		Future Life Expectancy (Years)	
	Men	Women	Men	Women
55	2.3254 %	1.4999 %	21.45	25.22
60	2.7316	1.8330	18.40	21.65
65	3.2980	2.1669	15.51	18.20
70	4.1175	2.8430	12.74	14.81
75	5.5153	4.1544	10.10	11.64
80	7.8627	6.3372	7.70	8.89

Based on retirements in 2018. Retirements in future years will reflect improvements in life expectancy.

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

Members Hired before July 1, 1996	
Service	Percent
25	30%
26	30%
27	25%
28	25%
29	25%
30	25%
31	25%
32	55%
33	55%
34	55%
35	55%
36	55%
37	55%
38	55%
39	55%
40	55%
41	55%
42 & Up	100%
Ref.	1351

Members Hired after July 1, 1996	
Age	Percent
55	30%
56	30%
57	30%
58	30%
59	30%
60 & Up	100%
Ref	1560

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (ACT 345) as of June 30, 2018

Rates of separation from active membership were as shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

Age	Years of Service	% of Active Members Separating within Next Year
ALL	0	5.00%
	1	4.00%
	2	3.00%
	3	2.00%
	4	1.50%
35	5 & Over	1.21%
40		0.44%
45		0.44%
50		0.44%
55		0.44%
60		0.44%
65		0.44%
Ref.		1061 285

Rates of disability were as follows:

Age	% of Active Members Becoming Disabled within Next Year	
	Male	Female
20	0.08%	0.10%
25	0.08%	0.10%
30	0.08%	0.10%
35	0.08%	0.10%
40	0.20%	0.36%
45	0.27%	0.41%
50	0.49%	0.57%
55	0.89%	0.77%
Ref.	9	10

Actuarial Assumptions for City of Trenton Retiree Health Care Plan (MERS and ACT 345) as of June 30, 2018

Health care cost trend rates are displayed in the following table:

Year After Valuation	Health Care Trend Inflation Rates	
	Medical/Drug	Dental/Vision
1	9.00%	3.50%
2	8.25	3.50
3	7.50	3.50
4	6.75	3.50
5	6.25	3.50
6	5.75	3.50
7	5.25	3.50
8	4.75	3.50
9	4.25	3.50
10	3.50	3.50
11	3.50	3.50
12	3.50	3.50
13	3.50	3.50
14	3.50	3.50
15	3.50	3.50
16 +	3.50	3.50

Miscellaneous and Technical Assumptions for City of Trenton Retiree Health Care Plan (MERS and Act 345) as of June 30, 2018

Administrative Expenses	No explicit assumption has been made for administrative expenses.
Decrement Operation	MERS: Disability and withdrawal do not operate during retirement eligibility. ACT 345: Disability does not operate during retirement eligibility.
Decrement Timing	Decrements of all types are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Incidence of Contributions	Contributions are assumed to be received continuously throughout the year based upon the computed contribution in this report.
Marriage Assumption	MERS: 70% of males and 70% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes. ACT 345: 100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
Medicare Coverage	Assumed to be available for all covered employees on attainment of age 65. Disabled retirees were assumed to be eligible for Medicare coverage at age 65.
Health Care Coverage at Retirement	The table below shows the assumed portion of future retirees electing one-person or two-person/family coverage, or opting out of coverage entirely.

	One-Person	Two-Person/Family		Opt-Out
		Electing	Continuing	
Male	20%	80%	100%	0%
Female	20%	80%	100%	0%

APPENDIX

Glossary

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarially Computed Employer Contribution. The Actuarially Computed Employer Contribution is the normal cost plus the portion of the unfunded actuarial accrued liability to be amortized in the current period. The Actuarially Computed Employer Contribution is an amount that is actuarially determined in accordance with the requirements so that, if paid on an ongoing basis, it would be expected to provide sufficient resources to fund both the normal cost for each year and the amortized unfunded actuarial accrued liability.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Glossary

Governmental Accounting Standards Board (GASB). GASB is the private, nonpartisan, nonprofit organization that works to create and improve the rules U.S. state and local governments follow when accounting for their finances and reporting them to the public.

Implicit Rate Subsidy. It is common practice for employers to allow retirees to continue in the employer's group health insurance plan (which also covers active employees), often charging the retiree some portion of the premium charged for active employees. Under the theory that retirees have higher utilization of services, the difference between the true cost of providing retiree coverage and what the retiree is being charged is known as the implicit rate subsidy.

Medical Trend Rate (Health Care Inflation). The increase in the cost of providing health care benefits over time. Trend includes such elements as pure price inflation, changes in utilization, advances in medical technology, and cost shifting.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Other Postemployment Benefits (OPEB). OPEB are postemployment benefits other than pensions. OPEB generally takes the form of health insurance, dental, vision, prescription drugs, life insurance or other health care benefits.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

Valuation Assets. The value of current plan assets recognized for valuation purposes.