City Of Chester, West Virginia Policemen's Pension and Relief Fund

Actuarial Valuation Report for the Year Beginning July 1, 2017

September 5, 2018

Ms. N. Marlene Fleming
City Treasurer
600 Indiana Avenue
Chester, WV 26034

Police Officer Brandon G. Whittaker
Pension Board Secretary
City of Chester Policemen's Pension and Relief Fund

Subject: City of Chester Policemen's Pension and Relief Fund
Actuarial Valuation Report for the Year Beginning July 1, 2017

Dear Ms. Fleming and Police Officer Whittaker:

Upon the request of the Municipal Pensions Oversight Board, we have performed an actuarial valuation as of July 1, 2017, for the City of Chester, West Virginia Policemen's Pension and Relief Fund ("Fund" or "Plan"). This actuarial valuation has been performed in accordance with the West Virginia Code Chapter 8, Article 22, Sections 16 through 28, inclusive.

In accordance with West Virginia Code §8-22-20, this actuarial valuation report provides information on:

- The sponsor's funding requirements for the fiscal year ending June 30, 2019, based on the selected funding policy, i.e. the Standard funding policy as defined in West Virginia Code §8-22-20
- The Fund's eligibility to receive an allocation of the premium tax for the fiscal year ending June 30, 2019
- The Fund's eligibility to provide supplemental benefits for the plan year beginning July 1, 2019

West Virginia Code §8-22-20 (c)(4), requires (1) a review of the actuarial assumptions and methods at least once every five years and (2) that the Actuary shall provide a report to the oversight board with recommendations on any changes to the actuarial process. Consequently, an experience review was performed for the period July 1, 2009, through June 30, 2014. The actuarial assumptions and methods were recommended by the actuary, in the report *2016 Experience Review for the Years July 1, 2009, to July 1, 2014*, approved by the Municipal Pensions Oversight Board, and became effective for the actuarial valuation as of July 1, 2015.

This report also provides illustrative projections under a different funding policy available to the sponsor – the Optional funding policy as defined in West Virginia Code §8-22-20(e).

This actuarial valuation is based upon:

Plan Member Data – Data for active members and persons receiving benefits from the Fund as of June 30, 2017, was provided by the Fund's staff. We have tested this data for reasonableness.

Asset Values – A reconciliation of market value of assets during the plan year ending June 30, 2017, and a list of assets held as of June 30, 2017, by investment category, were provided by the Fund.

Plan Provisions – A summary of the key plan provisions valued are set forth in Section VII of the report: Summary of Principal Plan Provisions.

Actuarial Methods – Fund liabilities were measured using the Entry-Age Normal Actuarial Cost Method. The actuarial valuation was based on the market value of assets. The actuarial methods used in the actuarial valuation are set forth in Section VI of the report: Actuarial Assumptions and Methods.

Actuarial Assumptions – The actuarial assumptions used include a discount rate of 6.50%. The actuarial assumptions used in the actuarial valuation are set forth in Section VI of the report: Actuarial Assumptions and Methods.

The actuarial valuation results disclosed in this report are based on the data and actuarial assumptions and methods described above, and upon the provisions of the Plan as of the actuarial valuation date. Based on these items, we certify these results to be true and correct.

To the best of our knowledge, this actuarial statement is complete and accurate, and has been prepared in accordance with generally accepted actuarial principles and practices.

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.

This report should not be relied on for any purpose other than the purpose stated.

The signing actuaries are independent of the plan sponsor.

Alex Rivera and Lance Weiss are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

Sincerely,

Alex Rivera, FSA, EA, MAAA, FCA	Lance Weiss, EA, MAAA, FCA
Senior Consultant	Senior Consultant

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SECTION I

ACTUARIAL VALUATION RESULTS AS OF JULY 1, 2017

Executive Summary

Upon the request of the Municipal Pensions Oversight Board, we have performed an actuarial valuation as of July 1, 2017, for the City of Chester, West Virginia Policemen's Pension and Relief Fund ("Fund" or "Plan").

In accordance with West Virginia Code §8-22-20, this report provides information on:

- The sponsor's funding requirements for the fiscal year ending June 30, 2019.
- The Fund's eligibility to receive an allocation of the premium tax for the fiscal year ending June 30, 2019.
- The Fund's eligibility to provide supplemental benefits for the plan year beginning July 1, 2019.

This report is based on the sponsor's election to finance benefit obligations using the Standard funding policy as defined in West Virginia Code §8-22-20 (c)(1).

The key features of the Standard funding policy include:

- The employer contribution equals the normal cost, net of employee contributions, plus a 40-year amortization of the unfunded actuarial accrued liability less the allocable portion of the state premium tax fund for municipal pension and relief funds. The amortization is based on a 40-year closed period commencing on July 1, 1991.

- The employer contribution cannot be less than the net normal cost.

- If the City continues to contribute the standard minimum amount in each plan year, by the year 2031 the funded ratio is expected to increase to 100%.

- The Plan also receives premium tax allocation assigned to the Fund for the plan year.

This report also provides illustrative projections under a different funding policy available to the sponsor – the Optional funding policy as defined in West Virginia Code §8-22-20(e).

Executive Summary (Continued)

The following table provides the Plan's funded status:

Funded Status as of:	July 1, 2017
Assets	$1,677,396
Actuarial Accrued Liability	$2,191,427
Unfunded Actuarial Accrued Liability	$514,031
Funded Ratio	76.54%

The following table provides the estimated employer contributions for the fiscal year ending June 30, 2018, under the Standard funding policy, based on the July 1, 2016 actuarial valuation produced by GRS:

Employer Contributions for FYE:	June 30, 2018
Estimated Payroll for PYE 06/30/2017	$123,514
Employer Normal Cost for PYE 06/30/2017	$21,193
Employer Normal Cost Rate for PYE 06/30/2017	17.2%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2017	$61,240
State Insurance Premium Tax Allocation for FYE 06/30/2018	$34,837
Employer Contribution for FYE 06/30/2018 [a]	$47,596

The following table provides the estimated employer contributions for the fiscal year ending June 30, 2019, under the Standard funding policy, based on the July 1, 2017 actuarial valuation produced by GRS:

Estimated Employer Contributions for FYE:	June 30, 2019
Estimated Payroll for PYE 06/30/2018	$127,643
Employer Normal Cost for PYE 06/30/2018	$24,671
Employer Normal Cost Rate for PYE 06/30/2018	19.3%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2018	$55,259
State Insurance Premium Tax Allocation for FYE 06/30/2019	$35,437
Estimated Employer Contribution for FYE 06/30/2019 [a]	$44,493

[a] *The Employer Contribution cannot be less than the Employer Net Normal Cost.*

Commentary on Premium Tax Allocation

Under §8-22-19 of the West Virginia Code, the plan sponsor is required to deposit the statutory contribution on a monthly basis at a rate of one-twelfth of the annual requirement, in order to receive the premium tax allocation from the Municipal Pensions Security Fund. Revenues which are specifically collected for the Fund, including employee payroll contributions, must be deposited within five days of receipt.

Based upon discussions with the Municipal Pensions Oversight Board (MPOB), we understand the annual premium tax allocation is determined by September 1st each year. Municipalities can begin invoicing the MPOB for their share of the premium tax allocation after receiving their state provided actuarial study and after the municipality has made employer contributions to the local Plan. Each municipal treasurer shall use the invoice template provided by the MPOB to begin drawing down the state allocation for the municipal pension plan. This July 1, 2017, Actuarial Report from GRS is to be used by municipal pension plans to draw down the September 1, 2018, State Premium Tax Allocation which is allocated in Fiscal Year 2019. *The actuarial valuation and projection results assume the sponsor will make the statutory contributions on a monthly basis in accordance with statutes, and will be eligible to receive the premium tax allocation.*

Commentary on Solvency Projections and Supplemental Benefits

Under § 8-22-26a of the West Virginia Code, all retirees, surviving spouses, and disabled pensioners are eligible for Supplemental Benefits that include automatic cost-of-living benefits commencing on the first day of July following two years of retirement. The benefit equals the percentage increase in the Consumer Price Index, limited to 4.0 percent (2.0 percent for certain disabled pensioners), multiplied by the sum of the allowable amount (first $15,000 of initial benefits paid) and the accumulated supplemental pensions paid in prior years.

The Court of Appeals decision requires that Supplemental Benefits be provided on “the allowable amount of the first $15,000 of the total annual pension paid in addition to the accumulated supplemental pension from the previous years.” The decision implies that compound cost-of-living increases should be applied to both the allowable amount of $15,000 and the accumulated supplemental pension amounts for prior years. Additional Supplemental Benefits are payable only if the Plan satisfies the minimum standard for actuarial soundness as defined in West Virginia Code § 8-22-20. This minimum standard requires that the fund remain “solvent” over the next 15-year projection period. Based on discussions with the West Virginia Municipal Pensions Oversight Board, and our understanding of the administrative practices of other local police and fire pension funds in West Virginia, the “solvency” requirement generally means that the fund’s market value of assets is projected to be greater than zero for all plan years prior to the end of the 15-year projection period. The projection is based on the most recent actuarial valuation and assumes the plan sponsor will make contributions according to the funding policy elected by the sponsor as defined by West Virginia Code, including any additional amounts needed to satisfy the 15-year solvency test on a closed group projection basis. *Although the 15-year solvency test may satisfy the minimum standard for actuarial soundness under the statutes, it is not necessarily consistent with generally accepted actuarial principles.*

The City of Chester has elected to fund benefits using the Standard funding policy of financing as defined in West Virginia Code §8-22-20(c)(1). Under this funding methodology, the fund's market value of assets is projected to be greater than zero for all plan years prior to the end of the 15-year projection period. Accordingly, this contribution methodology satisfies the minimum standard for actuarial soundness, as defined in the statutes.

The Supplemental benefits for plan year beginning July 1, 2019, will be based on the Consumer Price Index for calendar year 2018, and the projected results of the July 1, 2017, actuarial valuation.

Additional Remarks on the Actuarial Valuation Results

Following are additional remarks on the actuarial valuation results as of July 1, 2017:

- The actuarial assumptions and methods were recommended by the actuary, in the report *2016 Experience Review for the Years July 1, 2009, to July 1, 2014*, and approved by the Municipal Pensions Oversight Board and became effective beginning with the actuarial valuation as of July 1, 2015. The key actuarial assumptions are fully disclosed in Section VI of the report.

- The interest rate used to discount liabilities remained the same for the July 1, 2016 and July 1, 2017 actuarial valuations.
  - The interest rate assumption was developed by reviewing the Plan's current funded ratio, the 15-year projected funded ratio, the ratio of assets to benefits, the percentage of assets allocated to equities and the funding policy selected. The details of the methodology used to select the discount rate are presented in Section VI of the report. As of July 1, 2017, the Plan's funded ratio of 72% (using a testing interest rate of 6.00% for all plans using the Standard funding policy), ratio of assets to benefits of 12.23, equity allocation of 50%, and 15-year projected funded ratio of 100%, resulted in a discount rate assumption of 6.50%.

- The Fund experienced an approximate annualized return of 6.41% on the market value of assets during the plan year ending June 30, 2017, which compares to the expected annualized return of 6.50%. The difference in actual versus expected return produced an asset (gain)/loss of $1,529.

- An actuarial valuation is based on the expectation of certain events such as salary increases, retirement, disability, mortality, termination and cost of living increases. Demographic or liability experience (gains)/losses are generated when the actual occurrence of such events differs from the expectation. During the plan year ending June 30, 2017, the fund experienced a net liability (gain)/loss of ($80,191) due to these events.

Standard Funding

Following are additional remarks on the actuarial valuation projections under the current funding policy:

Based on the open group projections shown in Table 1, page II-1 and assuming the sponsor makes the statutory contributions, if all actuarial assumptions are realized in the future, including an investment return of 6.50%:

- Employer contributions are projected to increase from $44,493 for the fiscal year end June 30, 2019, to $61,176 for fiscal year end June 30, 2031.
- The funded ratio is projected to increase from 77% in 2017 to 100% in 2032.

The Standard funding policy contribution policy is consistent with generally accepted actuarial principles.

This actuarial valuation assumes that the City will be able to make future contributions on a timely basis. The ability of the plan to reach 100% funding by 2032 is heavily dependent on the City contributing the minimum employer contribution calculated under the Standard funding policy each and every year until 2032. We did not perform an analysis of the ability of the City to make future contributions. Such an analysis is not within the scope of our assignment or within our analytical skill set. Failure to receive City contributions on a timely basis could jeopardize the sustainability of the Fund.

Under the Standard funding policy, the following experience could cause City contributions to change during the year:

- If the actual return on assets is *less* than the assumed return of 6.50%, then contributions will generally *increase*. Conversely, if the actual return is *greater* than the assumed return, contributions will generally *decrease*.
- If salaries *increase* by more than assumed, contributions could *increase*. If salaries *decrease* by more than assumed, contributions could *decrease.*
- If active members retire *sooner* than expected, contributions will generally *increase.* If active members retire *later* than expected, contributions will generally *decrease*.
- If active members become disabled during the year, contributions could increase.
- If retired members die *later* than expected, contributions will increase. If retired members die *sooner* than expected, contributions will decrease.
- If the general inflation is *greater* than assumed, supplemental benefits will be greater than assumed and contributions will *increase*. Conversely, if general inflation is *lower* than assumed, contributions will *decrease*.

At least once every five years, GRS performs an experience review analysis and updates the actuarial valuation assumptions. For example, if salary increases were consistently lower than assumed during the experience period, then the salary increase rate would likely be lowered. Or if more members retired than assumed, then the retirement rates would likely be increased. Any change in actuarial assumption will also impact the City's funded ratio. The objective of a change in assumptions is to reduce the level of experience gains and losses in future actuarial valuations.

Schedule A: Summary of Key Valuation Results

Valuation Date		**July 1, 2016**		**July 1, 2017**
Valuation Interest Rate		6.50%		6.50%
Cost-of-Living Adjustment		2.75%		2.75%
Wage Inflation		3.75%		3.75%
Expected Payroll		$123,514		$127,643
Average Pay		$41,171		$42,548
Expected Benefit Payments		$146,345		$137,122
1. Actuarial Accrued Liability	No.		No.	
(a) Actives	3	$44,303	3	$80,537
(b) Retirees	4	$1,947,903	3	$1,662,508
(c) Survivors	1	$241,785	2	$448,382
(d) Disabled Members	0	$0	0	$0
(e) Deferred Vested Members	0	$0	0	$0
(f) Total	8	$2,233,991	8	$2,191,427
2. Present Value of Future Normal Costs		$454,025		$472,309
3. Present Value of Benefits (1(f) + 2)		$2,688,016		$2,663,736
4. Market Value of Assets		$1,639,748		$1,677,396
5. Unfunded Actuarial Accrued Liability (1(f) - 4)		$594,243		$514,031
6. Funded Ratio (4 / 1(f))		73.40%		76.54%
7. Net Employer Normal Cost				
(a) Normal Cost		$32,161		$33,771
(b) Administrative Expenses		$766		$3,026
(c) Gross Normal Cost (a + b)		$32,927		$36,797
(d) Employee Contribution Rate [a]		9.50%		9.50%
(e) Expected Employee Contributions		$11,734		$12,126
(f) Net Employer Normal Cost (c - e)		$21,193		$24,671
(% of Compensation)		17.16%		19.33%
8. Estimated Minimum Employer Contribution [b]		**FYE 2018**		**FYE 2019**
(a) Expected Payroll		$123,514		$127,643
(b) Estimated Employer Normal Cost		$21,193		$24,671
(c) Employer Normal Cost Rate		17.16%		19.33%
(d) Amortization of Unfunded Actuarial Liability		$61,240		$55,259
(e) State Insurance Premium Tax Allocation		$34,837		$35,437
(f) Estimated Employer Contribution[c] (b + d - e)		**$47,596**		**$44,493**

[a] *Blended rate reflecting 7.0% for members hired before January 1, 2010, and 9.5% for members hired after January 1, 2010.*

[b] *Estimated Minimum Employer Contribution is based on Standard funding policy and is assumed to be made in plan year end June 30, 2019. The actual Minimum Employer Contribution will be based on actual payroll for plan year end June 30, 2018.*

[c] *The Employer Contribution cannot be less than the Employer Normal Cost.*

Schedule B: (Gain)/Loss Analysis

Experience (Gain)/Loss for Plan Year Ended June 30, 2017

1.	(a) Actuarial Accrued Liability as of 7/1/2016	$2,233,991
	(b) Normal Cost due 7/1/2016	$32,161
	(c) Interest on (a) and (b) to 6/30/2017	$146,255
	(d) Benefit Payments with interest to 6/30/2017	$140,789
	(e) Effect of Assumption Changes	$0
	(f) Expected Liability at 7/1/2017 [(a) + (b) + (c) - (d) + (e)]	$2,271,618
	(g) Actual Liability at 7/1/2017	$2,191,427
	(h) Liability (Gain)/Loss [(g) - (f)]	**($80,191)**
2.	(a) Market Value of Assets as of 7/1/2016	$1,639,748
	(b) Interest on (a) to 6/30/2017	$106,584
	(c) Contributions with interest to 6/30/2017	$73,382
	(d) Benefit Payments with interest to 6/30/2017	$140,789
	(e) Expected Assets at 6/30/2017 [(a) + (b) + (c) - (d)]	$1,678,925
	(f) Actual Assets at 7/1/2017	$1,677,396
	(g) Asset (Gain)/Loss [(e) - (f)]	**$1,529**
3.	Total (Gain)/Loss [1(h) + 2(g)]	**($78,662)**

SECTION II

ACTUARIAL PROJECTIONS

CURRENT FUNDING POLICY – STANDARD

Actuarial Projections, Standard Funding, Table 1

Valuation Plan Year End 30-Jun	Number Active	Number Pay Status	Total Payroll	Total Assets: Assets (boy)	Benefit Payments	Expenses	Employer Contributions	Employee Contributions	Premium Tax Allocation Contributions	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	3	5	$123,514	$1,639,748	$136,357	$2,945	$21,463	$12,209	$37,400	$105,878	$1,677,396	$2,191,427	$514,031	77%
2018	3	5	127,643	1,677,396	137,122	3,026	47,596	12,126	34,837	107,573	1,739,380	2,228,026	488,646	78%
2019	3	5	135,533	1,739,380	138,962	3,103	44,493	12,896	35,437	111,485	1,801,626	2,267,117	465,491	79%
2020	3	5	143,656	1,801,626	140,723	3,182	44,647	13,654	36,530	115,536	1,868,088	2,309,107	441,019	81%
2021	3	5	152,153	1,868,088	142,424	3,262	45,571	14,443	37,344	119,880	1,939,640	2,354,319	414,679	82%
2022	3	5	160,780	1,939,640	144,420	3,345	46,615	15,251	38,162	124,549	2,016,453	2,402,800	386,347	84%
2023	3	5	169,781	2,016,453	146,384	3,429	47,680	16,103	38,997	129,565	2,098,985	2,454,844	355,859	86%
2024	3	5	178,801	2,098,985	148,587	3,514	48,787	16,960	39,872	134,948	2,187,450	2,510,539	323,089	87%
2025	3	5	188,069	2,187,450	150,627	3,601	49,924	17,845	40,758	140,722	2,282,472	2,570,213	287,741	89%
2026	3	5	197,661	2,282,472	152,628	3,689	51,154	18,761	41,657	146,930	2,384,657	2,634,399	249,742	91%
2027	3	5	207,921	2,384,657	154,059	3,778	52,478	19,740	42,592	153,627	2,495,257	2,704,053	208,796	92%
2028	3	5	218,830	2,495,257	155,395	3,868	54,003	20,781	43,567	160,883	2,615,228	2,779,832	164,604	94%
2029	3	5	230,392	2,615,228	156,628	3,959	55,811	21,889	44,571	168,764	2,745,675	2,862,417	116,742	96%
2030	3	5	242,685	2,745,675	157,749	4,052	58,079	23,071	45,561	177,346	2,887,931	2,952,595	64,664	98%
2031	3	5	255,321	2,887,931	159,635	4,145	61,176	24,289	46,578	186,701	3,042,895	3,050,221	7,326	100%
2032	3	5	268,446	3,042,895	161,462	4,238	47,874	25,561	10,125	195,160	3,155,915	3,155,915	0	100%
2033	3	5	282,150	3,155,915	163,201	4,332	52,906	26,891	0	202,328	3,270,508	3,270,508	0	100%
2034	3	5	296,465	3,270,508	163,761	4,426	55,401	28,280	0	209,880	3,395,882	3,395,882	0	100%
2035	3	5	311,405	3,395,882	163,984	4,525	58,061	29,728	0	218,150	3,533,312	3,533,312	0	100%
2036	3	4	326,991	3,533,312	164,000	4,630	60,761	31,238	0	227,214	3,683,895	3,683,895	0	100%
2037	3	4	343,249	3,683,895	165,167	4,740	63,605	32,812	0	237,102	3,847,507	3,847,507	0	100%
2038	3	4	360,200	3,847,507	166,240	4,849	66,855	34,452	0	247,855	4,025,580	4,025,580	0	100%
2039	3	4	377,871	4,025,580	166,939	4,960	69,918	36,161	0	259,558	4,219,318	4,219,318	0	100%

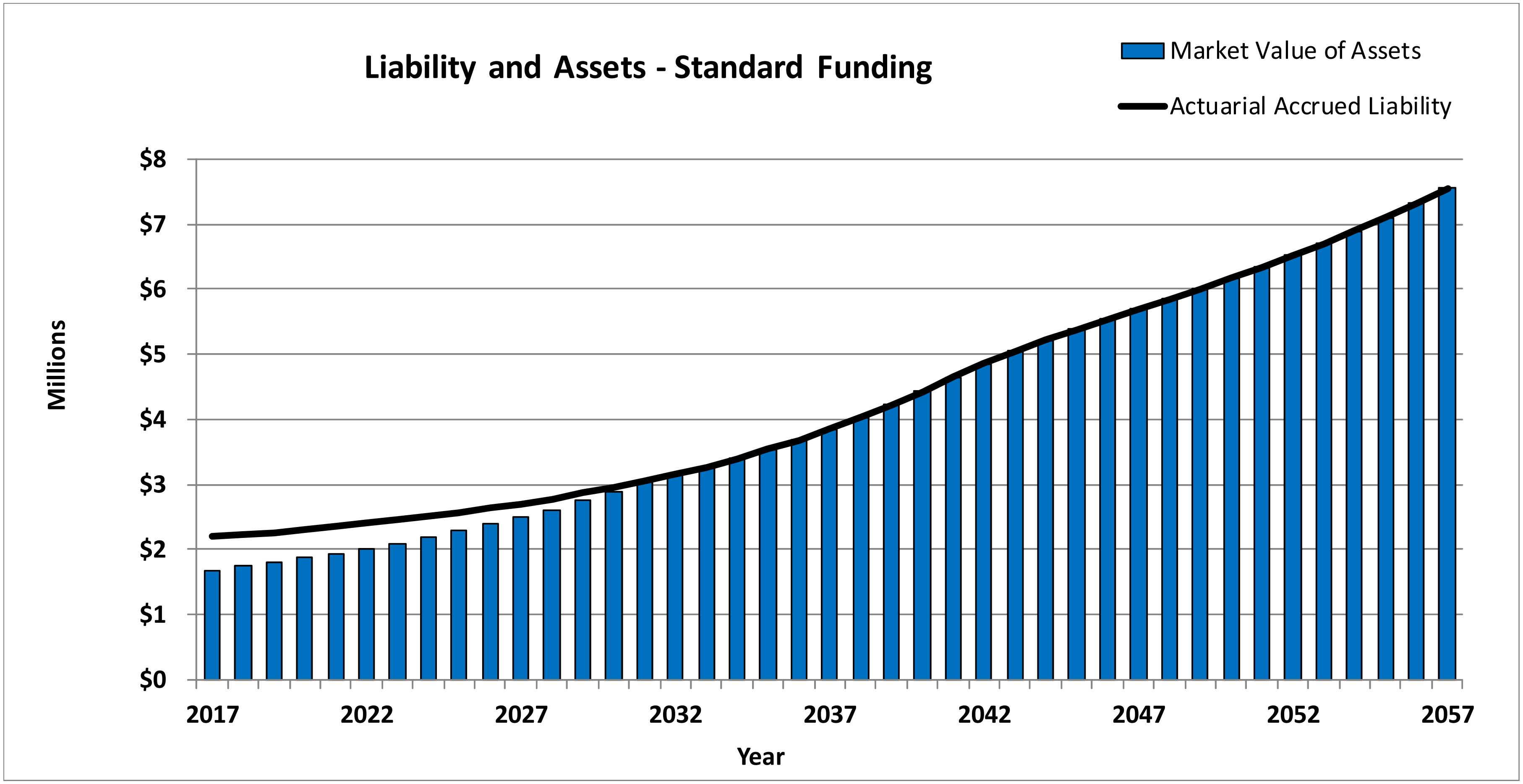
Actuarial Projections, Standard Funding, Table 2

Valuation Plan Year End 30-Jun [a]	Closed Group Payroll	New Entrant Payroll	Total Payroll	Employee Contributions	Gross Normal Cost	Net Employer Normal Cost	Amortization of UAAL	Premium Tax Allocation Contributions	Net Employer Amortization	Expenses	Employer Contribution Open Plan
						Employer Contributions					
2018	$127,643	$0	$127,643	$12,126	$33,771	$21,645	$55,259	$35,437	$19,822	$3,026	$44,493
2019	125,745	9,788	135,533	12,896	35,911	23,015	55,060	36,530	18,530	3,103	44,647
2020	124,305	19,351	143,656	13,654	38,101	24,448	55,286	37,344	17,942	3,182	45,571
2021	123,770	28,383	152,153	14,443	40,379	25,936	55,579	38,162	17,417	3,262	46,615
2022	123,934	36,846	160,780	15,251	42,688	27,436	55,896	38,997	16,899	3,345	47,680
2023	124,510	45,271	169,781	16,103	45,087	28,985	56,245	39,872	16,373	3,429	48,787
2024	125,097	53,704	178,801	16,960	47,495	30,534	56,634	40,758	15,876	3,514	49,924
2025	125,585	62,484	188,069	17,845	49,972	32,127	57,083	41,657	15,426	3,601	51,154
2026	126,176	71,485	197,661	18,761	52,546	33,785	57,596	42,592	15,004	3,689	52,478
2027	127,196	80,724	207,921	19,740	55,298	35,558	58,234	43,567	14,667	3,778	54,003
2028	129,093	89,737	218,830	20,781	58,235	37,454	59,059	44,571	14,488	3,868	55,811
2029	131,873	98,519	230,392	21,889	61,345	39,457	60,224	45,561	14,663	3,959	58,079
2030	135,565	107,121	242,685	23,071	64,639	41,568	62,134	46,578	15,556	4,052	61,176
2031	139,768	115,552	255,321	24,289	68,018	43,729	66,733	10,125	19,115	4,145	47,874 [b]
2032	144,048	124,398	268,446	25,561	71,526	45,965	7,560	0	0	4,238	52,906 [b]
2033	148,410	133,740	282,150	26,891	75,191	48,300	0	0	0	4,332	55,401 [b]
2034	152,860	143,605	296,465	28,280	79,018	50,737	0	0	0	4,426	58,061 [b]
2035	157,397	154,008	311,405	29,728	83,015	53,287	0	0	0	4,525	60,761 [b]
2036	162,015	164,976	326,991	31,238	87,177	55,940	0	0	0	4,630	63,605 [b]
2037	166,708	176,541	343,249	32,812	91,522	58,711	0	0	0	4,740	66,855 [b]
2038	171,466	188,734	360,200	34,452	96,052	61,600	0	0	0	4,849	69,918 [b]

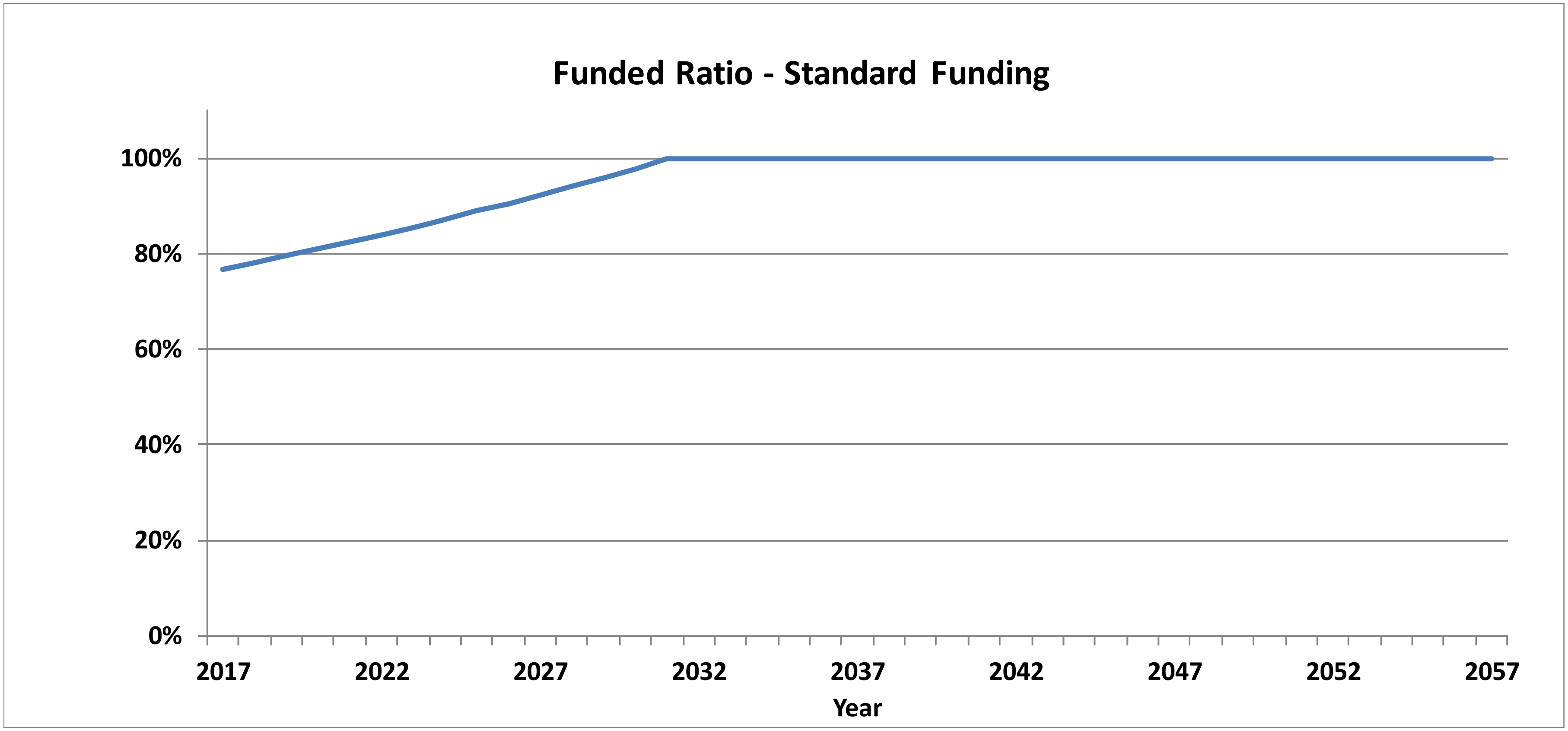
[a] *Assumes employer makes contributions for the applicable valuation plan year in the following fiscal year. Assumes the Premium Tax allocation is contributed in the following fiscal year.*

[b] *Amount required to remain at 100% funded.*

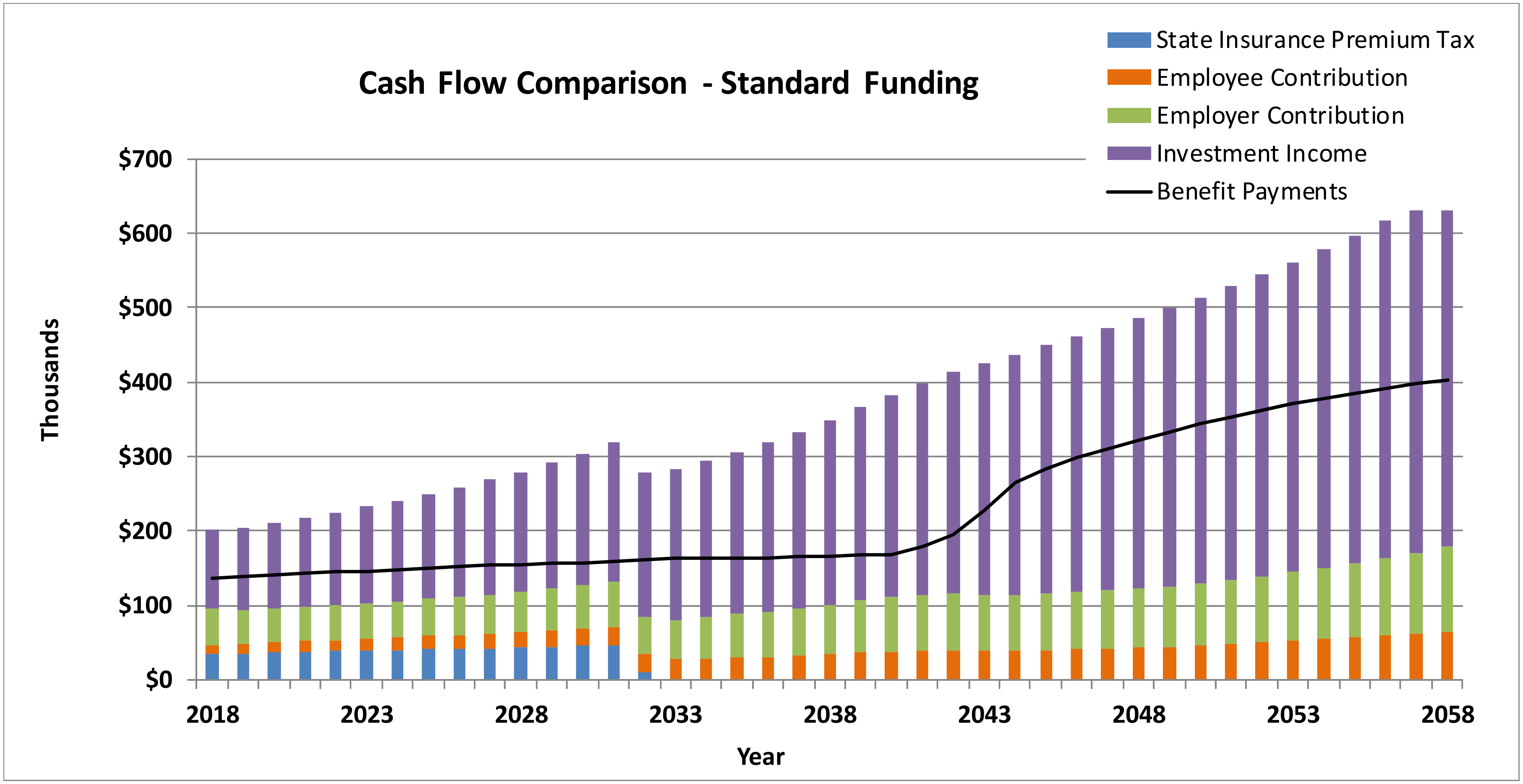
Actuarial Projections, Standard Funding, Graph 1



Actuarial Projections, Standard Funding, Graph 2



Actuarial Projections, Standard Funding, Graph 3



SECTION III

FUNDING POLICY CHOICES

Actuarial Projections – Standard and Optional Funding

Funding Policy Choices

West Virginia Code §8-22-20 allows a municipality's governing body (City Council) the choice of changing from the Standard funding policy to the Optional funding policy. The Optional funding policy is defined in West Virginia Code §8-22-20(e)(1), and is effective for plan years beginning after January 1, 2010.

If the City Council elects the Optional funding policy, the existing local Plan is closed, and new employees are covered in the multiple employer statewide plan – *Municipal Police Officers and Firefighters Retirement System.* Contributions to the statewide plan include:

- Employer contributions from 8.5% to 10.5% of pay. Currently, Employers contribute 8.5% of pay.
- Employee contributions of 8.5% of pay.

If the City Council elects the Optional funding policy, contributions to the closed local Plan include:

- Employer contributions equal to the normal cost, net of employee contributions, plus a 40-year closed period amortization from July 1, 1991, on a level dollar basis, of the unfunded actuarial accrued liability net of premium tax allocation applicable to the plan year.
- Employee contributions of 7.0% of pay if hired before January 1, 2010, which may be increased by up to 2.5% of pay if elected by the Board of trustees of the Plan. Employees hired after January 1, 2010, contribute 9.50% of pay.
- The premium tax allocation assigned to the Fund for the plan year.

For purposes of evaluating the implication of selecting the Optional funding policy, we have generated actuarial projections under the following scenario –

- The sponsor elects the Optional funding policy in plan year end June 30, 2019, applicable to fiscal year end June 30, 2020, contributions.

It is important to note that the plan sponsor can make only one election to the Optional funding policy, and that the election is irrevocable. The projections assume employer contributions of 10.5% of pay for future members covered under the statewide plan.

Actuarial Projections – Standard and Optional Funding (Continued)

Scenario I – Sponsor Immediately Elects the Optional Policy

The following table shows the employer contribution if the sponsor elects the Optional policy in plan year end 2019 applicable to fiscal year end 2020:

Total Employer Contributions for FYE June 30, 2020			
Funding Method	**Local Plan**	**Statewide Plan**	**Total**
Standard	$44,647	NA	$44,647
Optional	$42,832	$1,028	$43,860

Graphs I(1), I(2), and I(3) on the following pages, show the projected contribution and funded ratio pattern of the two funding policies. If the sponsor continues to make contributions under the Standard funding policy, employer contributions are projected to increase from $44,493 in fiscal year end 2019 to $47,874 for fiscal year end June 30, 2032, when the plan's funded ratio is projected to be 100%. After 2032, employer contributions are equal to net employer normal costs, on an open group basis.

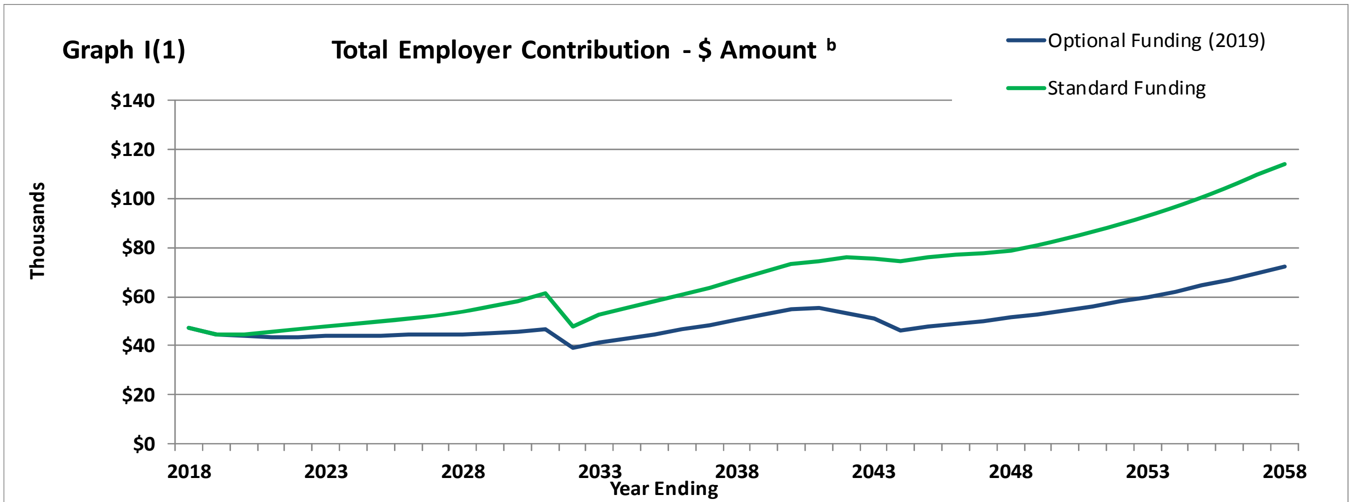
If the Optional funding policy is selected in plan year end 2019, total employer contributions to both the local plan and the statewide plan are projected to decrease from $44,647 to $43,860 in fiscal year end 2020. Total contributions are projected to decrease because employer contributions for new entrants under the statewide plan are fixed at 10.5% of pay, whereas the expected employer contributions for new entrants under the local plan are approximately equal to the net employer normal cost rate of 19% of pay.

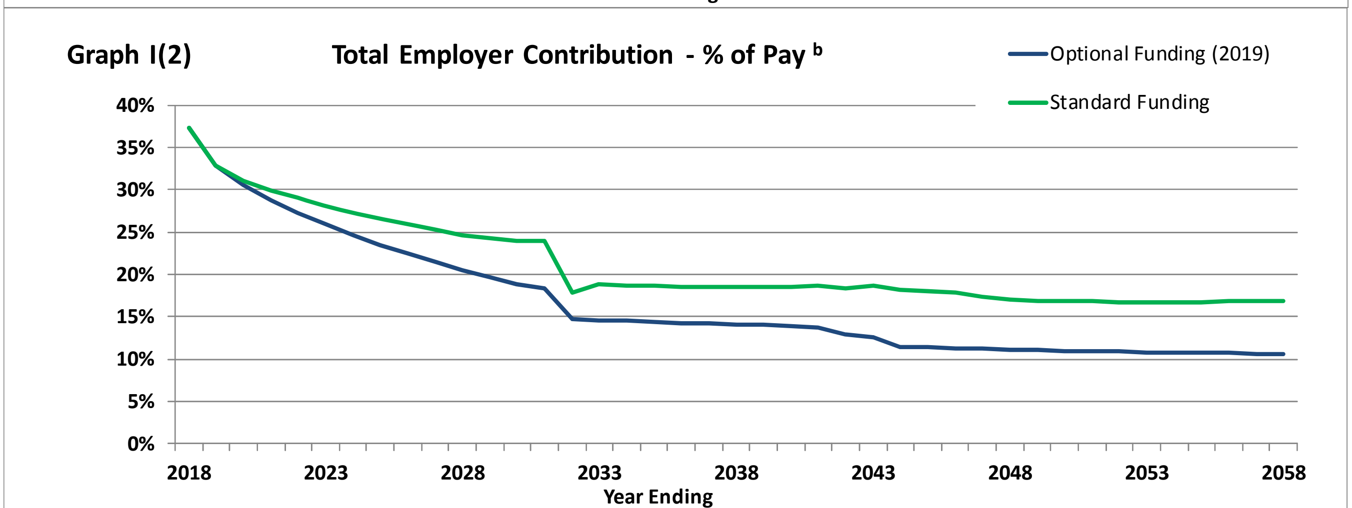
If the Optional funding policy is selected in fiscal year 2019, employer contributions to both the local plan and the statewide plan are projected to decrease from $43,860 in fiscal year 2020 to $46,811 in fiscal year 2031. After 2031, when the plan is projected to be fully funded, employer contributions are equal to net employer normal costs, for the closed local plan, plus 10.5% of pay for members covered under the statewide plan.

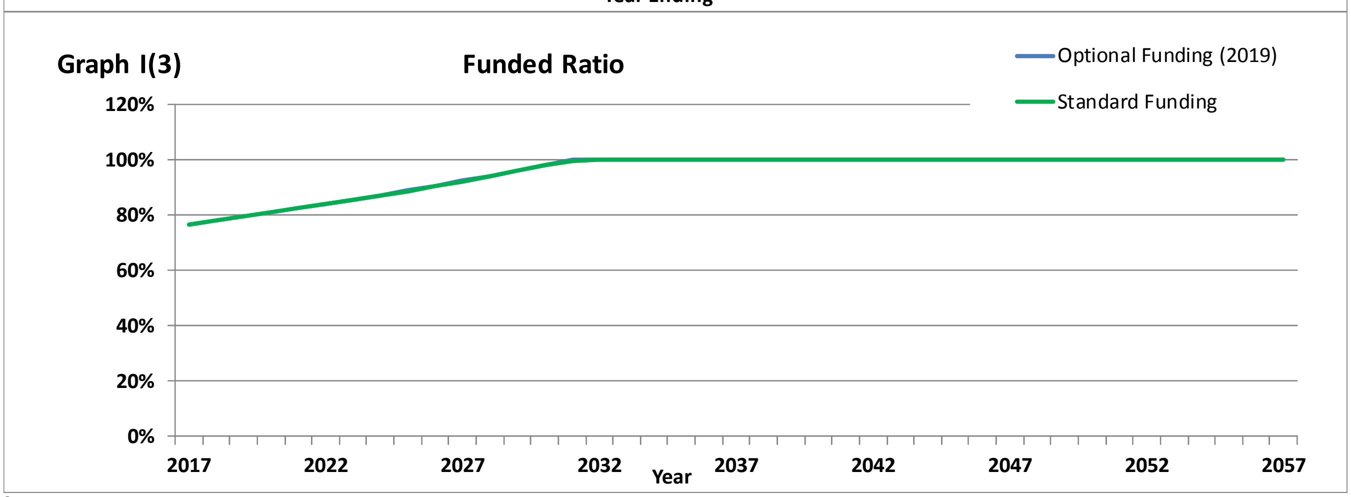
Both the Optional and Standard funding policies are consistent with actuarial standards of practice and produce a stable contribution pattern and reasonable growth in the funded ratio.

The details of the Optional funding policy projections can be found in the Appendix. The details of the Standard funding policy projection were presented in Section II.

Actuarial Projections – Standard and Optional Funding [a] (Continued)







[a] Assumes Sponsor elects Optional Funding Policy in 2019.

[b] Based on total pay and includes contributions for future members projected to participate in the statewide plan.

SECTION IV

ACTUARIALLY DETERMINED CONTRIBUTION FOR GASB STATEMENT NOS. 67. AND 68 REPORTING

Actuarially Determined Contribution for
GASB Statement Nos. 67 and 68 Reporting
Schedule C: Funding Progress and Employer Contributions

Valuation Date	**July 1, 2015**	**July 1, 2016**
Valuation Interest Rate	6.50%	6.50%
Cost-of-Living Adjustment	2.75%	2.75%
Wage Inflation	3.75%	3.75%
Actuarial Value of Assets	Market	Market
Actuarial Cost Method	Entry Age Normal	Entry Age Normal
Remaining Amortization Period [a]	16 Years, Level Dollar	15 Years, Level Dollar
Schedule of Funding Progress		
Actuarial Valuation Date	**July 1, 2015**	**July 1, 2016**
1. Market Value of Assets	$1,811,121	$1,639,748
2. Actuarial Accrued Liability	$2,235,186	$2,233,991
3. Unfunded Actuarial Accrued Liability (2 - 1)	$424,065	$594,243
4. Funded Ratio (1/2)	81%	73%
5. Expected Payroll	$131,253	$123,514
6. UAAL as Percentage of Covered Payroll (3/5)	323%	481%
Schedule of Employer Contributions [c]	**FYE 2017**	**FYE 2018**
1. Actuarially Determined Contribution		
(a) Employer Normal Cost	$20,908	$21,193
(b) Amortization of Unfunded Actuarial Accrued Liability	$42,069	$61,240
(c) Actuarially Determined Contribution (ADC) (a + b)	$62,977	$82,433
2. Employer Contribution	$21,463	$47,596 [b]
3. Premium Tax Allocation	$37,400	$34,837
4. Percentage of ADC Contributed [(2 + 3)/1(c)]	93%	100%

[a] *Suggested amortization policy to comply with GASB Statement Nos. 67 and 68 Standards.*

[b] *Estimated employer contribution for fiscal year end June 30, 2018. Employer Contribution cannot be less than net Employer Normal Cost.*

[c] *Satisfies the Actuarially Determined Contribution as defined by GASB Statement Nos. 67 and 68.*

SECTION V

ACTUARIAL VALUATION DATA AS OF JULY 1, 2017

Actuarial Valuation Data as of July 1, 2017
Schedule D: Reconciliation of Assets

Plan Year Ending	June 30, 2016	June 30, 2017
A. Market Value of Assets Beginning of Year	$1,811,121	$1,639,748
Adjustment to Market Value of Assets at Beginning of Year	($83,779)	$0
Market Value of Assets Beginning of Year	$1,727,342	$1,639,748
1. Revenue During Fiscal Year		
(a) Employee Contribution	$14,130	$12,209
(b) Governmental Contribution		
(i) From Local Government	$24,840	$21,463
(ii) From State Government	$83,780	$37,400
(iii) Reallocation from State Government	$0	$0
(iv) Total	$108,620	$58,863
(c) Earnings on Investments		
(i) Net Appreciation/(Depreciation)	($114,087)	$63,228
(ii) Bond Interest	$12,004	$11,900
(iii) Dividends	$41,580	$22,054
(iv) Net Realized Gain (Loss) on Sale/Exchange	$13,202	$14,934
(v) Other	$0	$0
(vi) Less Investment Expense	($6,630)	($6,238)
(vii) Total	($53,931)	$105,878
(d) Other Revenue	$0	$0
(e) Net Receivable Investment Income	$0	$0
(f) Receivable Contribution [a]		
(i) From Employee Contributions	$0	$0
(ii) From Local Government	$0	$0
(iii) From State Government	$0	$0
(iv) Total	$0	$0
(g) Total Revenue (sum of (a) through (f))	$68,819	$176,950
2. Expenditures During Fiscal Year		
(a) Benefits Paid	$144,538	$136,357
(b) Withdrawals	$11,130	$0
(c) Administrative Expenses	$745	$2,945
(d) Payable Benefits and Withdrawals	$0	$0
(e) Payable Administrative Expenses	$0	$0
(f) Total Expenditures (sum of (a) through (e))	$156,413	$139,302
B. Market Value of Assets End of Year [A + 1(g) - 2(f)]	$1,639,748	$1,677,396
C. Approximate Return on Assets	(3.20)%	6.41%

[a] *Receivable contributions for each respective plan year ending.*

Actuarial Valuation Data as of July 1, 2017
Schedule E: Assets Held by Category

Plan Year Ending	June 30, 2016		June 30, 2017	
1. Cash and Short-term Investments	$518,577	32%	$413,054	25%
2. Government Securities				
(a) US Treasury Bills, Notes and Bonds	$0		$0	
(b) US State and Local Governmental Debt Securities	$0		$0	
(c) Foreign Governmental Debt Securities	$0		$0	
(d) Other	$26,777		$0	
(e) Total Government Securities (sum of (a) through (d))	$26,777	2%	$0	0%
3. Corporate Fixed Income				
(a) US Bonds	$115,364		$0	
(b) US Mortgage or other Asset Backed Securities	$0		$0	
(c) US Mutual Fund Shares (Bonds)	$296,797		$198,035	
(d) US Exchange Traded Funds (Bonds)	$0		$152,403	
(e) International Bonds	$0		$0	
(f) International Mutual Fund Shares (Bonds)	$24,059		$100,614	
(g) International Exchange Traded Funds (Bonds)	$0		$0	
(h) Total Corporate Fixed Income (sum of (a) through (g))	$436,220	26%	$451,052	27%
4. Corporate Equity				
(a) US Equity	$227,555		$81,480	
(b) US Mutual Fund Shares (Equity)	$430,619		$355,991	
(c) US Exchange Traded Funds (Equity)	$0		$157,781	
(d) International Equity	$0		$0	
(e) International Mutual Fund Shares (Equity)	$0		$140,191	
(f) International Exchange Traded Funds (Equity)	$0		$77,847	
(g) Total Corporate Equity (sum of (a) through (f))	$658,174	40%	$813,290	48%
5. Alternative Investments				
(a) Real Estate Investment Trust	$0		$0	
(b) Private Equity Fund	$0		$0	
(c) Hedge Funds	$0		$0	
(d) Other Alternative Investments	$0		$0	
(e) Total Alternative Investments (sum of (a) through (d))	$0	0%	$0	0%
6. Other	$0	0%	$0	0%
7. Receivable Contributions	$0			
(a) From Employee Contributions	$0		$0	
(b) From Local Government	$0		$0	
(c) From State Government	$0		$0	
(d) Total Receivable Contributions (sum of (a) through (c))	$0	0%	$0	0%
8. Accruals				
(a) Receivable (other than State and Local Contributions)	$0		$0	
(b) Less Payable	$0		$0	
(c) Total	$0	0%	$0	0%
Market Value of Assets End of Year [sum of (1) through (8)]	**$1,639,748**		**$1,677,396**	

Actuarial Valuation Data as of July 1, 2017
Schedule F: Summary of Participant Activity

	Actives	Retirees	Disabled	Deferred Vested	Spouses and Beneficiaries	Totals
Total Participants July 1, 2016:	**3**	**4**	**0**	**0**	**1**	**8**
New Actives:						**0**
Returned to Actives Status:						**0**
Data Corrections/Other Changes:						**0**
Vested Terminations:						**0**
Non-Vested Terminations:						**0**
Disabled:						**0**
Retirements:						**0**
Deaths with Beneficiary:		(1)			1	**0**
Deaths w/o Beneficiary:						**0**
Expired Annuity or Stop Payment:						**0**
Net Changes:	0	(1)	0	0	1	**0**
Total Participants June 30, 2017:	**3**	**3**	**0**	**0**	**2**	**8**

Actuarial Valuation Data as of July 1, 2017

Schedule G: Distribution of Active Employees by Age and Length of Service

Attained Age	Years of Service to Valuation Date: Less than 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 35	Totals	Valuation Payroll[a]
Under 20											$ 0
20-24		2								2	$ 88,191
25-29		1								1	$ 40,330
30-34											$ 0
35-39											$ 0
40-44											$ 0
45-49											$ 0
50-54											$ 0
55-59											$ 0
60-64											$ 0
65-69											$ 0
Over 70											$ 0
Totals	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**$ 128,521**

Averages

Age:	25.0	years
Service:	2.4	years
Annual Pay:	$42,840	[a]

[a] *Based on payroll at beginning of plan year.*

Actuarial Valuation Data as of July 1, 2017
Schedule H: Participants Summary

Active Participants	July 1, 2016	July 1, 2017
Number of Actives	3	3
Total Annual Pay	$122,783	$128,521
Average Age	24.0	25.0
Average Service	1.4	2.4

Inactive Participants	July 1, 2016		July 1, 2017	
Type	No.	Annual Benefit	No.	Annual Benefit
Retirees	4	$130,604	3	$103,760
Survivors	1	$13,983	2	$30,624
Disabled Members	0	$0	0	$0
Deferred Vested Members	0	$0	0	$0

SECTION VI

ACTUARIAL ASSUMPTIONS AND METHODS

Discount Rate

The following table outlines the factors used to determine the discount rate:

Funded Ratio as of Valuation Date [1]	Liquidity Ratio [2]	Equity Exposure [3]	Projected Funded Ratio after 15 Years [1]	Discount Rate
60% or more	10	50% or more	70% or more	6.5%
40% or more	8	40% or more	60% or more	6.0%
30% or more	6	30% or more	50% or more	5.5%
15% or more	4	n/a	40% or more	5.0%
Less than 15%	n/a	n/a	15% or more	4.5%
Less than 15%	n/a	n/a	Less than 15%	4.0%

[1]Funded ratios based on a 6.0% investment return assumption for plans using an actuarially sound policy (standard or optional) and a 5.5% investment return assumption for other plans (alternative or conservation).
[2]Liquidity ratio equals assets as of the actuarial valuation date divided by expected benefit payments for the year.
[3]Based on investment policy.

As of June 30, 2017	
Assets	$1,677,396
Liabilities using a 6.00% discount rate	$2,335,554
Funded Ratio	72%
Expected Benefit Payments	$137,122
Liquidity Ratio	12.23
Equity Exposure [a]	50%
Projected Funded Ratio after 15 years	100%

Discount Rate	6.50%

[a] *Target equity allocation according to Fund's investment policy.*

Actuarial Assumptions and Methods
Used in the Valuation as of July 1, 2017 (Continued)

The premium tax allocation is projected using the following methodology:

(1) The Base Allocation for all Pension and Relief Funds is a fixed amount equal to $8,709,689 in all future years. This amount is allocated to each individual Pension and Relief Fund in proportion to the number of eligible members, which includes active members covered in either the Pension and Relief Fund or the statewide plan, Municipal Police Officers and Firefighters Retirement System ("MPFRS").

(2) The Excess Allocation is equal to the excess of the current year premium tax assigned to all Pension and Relief Funds over the total Base Allocation. This amount is allocated to each individual Pension and Relief Fund in proportion to the number of eligible active and retired members covered in either the Pension and Relief Fund or the MPFRS.

(3) We have assumed all Pension and Relief Funds will make the minimum statutory contribution requirement and will receive 100% of both the Base Allocation and the Excess Allocation assigned to the individual plan. Consequently, the projections do not include any reallocation of Expired Premium Tax Allocation for plan years beginning on and after July 1, 2019.

(4) The total available premium tax allocation, net of expenses, as of September 1, 2018, includes a Base Allocation of $8,709,689, an Excess Allocation of $9,570,473, and an Expired Premium Tax Allocation of $237,031.

(5) For the plan year ending June 30, 2018, all Pension and Relief Funds reported a total of 1,717 eligible active members and 2,165 eligible retired members. The City of Chester Policemen's Pension and Relief Fund reported 3 eligible active members and 5 eligible retired members, based on the average number of plan participants for the 12-month period ending June 30, 2018. The Fund is eligible to receive a premium tax allocation of $35,437 for the fiscal year ending June 30, 2019.

(6) The total premium tax allocation was assumed to increase by 2.75% in calendar years ending on and after 2019.

Actuarial Assumptions and Methods
Used in the Valuation as of July 1, 2017 (Continued)

General Inflation	2.75%
Expected Salary Increase	General Inflation: 2.75% *plus* Wage Inflation Increment: 1.00% *plus*
Service-based Increase:	Years of <u>Service</u> — <u>Increase</u> 1 — 20.00% 2 — 6.50% 3 — 3.50% 4 — 2.75% 5-9 — 2.50% 10-29 — 2.00% 30-34 — 1.25% after 34 years of service — 0.00%
Post-retirement COLA	2.75% on first $15,000 of Annual Benefit and on the accumulated supplemental pension amounts for prior years. Assumed to be payable to all members receiving payments.
Increase in State Insurance Premium Tax Allocation	2.75% on and after year 1
Cost Method	Entry-Age-Normal, Level-Percentage-of-Pay
Amortization Policies:	
Alternative Plans and former Alternative Plans that selected the Conservation Policy	For GASB 67/68 Accounting: 30 – Year Closed Level-Percentage-of-Pay Amortization (from July 1, 2010 – 23 years remaining as of July 1, 2017).
Standard Plans and former Standard Plans that selected the Optional Policy	For funding and GASB 67/68 Accounting: 40-Year Closed Level-Dollar Amortization (from July 1, 1991 – 14 years remaining as of July 1, 2017)
Former Alternative Plans that selected the Optional Policy	For funding: 40-Year Closed Level-Dollar Amortization (from January 1, 2010 – 32.5 years remaining as of July 1, 2017). For GASB 67/68 Accounting: 30-Year Closed Level-Percentage-of-Pay Amortization (from July 1, 2010 – 23 years remaining as of July 1, 2017)

Asset Method	Market Value
Turnover	Sample Rates – Age / Rates 25 / 9% 35 / 4% 45 / 2% 50 / 0%
Retirement	Age / Rates[a] 50 / 45% 51-55 / 30% 56-59 / 35% 60 / 100% [a]*Terminated vested participants are assumed to retire at age 50.*
Mortality	Active: RP-2014 Blue Collar Healthy Employee[b] Post-Retirement: RP-2014 Blue Collar Healthy Annuitant Disabled: RP-2014 Blue Collar Healthy Annuitant set forward four years Tables above incorporate generational mortality improvement using MP-2014 2-dimensional mortality improvement scales [b]*Assumes 10% of deaths are duty-related and 90% are non-duty related.*
Disability	Sample Rates – Age / Rates[c] 30 / 0.22% 40 / 0.50% 50 / 0.79% [c] *Assumes 60% duty related and 40% non-duty related. Also assumes 10% of non-duty disabled members receive a 20% reduction in benefits due to gainful employment.*
Percent Married	90%
Spouse Age	Females 3 years younger than males

Administrative Expenses	Plan year end June 30, 2018, expense based on plan year end June 30, 2017 expense increased by general inflation assumption. Future expenses assumed to increase by the general inflation assumption.
Refunds Paid	Assumes non-vested inactive members as of July 1, 2017, with accumulated member contribution balances will receive a refund of their contributions during plan year end June 30, 2018.
Data Adjustments and Assumptions	None
Child Beneficiaries	Future survivor widow benefits are loaded by 12% to estimate impact of benefits provided to survivor children. The load assumes 90% of members are married with two children at time of death, and benefits for each child are paid for approximately 8 years.
General Projection Methodology	Open group projections assume: (i) Salaries will increase and members will decrement as specified in the actuarial assumption section. (ii) Active members who retire, become disabled, die or terminate during the year are replaced with new entrants such that the number of active members remains stable during the projections period. Pay for new entrants in future years is increased by the wage inflation assumption. The average age of a new entrant is based on observed experience over the last five years. (iii) Assets grow at the assumed rate of return. (iv) The sponsor makes the statutory required contribution on a monthly basis. (v) Non-vested members with accumulated plan balances as of July 1, 2017, will receive a refund during plan year end June 30, 2018. Closed group projections are the same as the open group projections except active members who retire, become disabled, die, or terminate are <u>not</u> replaced with new entrants.
Decrement Timing	Mid-Year

SECTION VII

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Summary of Principal Plan Provisions
Actuarial Valuation as of July 1, 2017

Employee Eligibility — All compensated employees of the Police Department are eligible to participate in the Policemen's Pension and Relief Fund.

Average Annual Compensation — The average of any three twelve-consecutive-month periods of employment which produces the highest average annual compensation.

Each twelve-consecutive-month annual compensation is limited to 120% of the *Average Adjusted Salary* received by the member in the two consecutive twelve-consecutive-month periods immediately preceding the twelve-consecutive-month period used in determining benefits.

The *Average Adjusted Salary* is base salary (exclusive of all overtime and other pay) of the year used in determining benefits multiplied by the ratio of total salary (includes all overtime and other pay) to base salary from the respective preceding twelve-consecutive-month period.

Determining Years of Service Credit (Credited Service**)** — The number of years that the member has contributed to the employees retirement and benefit fund.

Prior Military Service — A city may provide that members who have been honorably discharged from the military shall receive up to two years prior service credit for military service prior to their employment with the city.

Current Military Service — Any current member who has been on qualified military service in the armed forces of the United States with an honorable discharge may, within six months from his or her date of discharge, be given credit for continuous service in the paid police or fire department.

Any member who has served in active duty with the armed forces of the United States, whether prior to or subsequent to becoming a member of a paid police or fire department, shall receive one additional percent for each year so served in active military duty, up to a maximum of four additional percent.

Absence from the service because of sickness or injury for a period of two years or less shall not be construed as time out of service.

Contributions — Participating employees contribute 7.0% of compensation. Participating employees hired on or after January 1, 2010, contribute 9.5% of pay. The municipality has elected to contribute the minimum employer contribution under the Standard funding policy.

Normal Retirement — Members are eligible at the earlier of age 50 with 20 years of credited service or age 65.

Benefit Commencement — Annual retirement pension benefits commence upon retirement or upon the member attaining age fifty, whichever is later, payable in twelve monthly installments.

Accrued Benefit — The annual retirement benefit equals 60% of average annual compensation, not less than $6,000, plus an additional percentage of average annual compensation for service over 20 years equal to 2% for each year of service between 20 and 25 and 1% for each year of service between 25 and 30 years. Employees serving in the military are eligible for an additional 1% of average annual compensation for each year of military service up to four years. The maximum benefit is limited to 75% of average annual compensation. Benefits continue for life.

Disability Retirement — Members are eligible after earning five years of service. No service requirement if disability is service related.

The monthly disability benefit equals the greater of 60% of monthly salary at disability or $500. Employees serving in the military are eligible for an additional benefit of 1% of monthly salary at disability for each year of military service up to four years. Disability benefits, when aggregated with monthly state workers compensation benefits, shall not exceed 100% of the member's monthly compensation at the time of disability. Benefits continue for life or until recovery.

Death Benefits — Members are eligible after earning five years of service. No service requirement if death is service related. Retirees and terminated vested participants are also eligible.

The benefit is equal to 60% of the participant's benefit, but not less than $300 per month, payable to the spouse until death or remarriage. Other dependents (children, parents, brothers and sisters) are also eligible for death benefits. To each dependent child, 20 percent of the participant's benefit until the child attains eighteen or marries; to each dependent orphaned child, 25 percent of the participant's benefit until the child attains 18 or marries; to each dependent parent, 10 percent of the participant's benefit for life and to each dependent brother or sister, the sum of $50 per month (but a total not to exceed $100 per month) until such individual attains the age of 18 years or marries.

In no case shall the payments to the surviving spouse and children be reduced below 65 percent of the total amount paid to all dependents.

Supplemental Pension Benefits — All retirees, surviving beneficiaries and disability pensioners are eligible for automatic cost-of-living benefits commencing on the first day of July following two years of retirement. The benefits equal the percentage increase in the Consumer Price Index, limited to 4% (2% for some disability retirees), multiplied by the sum of the allowable amount which is the first $15,000 of the total annual benefits paid and the accumulated supplemental pension amounts for prior years.

Termination Benefits — Any member who terminates employment prior to retirement will be entitled to a refund of contributions without interest.

Refunds — Any member who terminates from their department without receiving a retirement pension shall be refunded all deductions made from his salary, without interest. Any member who receives such a refund and subsequently wishes to reenter the department must repay to the pension fund all sums refunded with interest at the rate of eight percent annual.

SECTION VIII

APPENDIX – PROJECTION DATA

Actuarial Projections – Optional Funding in 2019
Table A-1

Valuation Plan Year End 30-Jun	Number Active	Number Pay Status	Closed Group Payroll	Total Assets: Assets (boy)	Benefit Payments	Administrative Expenses	Employer Contributions	Employee Contributions	Premium Tax Allocation Contributions	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	3	5	$123,514	$1,639,748	$136,357	$2,945	$21,463	$12,209	$37,400	$105,878	$1,677,396	$2,191,427	$514,031	77%
2018	3	5	127,643	1,677,396	137,122	3,026	47,596	12,126	34,837	107,572	1,739,379	2,227,293	487,914	78%
2019	3	5	125,745	1,739,379	138,962	3,004	44,493	11,946	35,437	111,458	1,800,747	2,263,022	462,275	80%
2020	2	5	124,305	1,800,747	140,673	2,997	42,832	11,809	36,530	115,370	1,863,618	2,298,976	435,358	81%
2021	2	5	123,770	1,863,618	142,249	3,003	41,734	11,758	37,344	119,395	1,928,596	2,335,499	406,903	83%
2022	2	5	123,934	1,928,596	144,064	3,019	40,814	11,774	38,162	123,556	1,995,819	2,372,618	376,799	84%
2023	2	5	124,510	1,995,819	145,812	3,040	40,018	11,828	38,997	127,873	2,065,683	2,410,486	344,803	86%
2024	2	5	125,097	2,065,683	147,780	3,065	39,273	11,884	39,872	132,356	2,138,223	2,449,005	310,782	87%
2025	2	5	125,585	2,138,223	149,564	3,091	38,535	11,931	40,758	137,020	2,213,812	2,488,250	274,438	89%
2026	2	5	126,176	2,213,812	151,281	3,118	37,787	11,987	41,657	141,884	2,292,727	2,528,511	235,784	91%
2027	2	5	127,196	2,292,727	152,397	3,148	37,022	12,084	42,592	146,984	2,375,865	2,570,520	194,655	92%
2028	2	5	129,093	2,375,865	153,390	3,183	36,314	12,264	43,567	152,370	2,463,808	2,614,782	150,974	94%
2029	2	5	131,873	2,463,808	154,248	3,224	35,778	12,528	44,571	158,082	2,557,295	2,661,805	104,510	96%
2030	1	5	135,565	2,557,295	154,981	3,269	35,507	12,879	45,561	164,167	2,657,159	2,712,151	54,992	98%
2031	1	5	139,768	2,657,159	156,482	3,318	35,563	13,278	46,578	170,655	2,763,433	2,765,415	1,982	100%
2032	1	5	144,048	2,763,433	157,915	3,366	27,287	13,685	2,818	175,865	2,821,806	2,821,806	0	100%
2033	1	5	148,410	2,821,806	159,260	3,413	28,864	14,099	0	179,589	2,881,684	2,881,684	0	100%
2034	1	5	152,860	2,881,684	159,439	3,459	29,642	14,522	0	183,512	2,946,462	2,946,462	0	100%
2035	1	4	157,397	2,946,462	159,257	3,507	30,517	14,953	0	187,768	3,016,936	3,016,936	0	100%
2036	1	4	162,015	3,016,936	158,814	3,559	31,335	15,391	0	192,402	3,093,691	3,093,691	0	100%
2037	1	4	166,708	3,093,691	159,465	3,614	32,190	15,837	0	197,410	3,176,049	3,176,049	0	100%
2038	1	4	171,466	3,176,049	159,964	3,667	33,069	16,289	0	202,788	3,264,564	3,264,564	0	100%
2039	1	4	176,278	3,264,564	160,303	3,718	33,920	16,746	0	208,571	3,359,780	3,359,780	0	100%

Actuarial Projections – Optional Funding in 2019
Table A-2

Employer Contributions

Valuation Plan Year End 30-Jun [a]	Closed Group Payroll	New Entrant Payroll	Total Payroll	Employee Contributions	Gross Normal Cost	Net Employer Normal Cost	Amortization of UAAL	Premium Tax Allocation Contributions	Net Employer Amortization	Expenses	Optional Employer Contribution	Statewide Employer Contribution
2018	$127,643	$0	$127,643	$12,126	$33,771	$21,645	$55,259	$35,437	$19,822	$3,026	$44,493	$0
2019	125,745	9,788	135,533	11,946	33,328	21,382	54,977	36,530	18,447	3,004	42,832	1,028
2020	124,305	19,351	143,656	11,809	32,985	21,176	54,904	37,344	17,560	2,997	41,734	2,032
2021	123,770	28,383	152,153	11,758	32,865	21,107	54,866	38,162	16,704	3,003	40,814	2,980
2022	123,934	36,846	160,780	11,774	32,922	21,148	54,848	38,997	15,851	3,019	40,018	3,869
2023	124,510	45,271	169,781	11,828	33,078	21,250	54,855	39,872	14,983	3,040	39,273	4,753
2024	125,097	53,704	178,801	11,884	33,238	21,354	54,874	40,758	14,116	3,065	38,535	5,639
2025	125,585	62,484	188,069	11,931	33,375	21,444	54,909	41,657	13,252	3,091	37,787	6,561
2026	126,176	71,485	197,661	11,987	33,550	21,563	54,933	42,592	12,341	3,118	37,022	7,506
2027	127,196	80,724	207,921	12,084	33,839	21,755	54,979	43,567	11,412	3,148	36,314	8,476
2028	129,093	89,737	218,830	12,264	34,371	22,107	55,059	44,571	10,488	3,183	35,778	9,422
2029	131,873	98,519	230,392	12,528	35,135	22,607	55,237	45,561	9,676	3,224	35,507	10,344
2030	135,565	107,121	242,685	12,879	36,127	23,248	55,624	46,578	9,046	3,269	35,563	11,248
2031	139,768	115,552	255,321	13,278	37,247	23,969	56,751	2,818	0	3,318	27,287	12,133 [b]
2032	144,048	124,398	268,446	13,685	38,384	24,699	2,045	0	0	3,366	28,864	13,062 [b]
2033	148,410	133,740	282,150	14,099	39,546	25,447	0	0	0	3,413	29,642	14,043 [b]
2034	152,860	143,605	296,465	14,522	40,730	26,208	0	0	0	3,459	30,517	15,078 [b]
2035	157,397	154,008	311,405	14,953	41,941	26,988	0	0	0	3,507	31,335	16,171 [b]
2036	162,015	164,976	326,991	15,391	43,167	27,776	0	0	0	3,559	32,190	17,322 [b]
2037	166,708	176,541	343,249	15,837	44,416	28,579	0	0	0	3,614	33,069	18,537 [b]
2038	171,466	188,734	360,200	16,289	45,682	29,393	0	0	0	3,667	33,920	19,817 [b]
2039	176,278	201,593	377,871	16,746	46,960	30,214	0	0	0	3,718	34,809	21,167 [b]

[a] *Assumes employer makes Optional Policy contributions to the closed local plan in the fiscal year following the valuation year. Assumes the Premium Tax allocation is contributed in the following fiscal year.*

[b] *Amount required to remain at 100% funded.*