City Of Vienna, West Virginia Policemen’s Pension and Relief Fund

Actuarial Valuation Report for the Year Beginning July 1, 2017

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August 22, 2018

Ms. Amy Roberts
Finance Director
609 29th Street
Vienna, WV 26105

Sgt. Scott A. Hughes
Pension Board Secretary
City of Vienna Policemen's Pension and Relief Fund

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

Dear Ms. Roberts and Sgt. Hughes:

Upon the request of the Municipal Pensions Oversight Board, we have performed an actuarial valuation as of July 1, 2017, for the City of Vienna, 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

Contents

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 Vienna, 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	$7,603,876
Actuarial Accrued Liability	$9,858,499
Unfunded Actuarial Accrued Liability	$2,254,623
Funded Ratio	77.13%

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	$997,461
Employer Normal Cost for PYE 06/30/2017	$234,140
Employer Normal Cost Rate for PYE 06/30/2017	23.5%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2017	$334,711
State Insurance Premium Tax Allocation for FYE 06/30/2018	$187,488
Employer Contribution for FYE 06/30/2018 [a]	$381,363

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	$987,450
Employer Normal Cost for PYE 06/30/2018	$234,766
Employer Normal Cost Rate for PYE 06/30/2018	23.8%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2018	$242,376
State Insurance Premium Tax Allocation for FYE 06/30/2019	$183,564
Estimated Employer Contribution for FYE 06/30/2019 [a]	$293,578

[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 Vienna 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 16.48, equity allocation of 60%, 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 10.69% 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 ($281,542).

- 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 ($592,400) 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 $293,578 for the fiscal year end June 30, 2019, to $363,591 for fiscal year end June 30, 2032, when the plan reaches 100% funding.
- 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% 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		$997,461		$987,450
Average Pay		$49,873		$49,372
Expected Benefit Payments		$413,447		$461,349
1. Actuarial Accrued Liability	No.		No.	
(a) Actives	20	$4,991,642	20	$4,335,282
(b) Retirees	7	$3,148,865	7	$3,757,162
(c) Survivors	2	$476,640	2	$478,777
(d) Disabled Members	4	$1,305,579	4	$1,287,278
(e) Deferred Vested Members	0	$0	0	$0
(f) Total	33	$9,922,726	33	$9,858,499
2. Present Value of Future Normal Costs		$2,782,595		$3,037,751
3. Present Value of Benefits (1(f) + 2)		$12,705,321		$12,896,250
4. Market Value of Assets		$6,674,873		$7,603,876
5. Unfunded Actuarial Accrued Liability (1(f) - 4)		$3,247,853		$2,254,623
6. Funded Ratio (4 / 1(f))		67.27%		77.13%
7. Net Employer Normal Cost				
(a) Normal Cost		$304,953		$307,293
(b) Administrative Expenses		$5,359		$5,739
(c) Gross Normal Cost (a + b)		$310,312		$313,032
(d) Employee Contribution Rate [a]		7.64%		7.93%
(e) Expected Employee Contributions		$76,172		$78,266
(f) Net Employer Normal Cost (c - e)		$234,140		$234,766
(% of Compensation)		23.47%		23.77%
8. Estimated Minimum Employer Contribution [b]		**FYE 2018**		**FYE 2019**
(a) Expected Payroll		$997,461		$987,450
(b) Estimated Employer Normal Cost		$234,140		$234,766
(c) Employer Normal Cost Rate		23.47%		23.77%
(d) Amortization of Unfunded Actuarial Liability		$334,711		$242,376
(e) State Insurance Premium Tax Allocation		$187,488		$183,564
(f) Estimated Employer Contribution[c] (b + d - e)		**$381,363**		**$293,578**

[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	$9,922,726
	(b) Normal Cost due 7/1/2016	$304,953
	(c) Interest on (a) and (b) to 6/30/2017	$654,888
	(d) Benefit Payments with interest to 6/30/2017	$431,668
	(e) Effect of Assumption Changes	$0
	(f) Expected Liability at 7/1/2017 [(a) + (b) + (c) - (d) + (e)]	$10,450,899
	(g) Actual Liability at 7/1/2017	$9,858,499
	(h) Liability (Gain)/Loss [(g) - (f)]	**($592,400)**
2.	(a) Market Value of Assets as of 7/1/2016	$6,674,873
	(b) Interest on (a) to 6/30/2017	$433,014
	(c) Contributions with interest to 6/30/2017	$646,115
	(d) Benefit Payments with interest to 6/30/2017	$431,668
	(e) Expected Assets at 6/30/2017 [(a) + (b) + (c) - (d)]	$7,322,334
	(f) Actual Assets at 7/1/2017	$7,603,876
	(g) Asset (Gain)/Loss [(e) - (f)]	**($281,542)**
3.	Total (Gain)/Loss [1(h) + 2(g)]	**($873,942)**

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	20	13	$997,461	$6,674,873	$418,080	$38,257	$367,598	$81,389	$176,783	$759,570	$7,603,876	$9,858,499	$2,254,623	77%
2018	20	14	987,450	7,603,876	461,349	5,739	381,363	78,266	187,488	500,011	8,283,916	10,348,223	2,064,307	80%
2019	20	14	1,023,932	8,283,916	445,463	6,000	293,578	82,302	183,564	541,909	8,933,805	10,896,989	1,963,184	82%
2020	20	15	1,060,430	8,933,805	473,773	6,292	282,578	86,418	191,802	583,280	9,597,818	11,463,334	1,865,516	84%
2021	20	15	1,111,129	9,597,818	498,745	6,609	283,824	91,689	197,618	626,027	10,291,621	12,053,664	1,762,043	85%
2022	20	16	1,151,612	10,291,621	524,108	6,867	290,294	95,943	202,560	670,805	11,020,248	12,670,315	1,650,067	87%
2023	20	17	1,191,141	11,020,248	564,579	7,194	294,786	100,618	208,589	717,347	11,769,815	13,298,889	1,529,074	89%
2024	20	18	1,214,937	11,769,815	620,467	7,537	299,227	104,376	215,063	764,739	12,525,217	13,921,334	1,396,117	90%
2025	20	19	1,256,229	12,525,217	675,516	7,970	298,951	110,008	222,987	812,490	13,286,167	14,538,345	1,252,178	91%
2026	20	19	1,308,721	13,286,167	713,765	8,346	302,456	116,105	230,116	861,252	14,073,986	15,170,538	1,096,552	93%
2027	20	20	1,354,018	14,073,986	755,536	8,683	309,581	121,547	236,833	911,730	14,889,458	15,816,392	926,934	94%
2028	20	20	1,415,933	14,889,458	794,923	9,067	315,687	128,590	244,497	964,129	15,738,372	16,481,156	742,784	95%
2029	20	20	1,483,818	15,738,372	818,920	9,384	327,973	135,740	251,252	1,019,369	16,644,402	17,185,222	540,820	97%
2030	20	20	1,556,130	16,644,402	839,849	9,683	345,447	143,180	257,650	1,078,583	17,619,730	17,936,256	316,526	98%
2031	20	20	1,634,149	17,619,730	855,621	9,974	370,592	151,052	264,032	1,142,726	18,682,538	18,744,384	61,846	100%
2032	20	21	1,700,982	18,682,538	882,581	10,256	363,591	158,140	85,083	1,205,215	19,601,731	19,601,731	0	100%
2033	20	21	1,768,197	19,601,731	925,311	10,614	400,446	165,844	0	1,262,289	20,494,385	20,494,385	0	100%
2034	20	21	1,851,210	20,494,385	959,632	10,998	416,805	174,907	0	1,320,014	21,435,480	21,435,480	0	100%
2035	20	22	1,886,847	21,435,480	1,013,308	11,337	430,839	179,380	0	1,380,050	22,401,104	22,401,104	0	100%
2036	20	22	1,979,570	22,401,104	1,073,143	11,954	439,809	189,559	0	1,441,493	23,386,868	23,386,868	0	100%
2037	20	23	2,056,317	23,386,868	1,112,368	12,357	457,538	196,893	0	1,505,103	24,421,677	24,421,677	0	100%
2038	20	24	2,105,728	24,421,677	1,179,705	12,815	469,852	201,394	0	1,570,734	25,471,138	25,471,138	0	100%
2039	20	24	2,151,775	25,471,138	1,268,958	13,401	474,636	205,856	0	1,636,371	26,505,642	26,505,642	0	100%

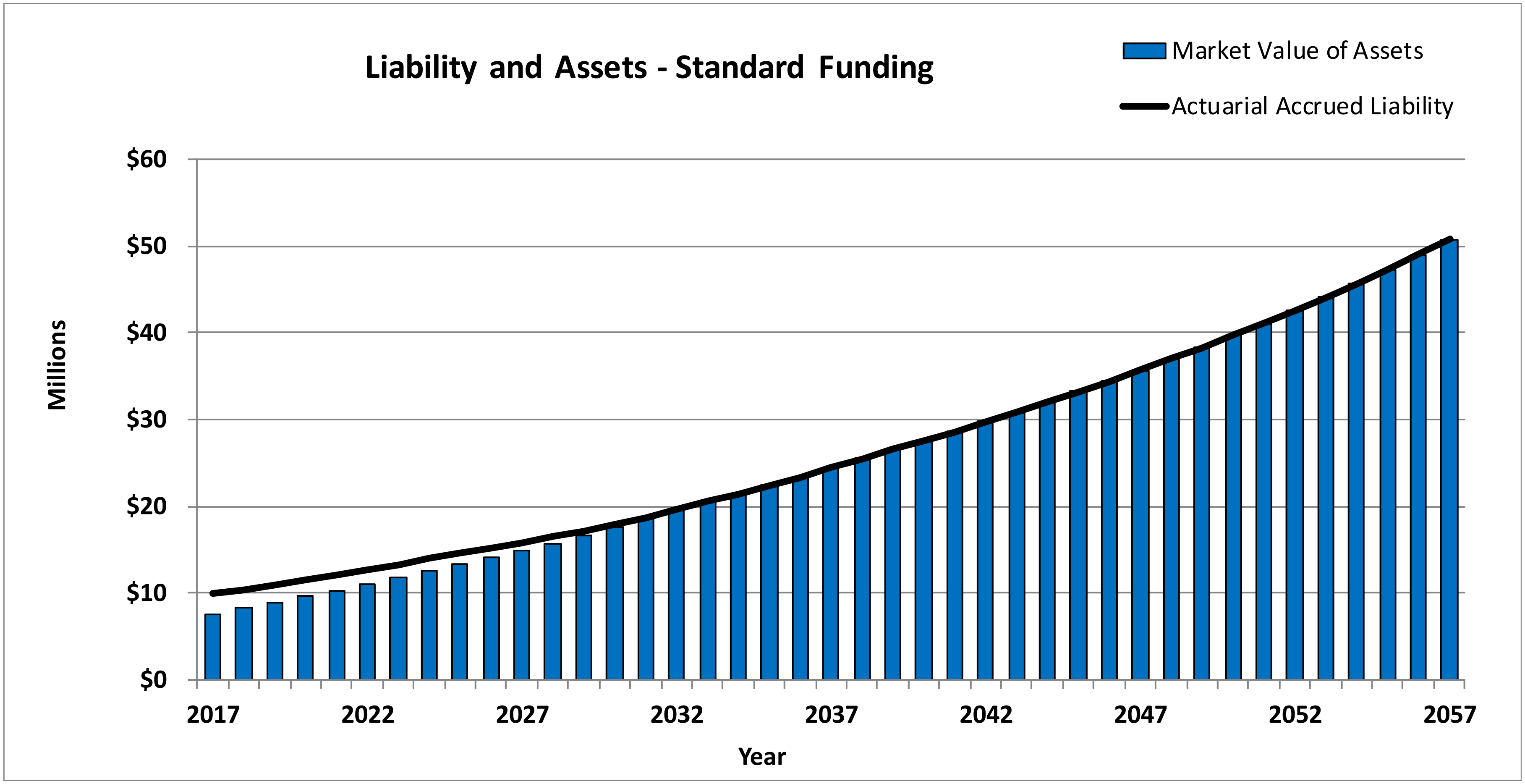
Actuarial Projections, Standard Funding, Table 2

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	$987,450	$0	$987,450	$78,266	$307,293	$229,027	$242,376	$183,564	$58,812	$5,739	$293,578
2019	977,486	46,446	1,023,932	82,302	318,080	235,778	232,602	191,802	40,800	6,000	282,578
2020	958,547	101,883	1,060,430	86,418	328,403	241,985	233,165	197,618	35,547	6,292	283,824
2021	947,037	164,092	1,111,129	91,689	342,834	251,145	235,100	202,560	32,540	6,609	290,294
2022	936,201	215,411	1,151,612	95,943	354,940	258,997	237,511	208,589	28,922	6,867	294,786
2023	910,709	280,432	1,191,141	100,618	367,496	266,878	240,219	215,063	25,156	7,194	299,227
2024	863,820	351,116	1,214,937	104,376	375,430	271,054	243,347	222,987	20,360	7,537	298,951
2025	812,888	443,340	1,256,229	110,008	387,945	277,937	246,665	230,116	16,549	7,970	302,456
2026	782,928	525,793	1,308,721	116,105	403,531	287,425	250,643	236,833	13,810	8,346	309,581
2027	753,069	600,949	1,354,018	121,547	417,359	295,813	255,689	244,497	11,192	8,683	315,687
2028	727,407	688,526	1,415,933	128,590	436,561	307,971	262,188	251,252	10,936	9,067	327,973
2029	719,635	764,183	1,483,818	135,740	457,689	321,949	271,764	257,650	14,114	9,384	345,447
2030	720,421	835,709	1,556,130	143,180	480,276	337,097	287,844	264,032	23,812	9,683	370,592
2031	727,653	906,496	1,634,149	151,052	504,670	353,618	326,651	85,083	56,249	9,974	363,591
2032	724,560	976,423	1,700,982	158,140	526,193	368,052	63,824	0	0	10,256	400,446 [b]
2033	702,082	1,066,115	1,768,197	165,844	548,552	382,708	0	0	0	10,614	416,805 [b]
2034	685,397	1,165,813	1,851,210	174,907	575,651	400,744	0	0	0	10,998	430,839 [b]
2035	629,921	1,256,926	1,886,847	179,380	584,892	405,511	0	0	0	11,337	439,809 [b]
2036	562,094	1,417,477	1,979,570	189,559	611,260	421,701	0	0	0	11,954	457,538 [b]
2037	523,817	1,532,501	2,056,317	196,893	634,637	437,744	0	0	0	12,357	469,852 [b]
2038	449,572	1,656,156	2,105,728	201,394	649,205	447,810	0	0	0	12,815	474,636 [b]

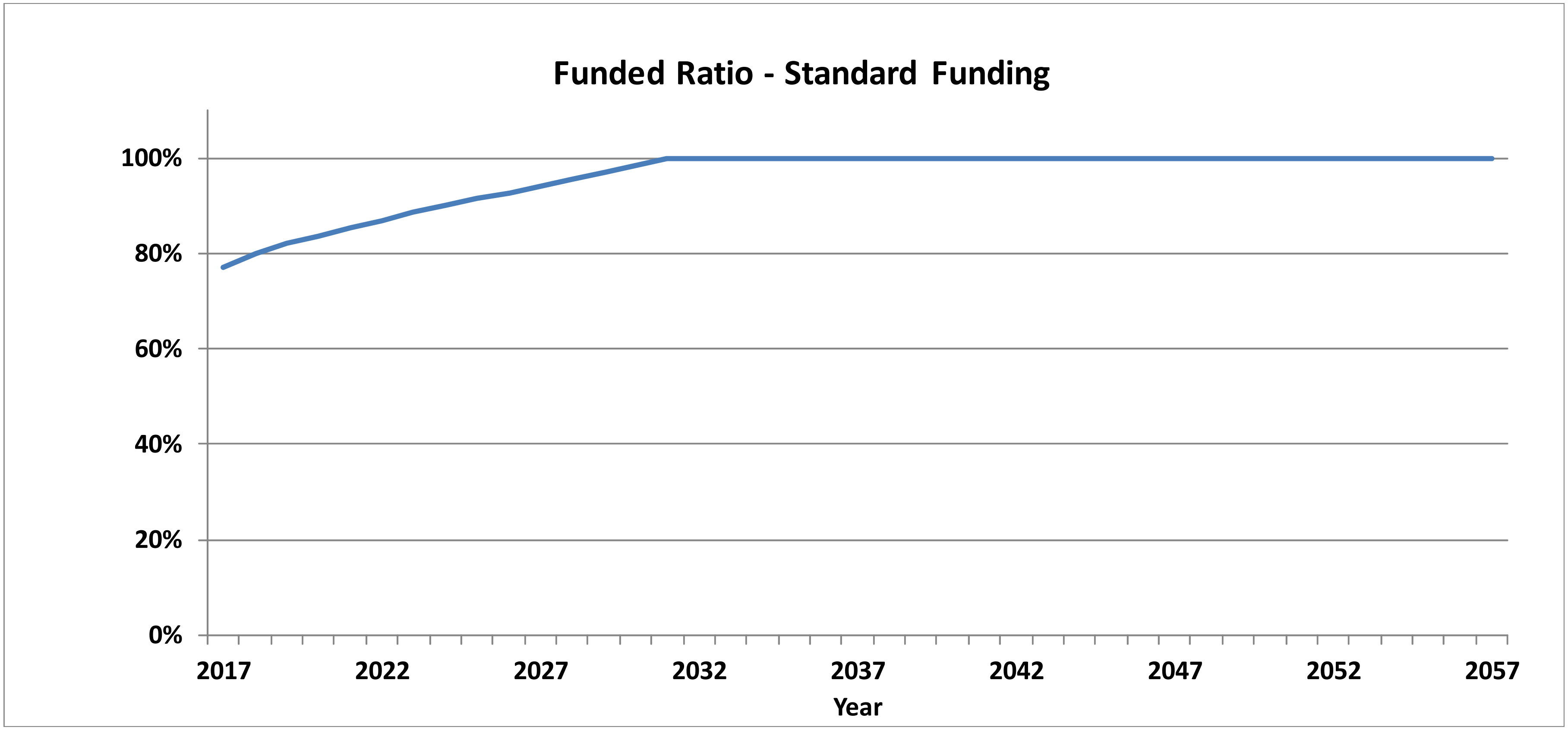
[a] *Assumes employer makes contributions for the applicable valuation plan year in the following fiscal year. Assumes the Premium Tax allocation is contributed in the following fiscal year.*

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

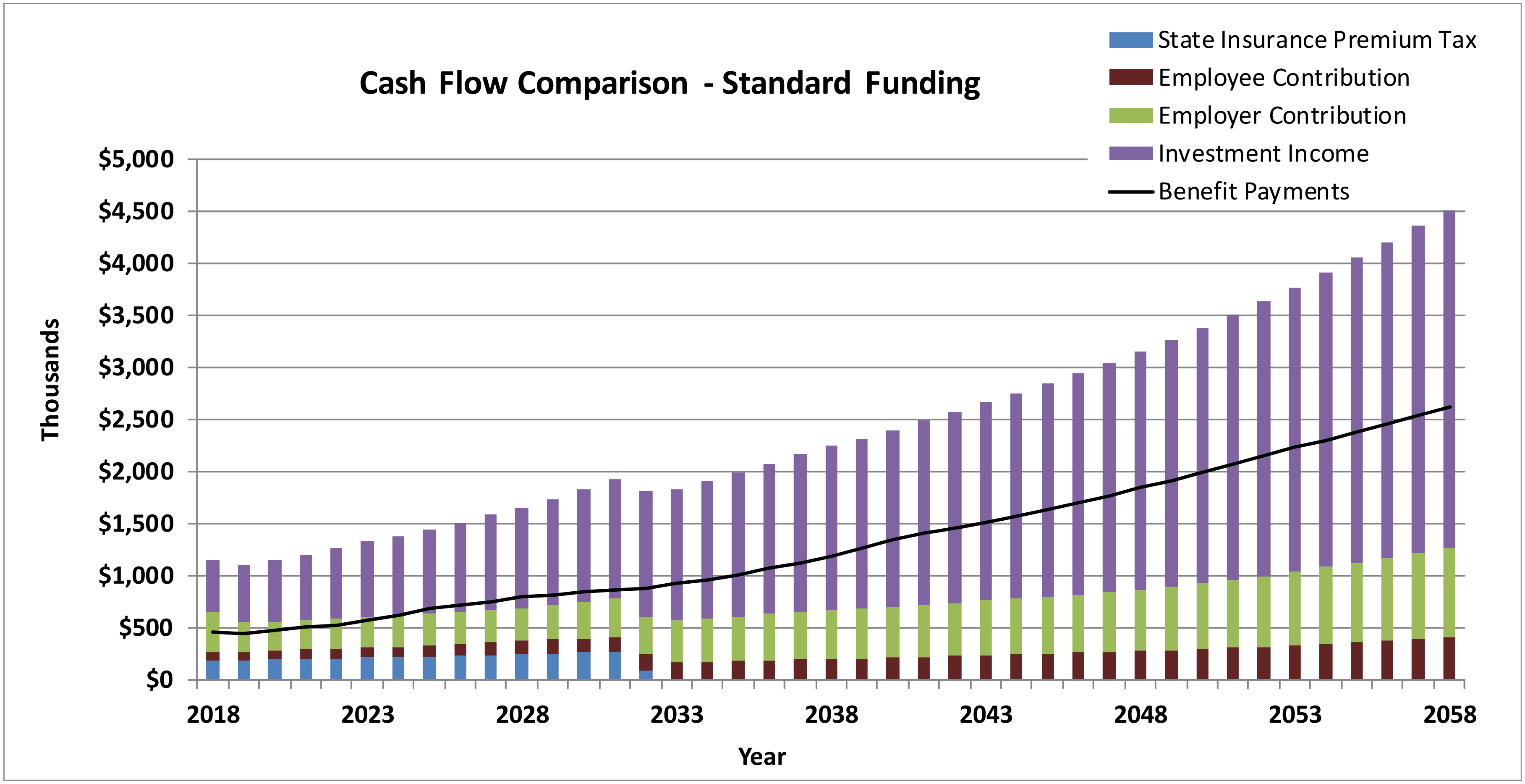
Actuarial Projections, Standard Funding, Graph 1



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	$282,578	NA	$282,578
Optional	$271,957	$4,877	$276,834

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 $293,578 in fiscal year end 2019 to $363,591 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.

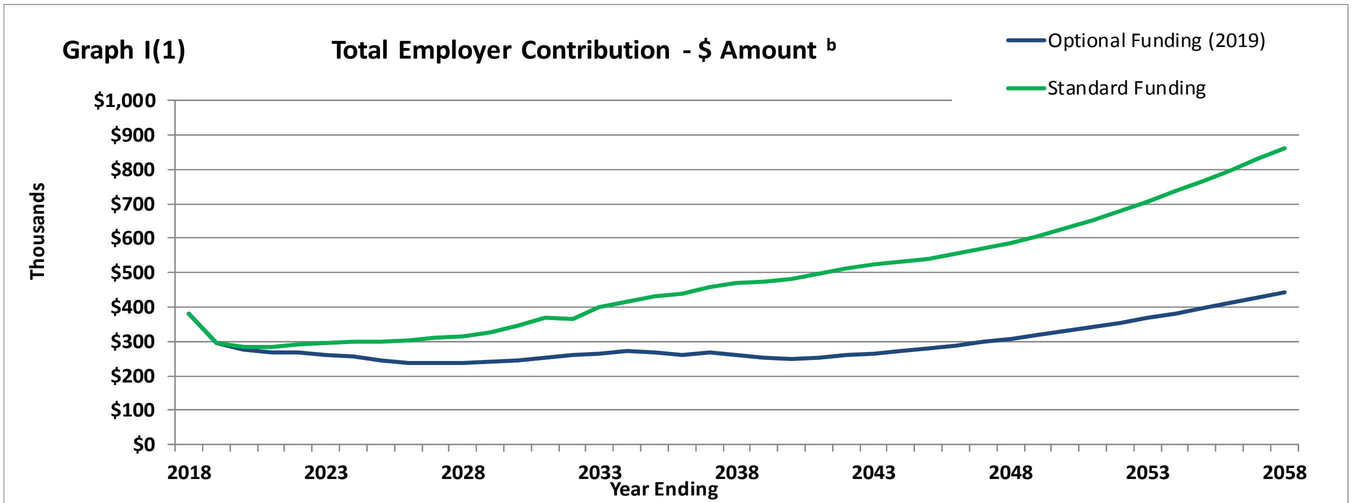
If the Optional funding policy is selected in plan year end 2019, total employer contributions to both the local plan and the statewide plan are projected to decrease from $282,578 to $276,834 in fiscal year end 2020. Total contributions are projected to decrease because employer contributions for new 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 24% of pay.

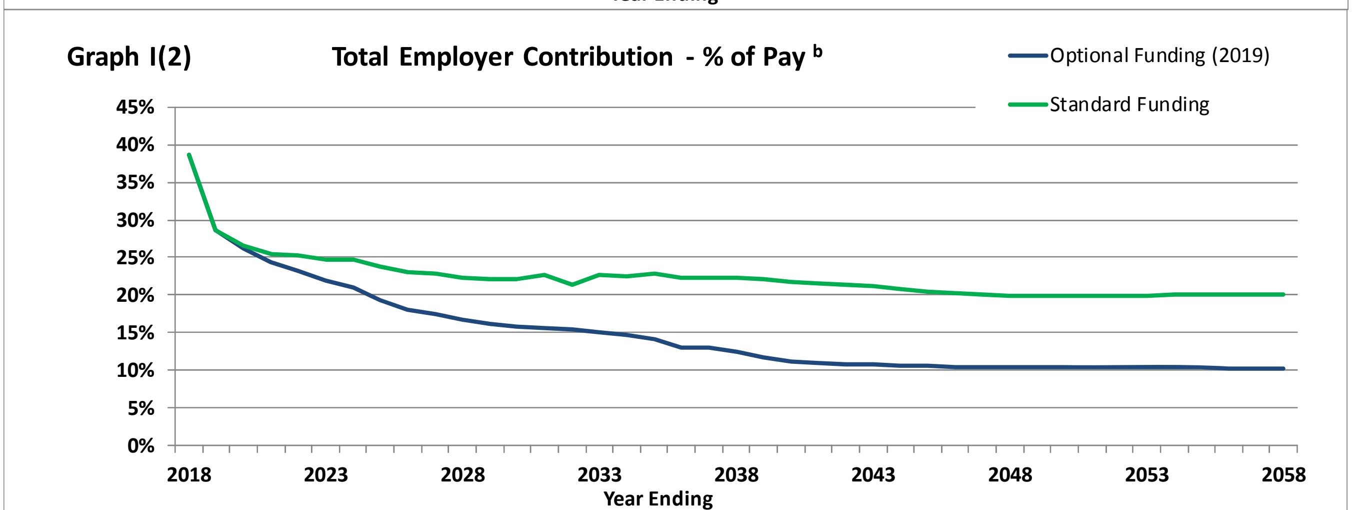
If the Optional funding policy is selected in fiscal year 2019, employer contributions to both the local plan and the statewide plan are projected to decrease from $276,834 in fiscal year 2020 to $253,864 in fiscal year 2030. After 2030, when the plan is projected to be fully funded, employer contributions are equal to net employer normal costs, for the closed local plan, plus 10.5% of pay for members covered under the statewide plan.

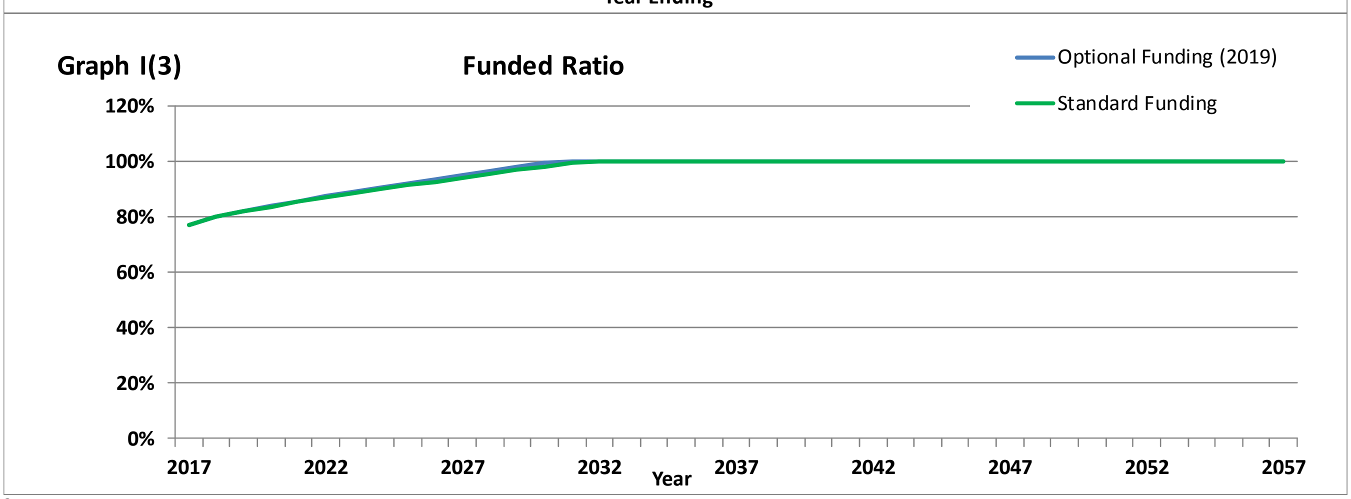
Both the Optional and Standard funding policies are consistent with actuarial standards of practice and produce a stable contribution pattern and reasonable growth in the funded ratio.

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.

Actual 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	$6,594,688	$6,674,873
2. Actuarial Accrued Liability	$9,450,274	$9,922,726
3. Unfunded Actuarial Accrued Liability (2 - 1)	$2,855,586	$3,247,853
4. Funded Ratio (1/2)	70%	67%
5. Expected Payroll	$868,395	$997,461
6. UAAL as Percentage of Covered Payroll (3/5)	329%	326%
Schedule of Employer Contributions [c]	**FYE 2017**	**FYE 2018**
1. Actuarially Determined Contribution		
(a) Employer Normal Cost	$210,586	$234,140
(b) Amortization of Unfunded Actuarial Accrued Liability	$283,286	$334,711
(c) Actuarially Determined Contribution (ADC) (a + b)	$493,872	$568,851
2. Employer Contribution	$367,598	$381,363 [b]
3. Premium Tax Allocation	$176,783	$187,488
4. Percentage of ADC Contributed [(2 + 3)/1(c)]	110%	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	$6,594,688	$6,674,873
Adjustment to Market Value of Assets at Beginning of Year	$13,336	$0
Market Value of Assets Beginning of Year	$6,608,024	$6,674,873
1. Revenue During Fiscal Year		
(a) Employee Contribution	$80,580	$78,288
(b) Governmental Contribution		
(i) From Local Government	$179,764	$367,598
(ii) From State Government	$155,732	$176,783
(iii) Reallocation from State Government	$0	$0
(iv) Total	$335,496	$544,381
(c) Earnings on Investments		
(i) Net Appreciation/(Depreciation)	$0	$0
(ii) Bond Interest	$226,150	$185,822
(iii) Dividends	$0	$0
(iv) Net Realized Gain (Loss) on Sale/Exchange	($169,007)	$563,964
(v) Other	$0	$0
(vi) Less Investment Expense	$0	$0
(vii) Total	$57,143	$749,786
(d) Other Revenue	$0	$0
(e) Net Receivable Investment Income	$10,033	$9,784
(f) Receivable Contribution [a]		
(i) From Employee Contributions	$3,079	$3,101
(ii) From Local Government	$0	$0
(iii) From State Government	$0	$0
(iv) Total	$3,079	$3,101
(g) Total Revenue (sum of (a) through (f))	$486,331	$1,385,340
2. Expenditures During Fiscal Year		
(a) Benefits Paid	$383,756	$396,256
(b) Withdrawals	$0	$21,824
(c) Administrative Expenses	$35,726	$38,257
(d) Payable Benefits and Withdrawals	$0	$0
(e) Payable Administrative Expenses	$0	$0
(f) Total Expenditures (sum of (a) through (e))	$419,482	$456,337
B. Market Value of Assets End of Year [A + 1(g) - 2(f)]	$6,674,873	$7,603,876
C. Approximate Return on Assets	0.48%	10.69%

[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	$125,529	2%	$114,597	2%
2. Government Securities				
(a) US Treasury Bills, Notes and Bonds	$554,477		$447,395	
(b) US State and Local Governmental Debt Securities	$0		$257,495	
(c) Foreign Governmental Debt Securities	$0		$0	
(d) Other	$0		$0	
(e) Total Government Securities (sum of (a) through (d))	$554,477	8%	$704,890	9%
3. Corporate Fixed Income				
(a) US Bonds	$471,104		$414,507	
(b) US Mortgage or other Asset Backed Securities	$503,490		$503,947	
(c) US Mutual Fund Shares (Bonds)	$1,018,839		$1,301,729	
(d) US Exchange Traded Funds (Bonds)	$156,041		$0	
(e) International Bonds	$0		$0	
(f) International Mutual Fund Shares (Bonds)	$0		$0	
(g) International Exchange Traded Funds (Bonds)	$0		$0	
(h) Total Corporate Fixed Income (sum of (a) through (g))	$2,149,474	32%	$2,220,183	29%
4. Corporate Equity				
(a) US Equity	$820,367		$915,385	
(b) US Mutual Fund Shares (Equity)	$2,989,037		$3,635,936	
(c) US Exchange Traded Funds (Equity)	$0		$0	
(d) International Equity	$22,877		$0	
(e) International Mutual Fund Shares (Equity)	$0		$0	
(f) International Exchange Traded Funds (Equity)	$0		$0	
(g) Total Corporate Equity (sum of (a) through (f))	$3,832,281	58%	$4,551,321	60%
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	$3,079		$3,101	
(b) From Local Government	$0		$0	
(c) From State Government	$0		$0	
(d) Total Receivable Contributions (sum of (a) through (c))	$3,079	0%	$3,101	0%
8. Accruals				
(a) Receivable (other than State and Local Contributions)	$10,033		$9,784	
(b) Less Payable	$0		$0	
(c) Total	$10,033	0%	$9,784	0%
Market Value of Assets End of Year [sum of (1) through (8)]	**$6,674,873**		**$7,603,876**	

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:	**20**	**7**	**4**	**0**	**2**	**33**
New Actives:	2					**2**
Returned to Actives Status:						**0**
Data Corrections/Other Changes:						**0**
Vested Terminations:						**0**
Non-Vested Terminations:	(1)					**(1)**
Disabled:						**0**
Retirements:	(1)	1				**0**
Deaths with Beneficiary:						**0**
Deaths w/o Beneficiary:		(1)				**(1)**
Expired Annuity or Stop Payment:						**0**
Net Changes:	0	0	0	0	0	**0**
Total Participants June 30, 2017:	**20**	**7**	**4**	**0**	**2**	**33**

Actuarial Valuation Data as of July 1, 2017
Schedule G: Distribution of Active Employees by Age and Length of Service

Attained Age	Less than 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 35	Totals	Valuation Payroll[a]
	Years of Service to Valuation Date										
Under 20											$ 0
20-24	1									**1**	**$ 46,884**
25-29		3	1							**4**	**$ 193,555**
30-34		1	1	1						**3**	**$ 136,479**
35-39	1			1						**2**	**$ 87,267**
40-44		1		1	3	1				**6**	**$ 305,202**
45-49					2	2				**4**	**$ 219,374**
50-54											**$ 0**
55-59											**$ 0**
60-64											**$ 0**
65-69											**$ 0**
Over 70											**$ 0**
Totals	**2**	**5**	**2**	**3**	**5**	**3**	**0**	**0**	**0**	**20**	**$ 988,761**

Averages

Age:	38.2	years
Service:	10.8	years
Annual Pay:	$49,438	[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	20	20
Total Annual Pay	$1,002,271	$988,761
Average Age	38.3	38.2
Average Service	12.4	10.8

Inactive Participants	July 1, 2016		July 1, 2017[a]	
Type	No.	Annual Benefit	No.	Annual Benefit
Retirees	7	$232,092	7	$261,730
Survivors	2	$40,723	2	$41,718
Disabled Members	4	$97,524	4	$98,555
Deferred Vested Members	0	$0	0	$0

[a]*Data provided includes 3 non-vested members with accumulated contributions balances of $40,038.*

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	$7,603,876
Liabilities using a 6.00% discount rate	$10,560,744
Funded Ratio	72%
Expected Benefit Payments	$461,349
Liquidity Ratio	16.48
Equity Exposure	60%
Projected Funded Ratio after 15 years	100%

Discount Rate	6.50%

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 1716.95 eligible active members and 2165.24 eligible retired members. The City of Vienna Policemen's Pension and Relief Fund reported 20 eligible active members and 13 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 $183,564 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.

General Inflation	2.75%
Expected Salary Increase	General Inflation: 2.75% *plus* Wage Inflation Increment: 1.00% *plus*
Service-based Increase:	Years of Service / Increase 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)

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

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	The sponsor did not appear to provide separate investment and administrative expenses. Plan year 2018 administrative expenses assumed to be equal to 15% of all reported 2017 expenses. 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 not 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	20	13	$997,461	$6,674,873	$418,080	$38,257	$367,598	$81,389	$176,783	$759,570	$7,603,876	$9,858,499	$2,254,623	77%
2018	19	14	987,450	7,603,876	461,349	5,739	381,363	78,266	187,488	500,011	8,283,916	10,341,543	2,057,627	80%
2019	17	14	977,486	8,283,916	445,463	5,779	293,578	77,709	183,564	541,769	8,929,294	10,867,652	1,938,358	82%
2020	16	15	958,547	8,929,294	473,604	5,829	271,957	76,493	191,802	582,350	9,572,463	11,391,924	1,819,461	84%
2021	15	15	947,037	9,572,463	498,077	5,889	259,058	75,805	197,618	623,122	10,224,100	11,920,161	1,696,061	86%
2022	14	16	936,201	10,224,100	522,626	5,954	249,224	75,186	202,560	664,515	10,887,005	12,453,436	1,566,431	87%
2023	13	17	910,709	10,887,005	562,058	6,031	239,466	73,580	208,589	706,169	11,546,720	12,973,138	1,426,418	89%
2024	12	18	863,820	11,546,720	616,712	6,113	226,601	70,520	215,063	746,998	12,183,078	13,455,727	1,272,649	91%
2025	11	19	812,888	12,183,078	670,255	6,201	206,898	67,211	222,987	786,162	12,789,881	13,898,045	1,108,164	92%
2026	10	19	782,928	12,789,881	706,619	6,297	190,331	65,394	230,116	824,078	13,386,885	14,321,331	934,446	93%
2027	9	20	753,069	13,386,885	746,153	6,397	182,313	63,607	236,833	861,517	13,978,605	14,721,555	742,950	95%
2028	8	20	727,407	13,978,605	783,050	6,498	174,711	62,139	244,497	898,750	14,569,155	15,101,469	532,314	96%
2029	8	20	719,635	14,569,155	804,362	6,598	168,323	61,961	251,252	936,457	15,176,188	15,481,609	305,421	98%
2030	7	20	720,421	15,176,188	822,459	6,706	166,184	62,421	257,650	975,483	15,808,762	15,868,089	59,327	100%
2031	7	20	727,653	15,808,762	835,267	6,815	166,115	63,349	62,696	1,009,978	16,268,819	16,268,819	0	100%
2032	7	20	724,560	16,268,819	859,119	6,927	167,148	63,566	0	1,037,150	16,670,637	16,670,637	0	100%
2033	6	21	702,082	16,670,637	898,552	7,040	162,788	62,437	0	1,061,828	17,052,098	17,052,098	0	100%
2034	6	21	685,397	17,052,098	929,240	7,154	159,696	61,733	0	1,085,516	17,422,649	17,422,649	0	100%
2035	4	22	629,921	17,422,649	978,825	7,272	145,020	57,318	0	1,107,401	17,746,291	17,746,291	0	100%
2036	4	22	562,094	17,746,291	1,034,158	7,398	127,352	51,704	0	1,125,919	18,009,710	18,009,710	0	100%
2037	3	22	523,817	18,009,710	1,068,193	7,528	118,111	48,545	0	1,141,552	18,242,197	18,242,197	0	100%
2038	3	23	449,572	18,242,197	1,129,810	7,661	101,376	41,842	0	1,153,938	18,401,882	18,401,882	0	100%
2039	2	23	345,081	18,401,882	1,210,554	7,794	78,094	32,165	0	1,160,677	18,454,470	18,454,470	0	100%

Actuarial Projections – Optional Funding in 2019
Table A-2

Valuation Plan Year End 30-Jun [a]	Closed Group Payroll	New Entrant Payroll	Total Payroll	Employee Contributions	Employer Contributions: Gross Normal Cost	Employer Contributions: Net Employer Normal Cost	Employer Contributions: Amortization of UAAL	Employer Contributions: Premium Tax Allocation Contributions	Employer Contributions: Net Employer Amortization	Employer Contributions: Expenses	Employer Contributions: Optional Employer Contribution	Statewide Employer Contribution
2018	$987,450	$0	$987,450	$78,266	$307,293	$229,027	$242,376	$183,564	$58,812	$5,739	$293,578	$0
2019	977,486	46,446	1,023,932	77,709	303,839	226,130	231,850	191,802	40,048	5,779	271,957	4,877
2020	958,547	101,883	1,060,430	76,493	297,123	220,630	230,217	197,618	32,599	5,829	259,058	10,698
2021	947,037	164,092	1,111,129	75,805	292,404	216,599	229,296	202,560	26,736	5,889	249,224	17,230
2022	936,201	215,411	1,151,612	75,186	288,670	213,484	228,617	208,589	20,028	5,954	239,466	22,618
2023	910,709	280,432	1,191,141	73,580	281,171	207,591	228,043	215,063	12,980	6,031	226,601	29,445
2024	863,820	351,116	1,214,937	70,520	267,284	196,764	227,009	222,987	4,022	6,113	206,898	36,867
2025	812,888	443,340	1,256,229	67,211	251,341	184,130	224,851	230,116	0	6,201	190,331	46,551
2026	782,928	525,793	1,308,721	65,394	241,410	176,016	221,816	236,833	0	6,297	182,313	55,208
2027	753,069	600,949	1,354,018	63,607	231,921	168,314	217,890	244,497	0	6,397	174,711	63,100
2028	727,407	688,526	1,415,933	62,139	223,964	161,825	210,147	251,252	0	6,498	168,323	72,295
2029	719,635	764,183	1,483,818	61,961	221,547	159,586	194,759	257,650	0	6,598	166,184	80,239
2030	720,421	835,709	1,556,130	62,421	221,830	159,409	162,556	62,696	0	6,706	166,115	87,749
2031	727,653	906,496	1,634,149	63,349	224,124	160,775	61,225	0	0	6,815	167,148	95,182
2032	724,560	976,423	1,700,982	63,566	223,788	160,222	0	0	0	6,927	162,788	102,524 [b]
2033	702,082	1,066,115	1,768,197	62,437	218,207	155,770	0	0	0	7,040	159,696	111,942 [b]
2034	685,397	1,165,813	1,851,210	61,733	214,261	152,528	0	0	0	7,154	145,020	122,410 [b]
2035	629,921	1,256,926	1,886,847	57,318	195,051	137,733	0	0	0	7,272	127,352	131,977 [b]
2036	562,094	1,417,477	1,979,570	51,704	171,659	119,955	0	0	0	7,398	118,111	148,835 [b]
2037	523,817	1,532,501	2,056,317	48,545	159,149	110,604	0	0	0	7,528	101,376	160,913 [b]
2038	449,572	1,656,156	2,105,728	41,842	135,548	93,706	0	0	0	7,661	78,094	173,896 [b]
2039	345,081	1,806,693	2,151,775	32,165	102,476	70,311	0	0	0	7,794	58,024	189,703 [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.*