

City Of Morgantown,
West Virginia
Firemen's Pension and
Relief Fund

**Actuarial Valuation Report
for the Year Beginning July 1, 2017**



August 29, 2018

Mr. James M. Goff
Finance Director
389 Spruce Street
Morgantown, WV 26505

Captain Gary W. Freshour
Pension Board Secretary
City of Morgantown Firemen's Pension and Relief Fund

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

Dear Mr. Goff and Captain Freshour:

Upon the request of the Municipal Pensions Oversight Board, we have performed an actuarial valuation as of July 1, 2017, for the City of Morgantown, West Virginia Firemen'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 Alternative funding policy as defined in West Virginia Code §8-22-20(c)(1)
- 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 also provides illustrative projections under two other funding policies available to the sponsor – the Optional funding policy as defined in West Virginia Code §8-22-20(e), and the Conservation funding policy as defined in West Virginia Code §8-22-20(f).

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 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 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 ended 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 4.50%. 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.



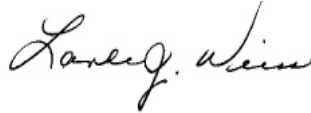
The signing actuaries are independent of the plan sponsor.

Alex Rivera and Lance J. 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
Senior Consultant



Lance J. Weiss, EA, MAAA, FCA
Senior Consultant

Contents

Section	Pages	Items
		Transmittal Letter
I		Actuarial Valuation Results as of July 1, 2017
	1-7	Executive Summary of Valuation Results as of July 1, 2017
	8	Schedule A: Summary of Key Valuation Results
	9	Schedule B: (Gain)/Loss Analysis
	10	Graphs 1A and 1B: Solvency Projections
II		Actuarial Projections – Alternative Funding Policy
	1	Alternative Funding Policy Projections – Closed Group Basis
	2-5	Alternative Funding Policy Projections – Open Group Basis
III	1-5	Funding Policy Choices
		Optional Funding Policy Projections
		Conservation Funding Policy Projections
IV		Actuarially Determined Contribution for GASB 67/68 Reporting
	1	Schedule C: Funding Progress and Employer Contributions
V		Actuarial Valuation Data as of July 1, 2017
	1	Schedule D: Reconciliation of Assets
	2	Schedule E: Assets Held by Category
	3	Schedule F: Summary of Participant Activity
	4	Schedule G: Distribution of Actives
	5	Schedule H: Participants Summary
VI	1-5	Actuarial Assumptions and Methods
VII	1-2	Summary of Principal Plan Provisions
VIII		Appendix – Projection Data
	1-2	Optional Funding – 2019
	3-4	Conservation Funding – 2019
	5-6	Optional Funding – N/A
	7-8	Conservation Funding – 2036

SECTION I

ACTUARIAL VALUATION RESULTS AS OF JULY 1, 2017

Executive Summary

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

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
- 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 Alternative funding policy as defined in West Virginia Code §8-22-20 (c)(1).

The key features of the Alternative funding policy, effective as of June 30, 1991, are summarized below:

- The sponsor's initial Alternative contribution effective for plan year 1991 is the greater of 107% of the amount contributed for the plan year ended June 30, 1990, or the highest five-year average of contributions made since 1984.
- Sponsor contributions made in subsequent years cannot be less than 107% of the contribution made in the prior fiscal year.
- The actuary must certify in writing that the Fund is projected to be solvent under the Alternative funding policy for the next consecutive 15-year period. A plan is deemed to be solvent if projected assets are greater than zero over the 15-year projection period.
- Beginning September 1, 2003, any municipality which elected the Alternative funding policy has the option of reverting to the Standard funding policy if the plan's funded ratio is greater than 80%. In this case, the Standard minimum contribution equals the normal cost plus the amortization of the unfunded liability over a period of not more than 40 years commencing from July 1, 1991, less the allocable portion of the state premium tax fund for municipal pension and relief funds.
- Plan members hired before January 1, 2010, contribute 7.0% of pay; however, if elected by the Board of Trustees of the Plan, member contributions may be increased up to 9.5% of pay. Employees hired on or after January 1, 2010, contribute 9.5% of pay.
- The Plan also receives premium tax allocation assigned to the Fund for the plan year.

This report also provides illustrative projections under two other funding policies available to the sponsor – the Optional funding policy as defined in West Virginia Code §8-22-20(e), and the Conservation funding policy as defined in West Virginia Code §8-22-20(f).

Executive Summary (Continued)

The following table provides the Plan's funded status:

Funded Status as of:	July 1, 2017
Assets	\$12,233,107
Actuarial Accrued Liability	\$45,762,352
Unfunded Actuarial Accrued Liability	\$33,529,245
Funded Ratio	26.73%

The following table provides the employer contributions for the fiscal year ended June 30, 2018, under the Alternative funding policy:

Employer Contributions for FYE:	June 30, 2018
FYE 06/30/2017 Alternative Contribution	\$669,926
7% Increase in Alternative Contribution	\$46,895
FYE 06/30/2018 Alternative Contribution	\$716,821
Additional Contribution	\$0
Final FYE 06/30/2018 Alternative Contribution	\$716,821

The following table provides the estimated employer contributions for the fiscal year ending June 30, 2019, under the Alternative funding policy:

Estimated Employer Contributions for FYE:	June 30, 2019
FYE 06/30/2018 Alternative Contribution	\$716,821
7% Increase in Alternative Contribution	\$50,177
FYE 06/30/2019 Alternative Contribution	\$766,998
Additional Contribution to satisfy 15-year Solvency Test on an Open Group Basis (to receive 100% of the State Premium Tax Allocation)	\$0
Estimated Employer Contribution for FYE 06/30/2019 to receive 100% of the State Premium Tax Allocation	\$766,998
Additional Contribution to satisfy 15-year Solvency Test on a Closed Group Basis (to grant Supplemental Benefits; i.e. COLA increases)	\$0
Estimated Employer Contribution for FYE 06/30/2019 to receive 100% of the State Premium Tax Allocation and to grant Supplemental Benefits; i.e. COLA increases	\$766,998

Executive Summary (Continued)

A sponsor using the Alternative funding policy must satisfy the solvency test, as referenced in West Virginia Code section §8-22-20 (c)(1) in order to receive 100% of the State premium tax allocation, or grant Supplemental Benefits to plan members. We understand that the minimum requirement to satisfy the statutory solvency test includes a demonstration that the assets are projected to be greater than zero over a 15-year period. The statutes also require that an actuary perform the projection and certify the solvency test. However, the statutes provide little guidance on the parameters used to perform the solvency projections.

Under the current minimum statutory requirements, a sponsor of a poorly funded plan could provide Supplement Benefits to members, effectively deplete assets over a 15-year period, and have no available assets reserved to pay the benefits of current or future retirees after the 15-year period. For this reason, we recommend performing projections that include a margin for conservatism and satisfy the minimum statutory requirement for solvency. For this purpose we recommend performing projections that assume contributions for members hired after the actuarial valuation date will not be used to finance the unfunded liabilities of current members as of the actuarial valuation date. That is, assets and liabilities associated with new plan members are excluded from the solvency projections used to certify the solvency test for purposes of providing Supplemental Benefits. In this report projections that exclude new members are called “Closed Group Projections.”

The statutes also require that the Plan satisfy the solvency test in order to receive the State premium tax allocation. For this purpose we recommend using less conservatism in the projections in order to ensure that the Plan receives the greatest allowable State premium tax allocation. A projection that includes assets and liabilities for members hired after the actuarial valuation would be less conservative. In this report projections that include new members are called “Open Group Projections.”

The sponsor is projected to satisfy the 15-year solvency test without making additional annual contributions in excess of the minimum alternative contribution. **However, given that the funded ratio as of June 30, 2017, is only 26.73%, and that the ratio of assets to expected benefits for the year is only 7.25, we strongly recommend that the sponsor make additional contributions in excess of the statutory minimum.**

Executive Summary (Continued)

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 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, including any additional amounts needed to satisfy the 15-year solvency test on an open group projection basis, 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.

Executive Summary (Continued)

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 31% (using a testing interest rate of 5.50% for all plans using the Alternative funding policy), ratio of assets to benefits of 7.25, equity allocation of 51%, and 15-year projected funded ratio of 31%, resulted in a discount rate assumption of 4.50%.
- The Fund experienced an approximate annualized return of 9.43% on the market value of assets during the plan year ended June 30, 2017, which compares to the expected annualized return of 4.50%. The difference in actual versus expected return produced an asset (gain)/loss of (\$550,492).
- 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 ended June 30, 2017, the fund experienced a net liability (gain)/loss of (\$197,278) due to these events.

Alternative Funding

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

Based on the open group projections shown in Table 2, page II-2 and assuming that the sponsor makes the statutory required contributions, if all actuarial assumptions are realized in the future, including an investment return of 4.50%:

- The funded ratio is projected to decrease from 27% at June 30, 2017, to 23% at June 30, 2026, remain at 23% for 10 years, and then increase slowly to 68% at June 30, 2057.
- Employer contributions are expected to increase from \$716,821 (or 26% of pay) for the fiscal year end June 30, 2018, to 10,031,773 (or 92% of pay) for fiscal year end June 30, 2057.

Please note that a funded ratio of only 27% at June 30, 2017, with slow growth in the projected funded ratio, means that the plan is severely underfunded.

Executive Summary (Continued)

The Alternative funding policy is not consistent with generally accepted actuarial principles because it does not recognize emerging gains or losses.

A funding policy consistent with generally accepted actuarial principles is typically based on the sponsor contributing the normal cost net of employee contributions plus an amortization of the unfunded actuarial accrued liability. The annual amortization amount is generally 6% to 7% of the unfunded actuarial accrued liability. Under state statute, the annual premium tax allocation can only be used to finance the amortization of the unfunded actuarial accrued liability. For fiscal year end 2019, the Alternative funding policy contribution of \$766,998 is sufficient to finance only 62% of the net employer normal cost of \$1,237,160. The state premium tax allocation of \$548,107 is sufficient to finance only 1.6% of the unfunded actuarial accrued liability of \$33,529,245.

This actuarial valuation assumes that the City will be able to make future contributions on a timely basis. The ability of the plan to become funded is heavily dependent on the City contributing the minimum employer contribution calculated under the Alternative funding policy for each and every future year. 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.

Please understand that minimum employer contribution calculated under the Alternative funding policy as defined in West Virginia Code 8-22-20 (c)(1) is just that – the minimum that needs to be contributed each and every year. Because this is an underfunded plan, we continue to recommend that the plan sponsor consider making additional contributions (in excess of the minimum requirement) to ensure that there are sufficient assets available in the fund in all years to pay the promised benefits.

If the minimum employer contributions (calculated under the Alternative funding policy) are not made or investment return is less than the assumption of 4.50%, the funded ratio will be lower and the cash flow strain could be higher. If another significant market downturn occurs while the plan's funded ratio is declining, the plan may need to liquidate assets in order to pay benefits which could have a further adverse effect on the funded status of the System.

Under the Alternative funding policy, City contributions increase by seven percent and do not change as a result of emerging actuarial experience. However, emerging experience gains and losses could impact the Plan's funded ratio as follows:

- If the actual return on assets is *less* than the assumed return of 4.50%, 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.

Executive Summary (Continued)

- 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	4.50%	4.50%
Cost-of-Living Adjustment	2.75%	2.75%
Wage Inflation	3.75%	3.75%
Expected Payroll	\$2,590,922	\$2,716,646
Average Pay	\$53,978	\$56,597
Expected Benefit Payments	\$1,603,661	\$1,686,323
1. Actuarial Accrued Liability	<u>No.</u>	<u>No.</u>
(a) Actives	48	48
(b) Retirees	36	38
(c) Survivors	18	16
(d) Disabled Members	2	2
(e) Deferred Vested Members	0	0
(f) Total	104	104
2. Present Value of Future Normal Costs	\$13,481,544	\$14,107,720
3. Present Value of Benefits (1(f) + 2)	\$57,617,185	\$59,870,072
4. Market Value of Assets	\$11,138,652	\$12,233,107
5. Unfunded Actuarial Accrued Liability (1(f) - 4)	\$32,996,989	\$33,529,245
6. Funded Ratio (4 / 1(f))	25.24%	26.73%
7. Net Employer Normal Cost		
(a) Normal Cost	\$1,374,854	\$1,446,472
(b) Administrative Expenses	\$3,126	\$2,218
(c) Gross Normal Cost (a + b)	\$1,377,980	\$1,448,690
(d) Employee Contribution Rate ^a	7.69%	7.79%
(e) Expected Employee Contributions	\$199,176	\$211,530
(f) Net Employer Normal Cost (c - e)	\$1,178,804	\$1,237,160
(% of Compensation)	45.50%	45.54%
	FYE 2018	FYE 2019
8. Estimated Minimum Employer Contribution ^b		
(a) Prior Year Alternative Contribution	\$669,926	\$716,821
(b) Increase in Alternative Contribution	7.00%	7.00%
(c) Current Year Alternative Contribution	\$716,821	\$766,998
(d) Additional Contribution	\$0	\$0
(e) Alternative Contribution (c + d)	\$716,821	\$766,998

^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 Alternative funding policy and is assumed to be made in plan year ending June 30, 2019.

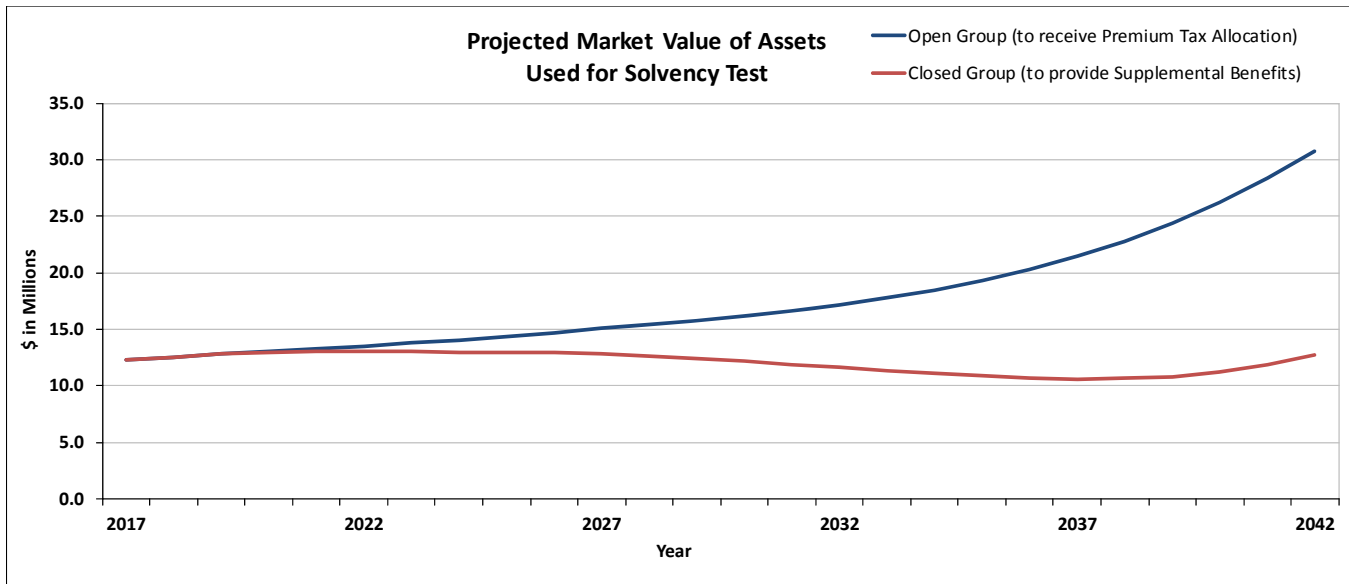
Schedule B: (Gain)/Loss Analysis

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

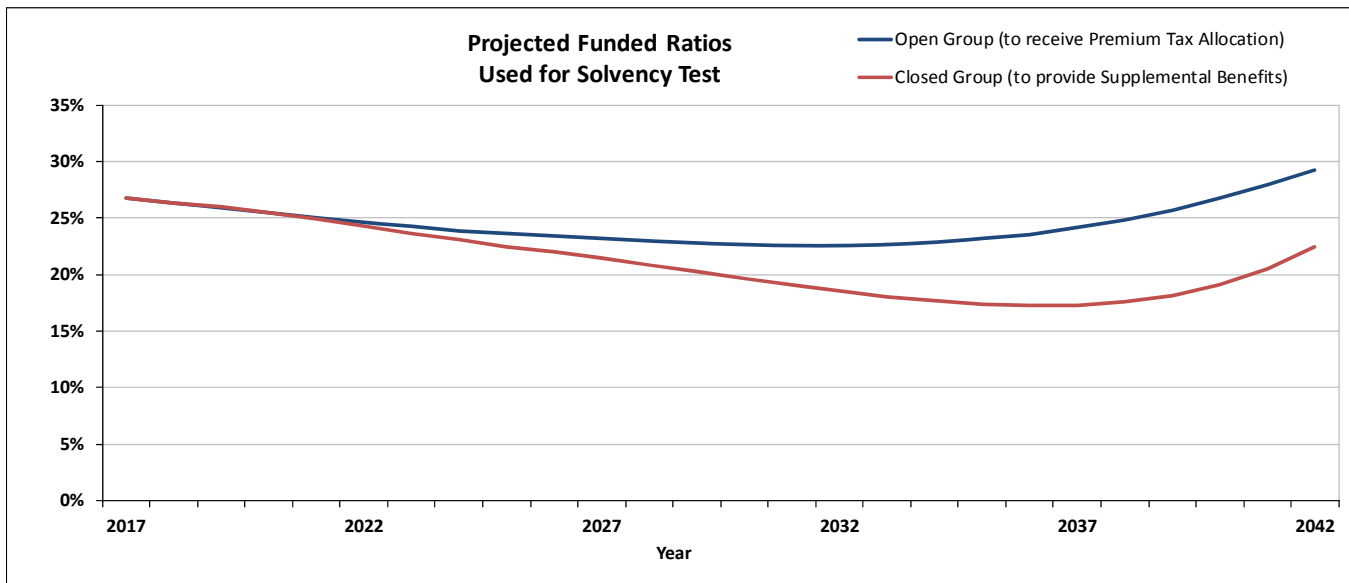
1.	(a) Actuarial Accrued Liability as of 7/1/2016	\$44,135,641
	(b) Normal Cost due 7/1/2016	\$1,374,854
	(c) Interest on (a) and (b) to 6/30/2017	\$2,017,038
	(d) Benefit Payments with interest to 6/30/2017	\$1,567,903
	(e) Effect of Assumption Changes	\$0
	(f) Expected Liability at 7/1/2017 [(a) + (b) + (c) - (d) + (e)]	\$45,959,630
	(g) Actual Liability at 7/1/2017	\$45,762,352
	(h) Liability (Gain)/Loss [(g) - (f)]	(\$197,278)
2.	(a) Market Value of Assets as of 7/1/2016	\$11,138,652
	(b) Interest on (a) to 6/30/2017	\$501,239
	(c) Contributions with interest to 6/30/2017	\$1,610,627
	(d) Benefit Payments with interest to 6/30/2017	\$1,567,903
	(e) Expected Assets at 6/30/2017 [(a) + (b) + (c) - (d)]	\$11,682,615
	(f) Actual Assets at 7/1/2017	\$12,233,107
	(g) Asset (Gain)/Loss [(e) - (f)]	(\$550,492)
3.	Total (Gain)/Loss [1(h) + 2(g)]	(\$747,770)

Graphs 1A and 1B: Solvency Projections

Graph 1A



Graph 1B



SECTION II

ACTUARIAL PROJECTIONS

ALTERNATIVE FUNDING POLICY

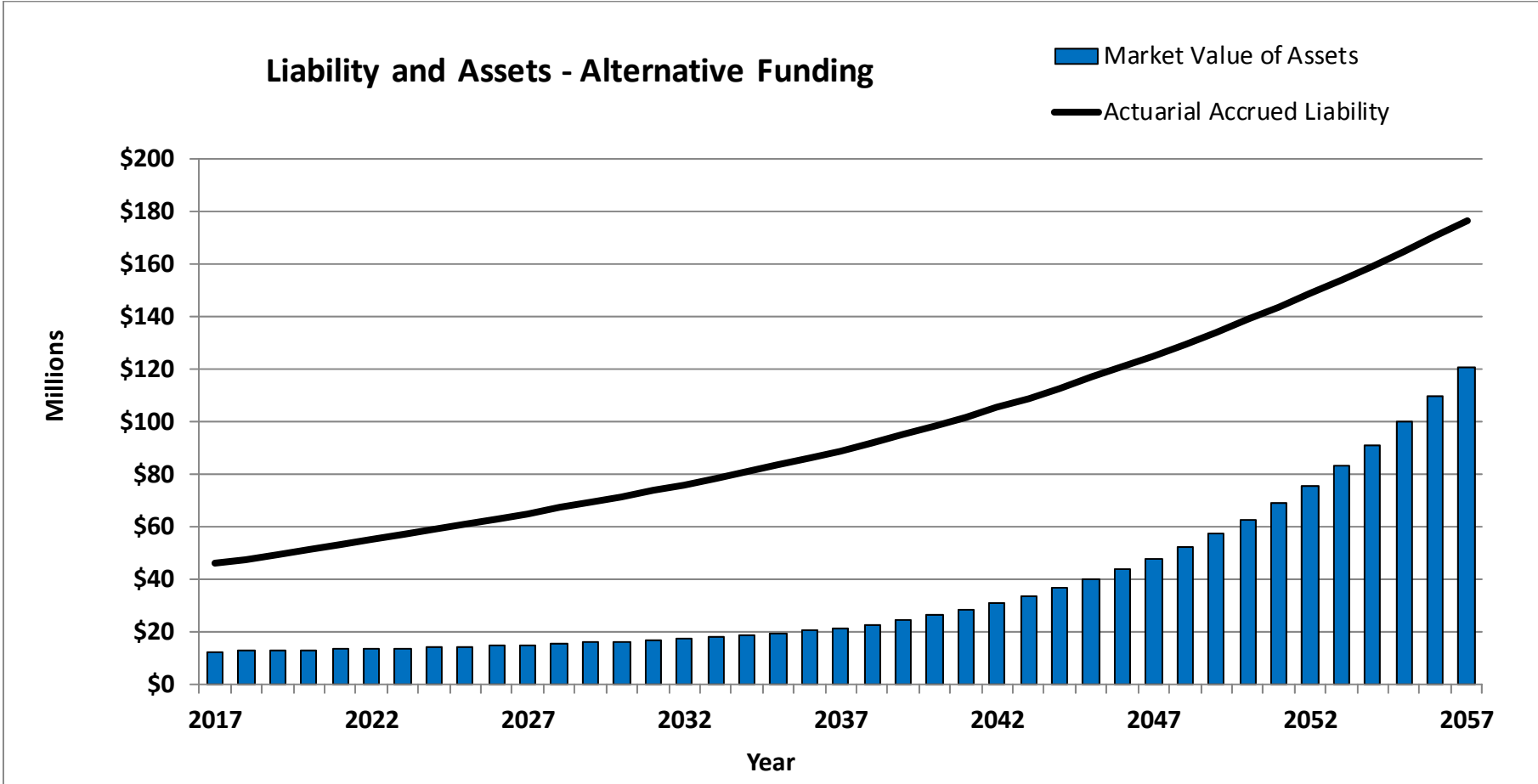
Alternative Funding on a Closed Group Basis, Table 1

Valuation Year End 30-Jun	Number		Total Payroll	Total Assets								Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
	Active	Status		Assets (boy)	Benefit Payments	Employer Contributions	Employee Contributions	Premium Tax Allocation Contributions	Investment Income	Assets (eoy)				
											Expenses			
2017	48	56	\$2,590,922	\$11,138,652	\$1,533,401	\$2,159	\$870,926	\$218,900	\$485,359	\$1,054,830	\$12,233,107	\$45,762,352	\$33,529,245	27%
2018	44	58	2,716,646	12,233,107	1,686,323	2,218	716,821	211,530	507,846	544,875	12,525,638	47,576,414	35,050,776	26%
2019	40	61	2,609,906	12,525,638	1,816,917	2,240	766,998	204,446	548,107	556,987	12,783,020	49,277,841	36,494,821	26%
2020	37	62	2,497,203	12,783,020	1,943,610	2,263	820,688	196,922	510,141	565,932	12,930,830	50,859,432	37,928,602	25%
2021	33	64	2,406,491	12,930,830	2,051,385	2,288	878,136	190,998	497,938	571,059	13,015,289	52,347,422	39,332,133	25%
2022	30	64	2,308,393	13,015,289	2,161,535	2,314	939,606	184,621	486,763	573,386	13,035,816	53,733,429	40,697,613	24%
2023	28	65	2,231,107	13,035,816	2,264,776	2,318	1,005,378	179,753	474,712	573,099	13,001,663	55,031,933	42,030,270	24%
2024	27	64	2,198,609	13,001,663	2,332,136	2,347	1,075,754	178,051	469,572	571,476	12,962,034	56,300,288	43,338,254	23%
2025	25	65	2,182,923	12,962,034	2,386,139	2,350	1,151,057	177,561	464,147	570,035	12,936,345	57,560,726	44,624,381	22%
2026	23	65	2,130,725	12,936,345	2,466,881	2,380	1,231,631	174,549	462,578	568,773	12,904,615	58,766,488	45,861,873	22%
2027	20	66	2,005,931	12,904,615	2,597,887	2,385	1,317,845	166,478	454,961	565,999	12,809,626	59,826,210	47,016,584	21%
2028	18	67	1,861,127	12,809,626	2,740,768	2,417	1,410,094	157,062	448,804	560,250	12,642,651	60,712,098	48,069,447	21%
2029	16	68	1,730,133	12,642,651	2,869,797	2,450	1,508,801	148,713	445,702	551,807	12,425,426	61,438,163	49,012,737	20%
2030	14	69	1,604,608	12,425,426	2,988,884	2,485	1,614,417	140,231	442,526	541,471	12,172,703	62,008,013	49,835,310	20%
2031	12	70	1,462,093	12,172,703	3,108,773	2,520	1,727,426	129,800	440,865	529,676	11,889,177	62,401,725	50,512,548	19%
2032	11	70	1,329,038	11,889,177	3,217,561	2,555	1,848,346	120,052	437,851	516,903	11,592,213	62,627,495	51,035,282	19%
2033	9	71	1,218,483	11,592,213	3,304,897	2,590	1,977,730	111,339	439,581	504,319	11,317,694	62,713,178	51,395,484	18%
2034	8	71	1,091,304	11,317,694	3,399,499	2,626	2,116,171	100,547	440,425	492,719	11,065,431	62,635,579	51,570,148	18%
2035	6	71	953,144	11,065,431	3,493,904	2,660	2,264,303	88,409	442,833	482,345	10,846,758	62,379,927	51,533,169	17%
2036	5	71	815,851	10,846,758	3,583,616	2,692	2,422,804	76,113	444,668	473,802	10,677,837	61,944,353	51,266,516	17%
2037	4	71	693,339	10,677,837	3,654,915	2,723	2,592,400	65,046	448,467	468,225	10,594,337	61,348,426	50,754,089	17%
2038	3	70	590,959	10,594,337	3,707,432	2,752	2,773,868	55,712	452,482	467,219	10,633,433	60,614,334	49,980,901	18%
2039	3	70	498,091	10,633,433	3,751,216	2,778	2,968,039	47,089	457,964	472,253	10,824,785	59,750,455	48,925,670	18%
2040	2	69	423,205	10,824,785	3,778,231	2,801	3,175,802	40,079	463,213	484,847	11,207,695	58,778,376	47,570,681	19%
2041	2	68	363,232	11,207,695	3,794,684	2,820	3,398,108	34,456	469,869	506,682	11,819,305	57,714,352	45,895,047	20%
2042	1	67	294,471	11,819,305	3,816,485	2,837	3,635,976	27,975	476,139	539,006	12,679,079	56,546,535	43,867,456	22%
2043	1	65	245,116	12,679,079	3,816,373	2,850	3,890,494	23,286	482,171	583,392	13,839,199	55,302,601	41,463,402	25%
2044	1	64	181,918	13,839,199	3,823,761	2,861	4,162,829	17,282	488,218	641,494	15,322,400	53,965,427	38,643,027	28%
2045	0	63	116,469	15,322,400	3,828,138	2,869	4,454,227	11,065	493,109	714,595	17,164,389	52,533,357	35,368,968	33%
2046	0	61	81,419	17,164,389	3,802,583	2,874	4,766,023	7,735	498,255	805,032	19,435,977	51,046,791	31,610,814	38%
2047	0	60	56,619	19,435,977	3,766,645	2,876	5,099,645	5,379	503,184	915,535	22,190,198	49,518,732	27,328,534	45%
2048	0	58	40,284	22,190,198	3,722,038	2,876	5,456,620	3,827	508,051	1,048,484	25,482,266	47,960,198	22,477,932	53%
2049	0	56	27,833	25,482,266	3,672,104	2,874	5,838,583	2,644	512,546	1,206,312	29,367,373	46,376,967	17,009,594	63%
2050	0	55	18,718	29,367,373	3,617,402	2,870	6,247,284	1,778	516,705	1,391,526	33,904,395	44,774,308	10,869,913	76%
2051	0	53	12,043	33,904,395	3,558,606	2,863	6,684,594	1,144	520,468	1,606,802	39,155,934	43,156,689	4,000,755	91%
2052	0	52	6,956	39,155,934	3,496,357	2,854	3,571,217	661	523,785	1,775,290	41,527,675	41,527,675	0	100%
2053	0	50	4,129	41,527,675	3,430,238	2,843	4,253	392	0	1,792,454	39,891,694	39,891,694	0	100%
2054	0	48	1,672	39,891,694	3,361,542	2,829	3,398	159	0	1,720,340	38,251,220	38,251,220	0	100%
2055	0	47	0	38,251,220	3,289,851	2,812	2,812	0	0	1,648,098	36,609,466	36,609,466	0	100%
2056	0	45	0	36,609,466	3,214,515	2,793	2,793	0	0	1,575,895	34,970,847	34,970,847	0	100%
2057	0	43	0	34,970,847	3,136,638	2,769	2,769	0	0	1,503,890	33,338,099	33,338,099	0	100%

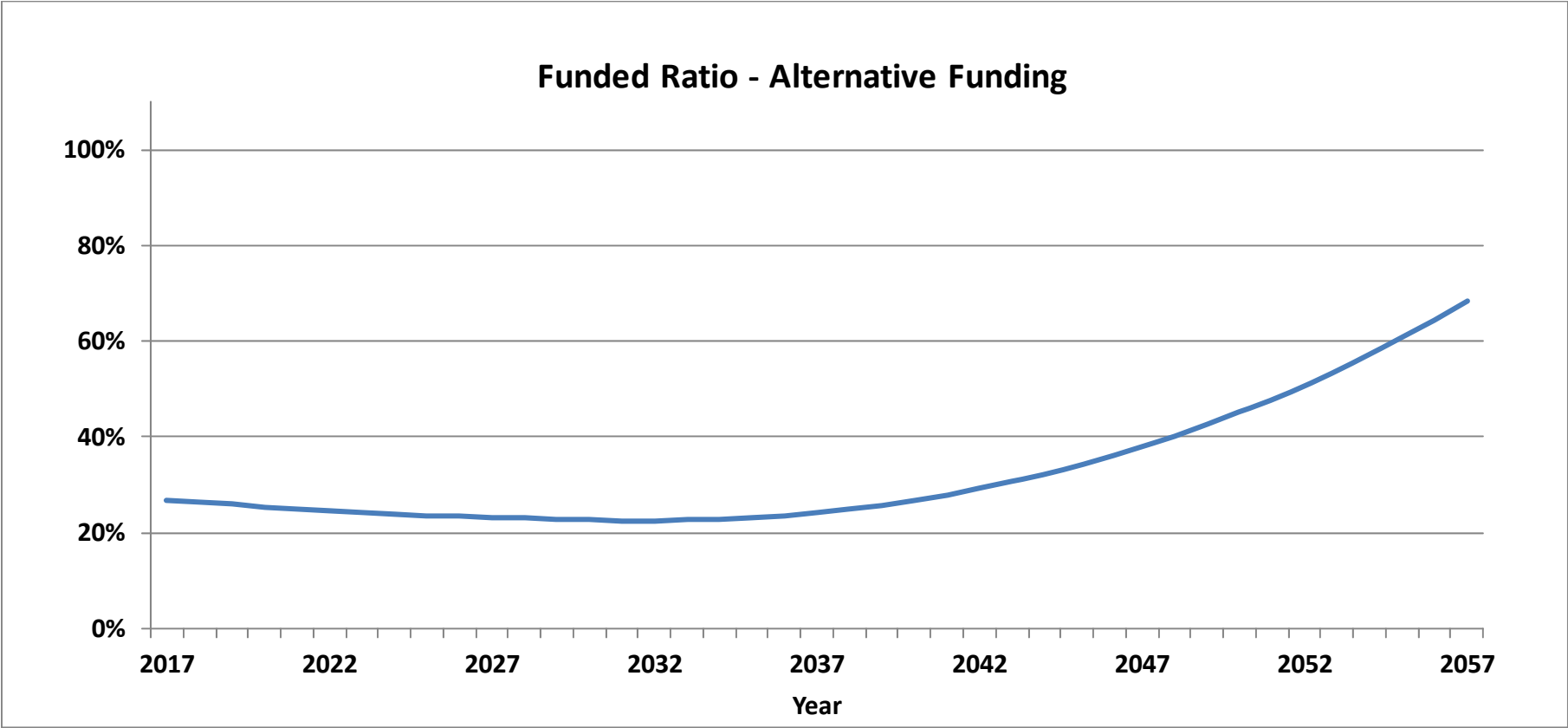
Alternative Funding on an Open Group Basis, Table 2

Valuation Plan Year End 30-Jun	Number		Total Assets										Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
	Active	Pay Status	Total Payroll	Assets		Benefit		Employer	Employee	Premium Tax	Investment	Assets			
				(boy)	Payments	Expenses	Contributions	Contributions	Allocation	Income	(eoy)				
2017	48	56	\$2,590,922	\$11,138,652	\$1,533,401	\$2,159	\$870,926	\$218,900	\$485,359	\$1,054,830	\$12,233,107	\$45,762,352	\$33,529,245	27%	
2018	48	58	2,716,646	12,233,107	1,686,323	2,218	716,821	211,530	507,846	544,875	12,525,638	47,604,287	35,078,649	26%	
2019	48	61	2,762,092	12,525,638	1,816,917	2,320	766,998	219,720	548,107	557,325	12,798,551	49,422,255	36,623,704	26%	
2020	48	62	2,855,248	12,798,551	1,944,132	2,444	820,688	232,242	576,327	568,873	13,050,105	51,227,890	38,177,785	25%	
2021	48	64	2,953,138	13,050,105	2,053,527	2,552	878,136	244,346	593,549	579,688	13,289,745	53,047,831	39,758,086	25%	
2022	48	65	3,051,888	13,289,745	2,166,255	2,663	939,606	256,903	611,055	589,997	13,518,389	54,880,979	41,362,590	25%	
2023	48	65	3,174,033	13,518,389	2,272,822	2,749	1,005,378	271,254	625,767	600,024	13,745,241	56,743,325	42,998,084	24%	
2024	48	65	3,319,389	13,745,241	2,344,152	2,844	1,075,754	286,641	642,182	610,916	14,013,738	58,686,709	44,672,971	24%	
2025	48	65	3,465,275	14,013,738	2,402,833	2,904	1,151,057	301,746	654,267	623,973	14,339,044	60,733,499	46,394,455	24%	
2026	48	65	3,581,543	14,339,044	2,488,817	2,993	1,231,631	315,138	670,014	639,137	14,703,154	62,851,916	48,148,762	23%	
2027	48	66	3,670,617	14,703,154	2,625,526	3,075	1,317,845	328,019	685,439	655,027	15,060,883	64,979,028	49,918,145	23%	
2028	48	68	3,785,010	15,060,883	2,774,757	3,202	1,410,094	343,941	707,203	670,692	15,414,854	67,107,297	51,692,443	23%	
2029	48	69	3,906,225	15,414,854	2,910,965	3,321	1,508,801	360,070	728,373	686,613	15,784,426	69,259,517	53,475,091	23%	
2030	48	70	4,052,536	15,784,426	3,038,054	3,447	1,614,417	378,085	750,282	703,652	16,189,361	71,452,388	55,263,027	23%	
2031	48	71	4,177,720	16,189,361	3,166,834	3,566	1,727,426	393,695	771,849	722,348	16,634,278	73,680,223	57,045,945	23%	
2032	48	71	4,353,834	16,634,278	3,285,527	3,702	1,848,346	414,202	796,036	743,410	17,147,043	75,966,753	58,819,710	23%	
2033	48	72	4,518,268	17,147,043	3,384,100	3,817	1,977,730	432,202	818,346	768,064	17,755,468	78,343,038	60,587,570	23%	
2034	48	72	4,694,194	17,755,468	3,491,128	3,941	2,116,171	451,103	842,173	797,091	18,466,937	80,805,453	62,338,516	23%	
2035	48	73	4,866,990	18,466,937	3,599,179	4,063	2,264,303	469,407	867,286	830,962	19,295,653	83,356,694	64,061,041	23%	
2036	48	73	5,067,167	19,295,653	3,703,930	4,191	2,422,804	490,230	893,529	870,495	20,264,590	86,013,297	65,748,707	24%	
2037	48	73	5,273,683	20,264,590	3,791,161	4,308	2,592,400	509,943	918,488	916,921	21,406,873	88,806,625	67,399,752	24%	
2038	48	73	5,501,623	21,406,873	3,861,145	4,427	2,773,868	529,636	944,873	971,827	22,761,505	91,764,556	69,003,051	25%	
2039	48	73	5,712,793	22,761,505	3,928,602	4,543	2,968,039	547,418	971,120	1,036,583	24,351,520	94,880,047	70,528,527	26%	
2040	48	73	5,951,772	24,351,520	3,999,529	4,673	3,175,802	568,275	999,925	1,112,281	26,203,600	98,160,181	71,956,581	27%	
2041	48	73	6,177,219	26,203,600	4,082,603	4,798	3,398,108	587,140	1,028,110	1,199,766	28,329,323	101,604,751	73,275,428	28%	
2042	48	73	6,402,336	28,329,323	4,191,645	4,936	3,635,976	605,998	1,058,671	1,299,388	30,732,774	105,189,159	74,456,385	29%	
2043	48	73	6,641,290	30,732,774	4,303,757	5,081	3,890,494	626,661	1,090,106	1,411,868	33,443,066	108,918,875	75,475,809	31%	
2044	48	73	6,854,898	33,443,066	4,450,842	5,227	4,162,829	645,397	1,122,246	1,537,747	36,455,216	112,763,128	76,307,912	32%	
2045	48	74	7,094,033	36,455,216	4,618,797	5,388	4,454,227	666,953	1,156,604	1,677,281	39,786,096	116,715,736	76,929,640	34%	
2046	48	74	7,346,378	39,786,096	4,776,702	5,545	4,766,023	689,502	1,190,539	1,831,849	43,481,762	120,805,158	77,323,396	36%	
2047	48	74	7,609,017	43,481,762	4,940,189	5,706	5,099,645	713,299	1,225,363	2,003,241	47,577,414	125,038,130	77,460,716	38%	
2048	48	74	7,883,188	47,577,414	5,109,621	5,872	5,456,620	738,562	1,261,342	2,193,077	52,111,522	129,421,062	77,309,540	40%	
2049	48	74	8,168,144	52,111,522	5,288,020	6,042	5,838,583	764,965	1,298,266	2,403,047	57,122,321	133,960,311	76,837,990	43%	
2050	48	75	8,465,136	57,122,321	5,472,775	6,217	6,247,284	792,240	1,336,394	2,634,968	62,654,214	138,662,163	76,007,949	45%	
2051	48	75	8,769,634	62,654,214	5,664,770	6,397	6,684,594	820,297	1,375,568	2,890,854	68,754,360	143,530,498	74,776,138	48%	
2052	48	75	9,087,276	68,754,360	5,865,513	6,584	7,152,516	850,087	1,416,264	3,172,870	75,474,001	148,567,682	73,093,681	51%	
2053	48	75	9,418,393	75,474,001	6,076,663	6,775	7,653,192	881,247	1,458,101	3,483,317	82,866,420	153,782,226	70,915,806	54%	
2054	48	75	9,762,393	82,866,420	6,295,377	6,970	8,188,915	913,721	1,501,058	3,824,704	90,992,471	159,181,948	68,189,477	57%	
2055	48	75	10,121,936	90,992,471	6,520,900	7,171	8,762,139	948,007	1,545,413	4,199,859	99,919,819	164,777,383	64,857,564	61%	
2056	48	75	10,500,023	99,919,819	6,751,451	7,375	9,375,489	984,417	1,590,965	4,611,928	109,723,792	170,582,606	60,858,814	64%	
2057	48	75	10,896,480	109,723,792	6,987,153	7,582	10,031,773	1,022,671	1,637,520	5,064,347	120,485,368	176,614,500	56,129,132	68%	

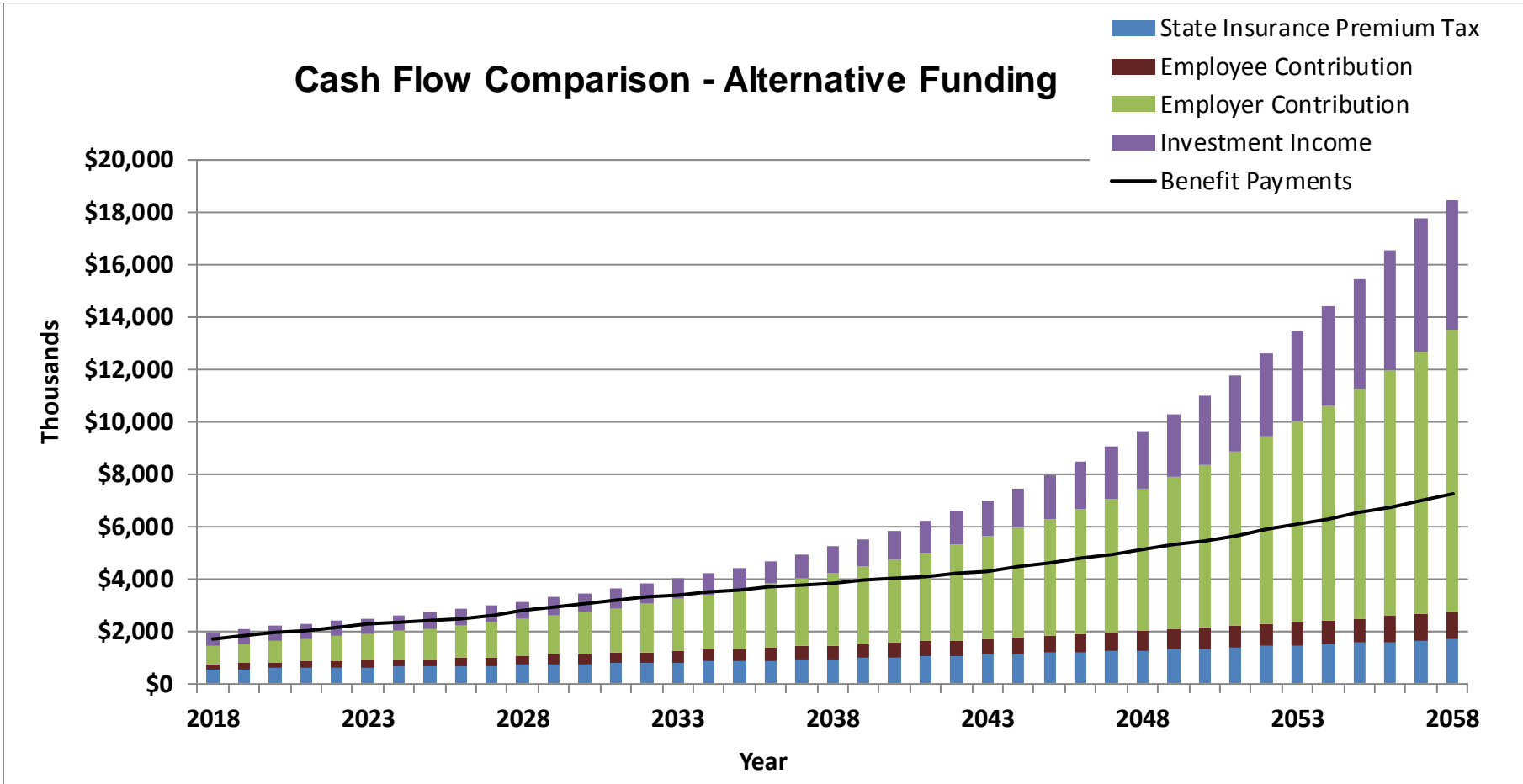
Open Group Actuarial Projections – Alternative Funding, Graph 2



Open Group Actuarial Projections – Alternative Funding, Graph 3



Open Group Actuarial Projections – Alternative Funding, Graph 4



SECTION III

FUNDING POLICY CHOICES

Actuarial Projections –Alternative/Optional/Conservation Funding

Funding Policy Choices

West Virginia Code §8-22-20 allows a municipality's governing body (City Council) the choice of changing from the Alternative funding policy to either the Optional funding policy or the Conservation 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. The Conservation funding policy is defined in West Virginia Code §8-22-20(f)(1), and is effective for plan years beginning after April 1, 2011.

If the City Council elects either the Optional funding policy or the Conservation 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 January 1, 2010, 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% 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.

If the City Council elects the Conservation funding policy, contributions to the closed local Plan are made to two asset accounts as follows:

- The first asset account (Benefit Payment Account) is used to finance benefits and expenses for the fiscal year on a pay-as-you-go basis. Sources to pay current year benefits and expenses include active member employee contributions of 5.5% (which is the current contribution rate of 7.0% of pay, less 1.5% which by law goes into the accumulation account), a portion of the premium tax allocation not assigned to the accumulation account as defined below, and employer contributions.
- The second account (Accumulation Account) cannot be used to pay benefits and expenses until assets exceed actuarial accrued liabilities. Contributions to the accumulation account include employee contributions of 1.5% of pay and a percentage of the premium tax allocation. The percentage of premium tax allocation is based on the amounts needed to produce 100% funding of liabilities in 35 years, from adoption, considering assets from both the benefit payment account and the accumulation account. This account also includes the Fund's assets prior to the adoption of Conservation funding policy.

Actuarial Projections –Alternative/Optional/Conservation Funding (Continued)

For purposes of evaluating the implication of selecting either the Optional funding policy or the Conservation funding policy, we have generated actuarial projections under the following two illustrative scenarios.

- Scenario I – The sponsor elects either the Optional funding policy or Conservation funding policy during fiscal year end June 30, 2019, and makes the newly elected contribution in fiscal year end June 30, 2019.
- Scenario II – The sponsor elects either the Optional funding policy or the Conservation funding policy at some future date when/if contributions are projected to be less than under the current Alternative funding policy.

It is important to note that the plan sponsor can make only one election to either the Optional funding policy or the Conservation 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.

Given that the funded ratio as of June 30, 2017 is only 27%, and that the ratio of assets to expected benefits for the year is only 7.25, we strongly recommend that the sponsor make additional contributions in excess of the statutory minimum under either the Alternative or Conservation funding policy.”

Scenario I – Sponsor Immediately Elects either the Optional or Conservation Funding Policy

The following table shows the employer contribution for the fiscal year end June 30, 2019, if the sponsor elects either the Optional or Conservation funding policy in fiscal year end June 30, 2019:

Total Employer Contributions for FYE June 30, 2019				
	Local Plan		Statewide Plan	
Funding Method	Amount	Percent of Pay	Amount	Percent of Pay
Alternative	\$766,998	27.8%	NA	NA
Optional	\$2,629,022	100.7%	\$15,980	10.5%
Conservation	\$1,105,753	42.4%	\$15,980	10.5%

Graphs I(1), I(2), and I(3) on the following pages show the projected contribution and funded ratio pattern of the three separate funding policies. If the sponsor continues to make contributions under the Alternative policy, employer contributions are projected to increase from \$716,821 in fiscal year end 2018 to \$10,031,773 in fiscal year end 2057. In fiscal year end 2057, the plan is projected to be 68% funded.

If the Optional funding policy is selected in fiscal year end 2019, employer contributions to the local plan for fiscal year end 2019 are projected to increase from \$766,998 to \$2,629,022. However, over the 40-year projection period, total employer contributions to both the local plan and the statewide plan are projected to decrease from \$2,645,002 in fiscal year end 2019 to \$1,499,963 in fiscal year end 2049, and the Plan is projected to be fully funded in 2050.

Actuarial Projections –Alternative/Optional/Conservation Funding (Continued)

If the Conservation funding policy is selected in fiscal year end 2019, employer contributions to the local plan for fiscal year end 2019 are projected to increase from \$766,998 to \$1,105,753. During the 35-year projection period, total employer contributions to both the local plan and the statewide plan are projected to increase from \$1,121,733 in fiscal year end 2019 to \$3,332,630 in fiscal year end 2047 and the Plan is projected to be fully funded in 2048.

The Optional funding policy is consistent with actuarial standards of practice and produces a relatively stable dollar contribution pattern and reasonable growth in the funded ratio.

The Conservation funding policy produces a less stable contribution pattern and slower growth in the funded ratio when compared to the Optional funding policy. The projections of employer contributions under the Conservation funding policy are dependent on the expected number of retirements, disabilities, and resulting benefit payments. Actual experience could produce a significantly higher number of retirements, disabilities, and benefit payments, which would increase the employer's required contribution under the Conservation funding policy. Unlike the Optional funding policy, the Conservation funding policy does not have a built-in feature to smooth out emerging gains and losses.

The Alternative funding policy produces a lower funded ratio when compared to either the Optional funding policy or the Conservation funding policy, and the 7% annual increases in employer contributions may eventually be cost prohibitive.

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

Scenario II – Sponsor Elects Optional or Conservation Policy if/when Contributions are Lower

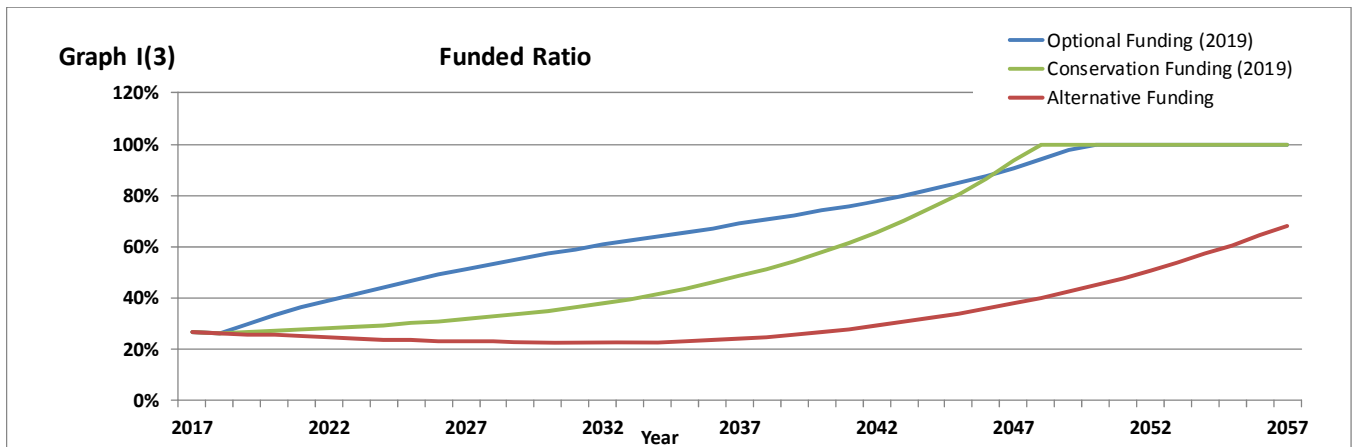
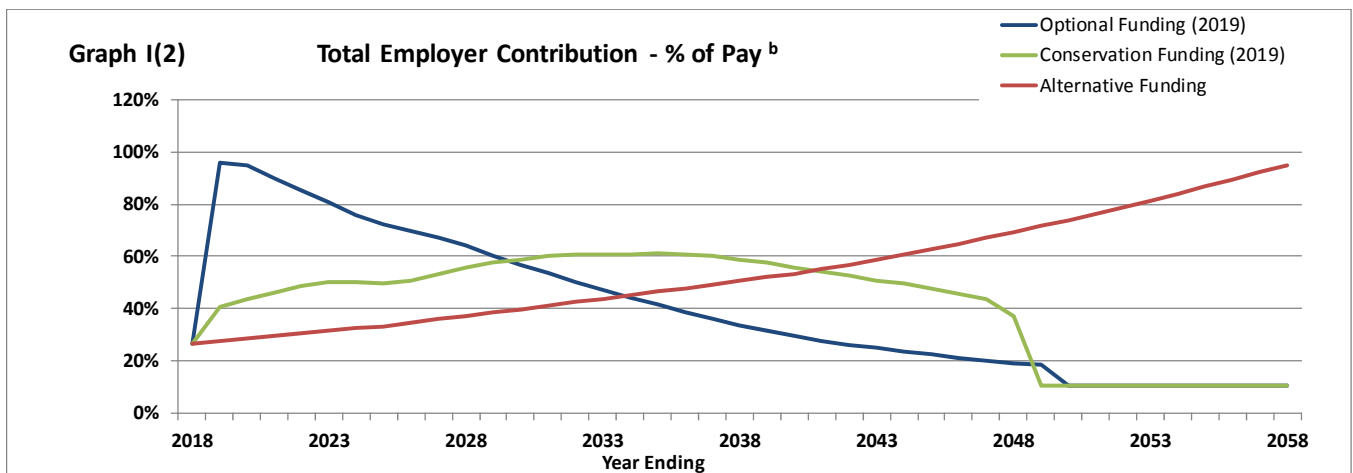
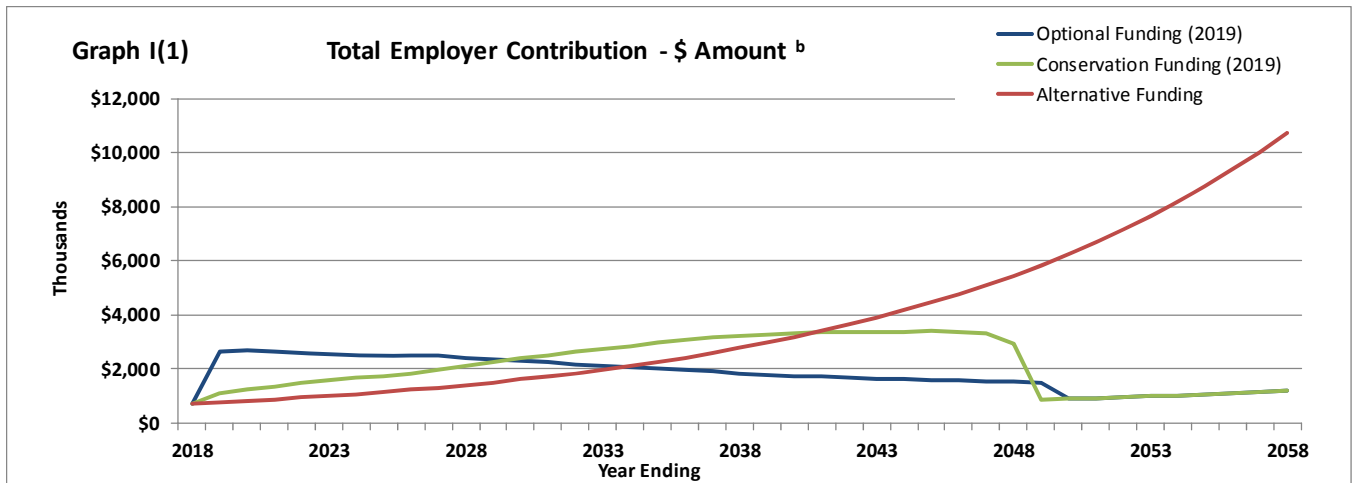
Under Scenario II, the plan sponsor is assumed to make contributions under the Alternative funding policy in future years, until the first year that either the Optional or Conservation policy produces a lower contribution. Under this assumption, the employer contributions under the Optional funding policy are not projected to be lower than contributions under the Alternative funding policy. In plan year end 2036, the employer contributions under the Conservation funding policy of \$2,420,818 are projected to be lower than contributions under the Alternative funding policy of \$2,422,804.

Graphs II(1), II(2), and III(3) show the projected contribution pattern and funded ratio. Based on these projections, the Conservation funding policy has lower projected employer contributions than the Alternative funding policy beginning in 2036. After 2036, the funded ratio under the Conservation funding policy increases at a lower rate than the Alternative funding policy. As stated above, however, the Conservation funding policy is dependent on expected benefits payments when considering the *expected number of retirement and disabilities*. The ultimate employer contributions depend on the *actual number of retirement and disabilities*, which could result in a more volatile contribution pattern when compared to the Optional funding policy.

The details of the Scenario II projections can be found in the Appendix.

Actuarial Projections –Alternative/Optional/Conservation Funding^a (Continued)

Scenario I

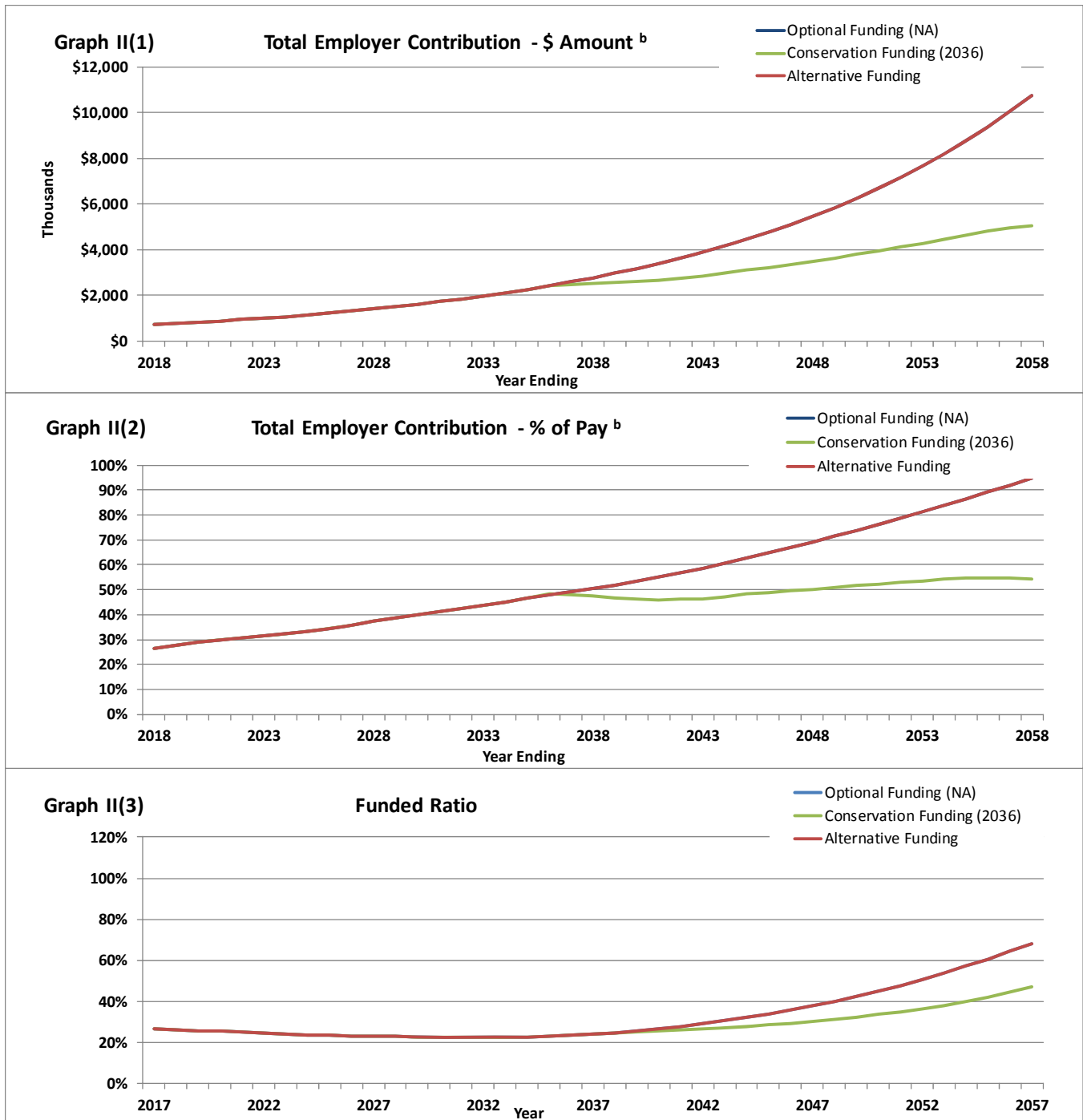


^a Assumes Sponsor elects either the Optional funding policy or Conservation funding policy in fiscal year end June 30, 2019, and makes the newly elected contribution in fiscal year end June 30, 2019.

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

Actuarial Projections –Alternative/Optional/Conservation Funding^a (Continued)

Scenario II



^a Assumes Sponsor elects either the Optional funding policy or Conservation funding policy in the first year that contributions are lower than under the Alternative funding policy.

^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, 2016	July 1, 2017
Valuation Interest Rate	4.50%	4.50%
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	24 Years, Level % of Pay	23 Years, Level % of Pay
Schedule of Funding Progress		
Actuarial Valuation Date	July 1, 2016	July 1, 2017
1. Market Value of Assets	\$11,138,652	\$12,233,107
2. Actuarial Accrued Liability	\$44,135,641	\$45,762,352
3. Unfunded Actuarial Accrued Liability (2 - 1)	\$32,996,989	\$33,529,245
4. Funded Ratio (1/2)	25%	27%
5. Expected Payroll	\$2,590,922	\$2,716,646
6. UAAL as Percentage of Covered Payroll (3/5)	1,274%	1,234%
Schedule of Employer Contributions ^c		
	FYE 2017	FYE 2018
1. Actuarially Determined Contribution		
(a) Employer Normal Cost	\$1,178,804	\$1,237,160
(b) Amortization of Unfunded Actuarial Accrued Liability	\$1,491,755	\$1,576,197
(c) Actuarially Determined Contribution (ADC) (a + b)	\$2,670,559	\$2,813,357
2. Employer Contribution ^b	\$870,926	\$716,821
3. Premium Tax Allocation	\$485,359	\$507,846
4. Percentage of ADC Contributed [(2 + 3)/1(c)]	51%	44%

^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.

^c The Alternative minimum contribution plus the premium tax allocation does not satisfy 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	\$11,510,264	\$11,138,652
Adjustment to Market Value of Assets at Beginning of Year	\$0	\$0
Market Value of Assets Beginning of Year	\$11,510,264	\$11,138,652
1. Revenue During Fiscal Year		
(a) Employee Contribution	\$202,830	\$218,900
(b) Governmental Contribution		
(i) From Local Government	\$728,343	\$870,926
(ii) From State Government	\$460,023	\$485,359
(iii) Reallocation from State Government	\$0	\$0
(iv) Total	\$1,188,366	\$1,356,285
(c) Earnings on Investments		
(i) Net Appreciation/(Depreciation)	(\$533,110)	\$840,973
(ii) Bond Interest	\$84,708	\$72,425
(iii) Dividends	\$167,744	\$137,944
(iv) Net Realized Gain (Loss) on Sale/Exchange	\$117,380	\$84,627
(v) Other	\$0	\$0
(vi) Less Investment Expense	(\$87,064)	(\$81,139)
(vii) Total	(\$250,342)	\$1,054,830
(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))	\$1,140,854	\$2,630,015
2. Expenditures During Fiscal Year		
(a) Benefits Paid	\$1,509,424	\$1,528,283
(b) Withdrawals	\$0	\$5,118
(c) Administrative Expenses	\$3,042	\$2,159
(d) Payable Benefits and Withdrawals	\$0	\$0
(e) Payable Administrative Expenses	\$0	\$0
(f) Total Expenditures (sum of (a) through (e))	\$1,512,466	\$1,535,560
B. Market Value of Assets End of Year		
[A + 1(g) - 2(f)]	\$11,138,652	\$12,233,107
C. Approximate Return on Assets	(2.21)%	9.43%

^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	\$896,398	8%	\$1,423,886	12%
2. Government Securities				
(a) US Treasury Bills, Notes and Bonds	\$0		\$777,433	
(b) US State and Local Governmental Debt Securities	\$1,001,482		\$0	
(c) Foreign Governmental Debt Securities	\$0		\$0	
(d) Other	\$0		\$0	
(e) Total Government Securities (sum of (a) through (d))	\$1,001,482	9%	\$777,433	6%
3. Corporate Fixed Income				
(a) US Bonds	\$1,147,658		\$1,183,830	
(b) US Mortgage or other Asset Backed Securities	\$0		\$0	
(c) US Mutual Fund Shares (Bonds)	\$0		\$826,210	
(d) US Exchange Traded Funds (Bonds)	\$0		\$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))	\$1,147,658	10%	\$2,010,040	16%
4. Corporate Equity				
(a) US Equity	\$1,227,950		\$300,352	
(b) US Mutual Fund Shares (Equity)	\$0		\$0	
(c) US Exchange Traded Funds (Equity)	\$2,934,691		\$3,368,331	
(d) International Equity	\$2,258,594		\$2,514,246	
(e) International Mutual Fund Shares (Equity)	\$0		\$0	
(f) International Exchange Traded Funds (Equity)	\$0		\$34,922	
(g) Total Corporate Equity (sum of (a) through (f))	\$6,421,235	58%	\$6,217,851	51%
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	\$1,671,879		\$1,803,897	
(e) Total Alternative Investments (sum of (a) through (d))	\$1,671,879	15%	\$1,803,897	15%
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	\$11,138,652		\$12,233,107	
[sum of (1) through (8)]				

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:	48	36	2	0	18	104
New Actives:	3					3
Returned to Actives Status:						0
Data Corrections/Other Changes:	(1)					(1)
Vested Terminations:						0
Non-Vested Terminations:						0
Disabled:						0
Retirements:	(2)	2				0
Deaths with Beneficiary:						0
Deaths w/o Beneficiary:					(2)	(2)
Expired Annuity or Stop Payment:						0
Net Changes:	0	2	0	0	(2)	0
Total Participants June 30, 2017:	48	38	2	0	16	104

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									Totals	Valuation Payroll ^a
	Less than 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 35		
Under 20											\$ 0
20-24	2									2	\$ 97,215
25-29		2	1							3	\$ 149,719
30-34	1	3	3							7	\$ 347,519
35-39		2	3	3	2					10	\$ 531,831
40-44			2	4	4					10	\$ 601,287
45-49					3	5				8	\$ 516,417
50-54					4	1	1	1		7	\$ 437,273
55-59								1		1	\$ 71,966
60-64											\$ 0
65-69											\$ 0
Over 70											\$ 0
Totals	3	7	9	7	13	6	1	2	0	48	\$ 2,753,228
Averages _____											
Age: 40.8 years											
Service: 13.0 years											
Annual Pay: \$57,359 ^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	48	48
Total Annual Pay	\$2,628,609	\$2,753,228
Average Age	40.8	40.8
Average Service	13.2	13.0

Inactive Participants	July 1, 2016		July 1, 2017	
Type	No.	Annual Benefit	No.	Annual Benefit
Retirees	36	\$1,286,457	38	\$1,377,927
Survivors	18	\$210,146	16	\$197,628
Disabled Members	2	\$26,793	2	\$26,944
Deferred Vested Members	0	\$0	0	\$0

SECTION VI

ACTUARIAL ASSUMPTIONS AND METHODS

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

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%

¹Funded 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).

²Liquidity ratio equals assets as of the actuarial valuation date divided by expected benefit payments for the year.

³Based on investment policy.

As of June 30, 2017	
Assets	\$12,233,107
Liabilities using a 5.50% discount rate	\$39,788,901
Funded Ratio	31%
Expected Benefit Payments	\$1,686,323
Liquidity Ratio	7.25
Equity Exposure	51%
Projected Funded Ratio after 15 years	31%

Discount Rate

4.50%

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 1717 eligible active members and 2165 eligible retired members. The City of Morgantown Firemen’s Pension and Relief Fund reported 54 eligible active members and 56 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 \$548,107 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% <i>plus</i>																		
Service-based Increase:	Wage Inflation Increment: 1.00% <i>plus</i>																		
	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><u>Years of Service</u></th> <th style="text-align: center;"><u>Increase</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">20.00%</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">6.50%</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">3.50%</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">2.75%</td> </tr> <tr> <td style="text-align: center;">5-9</td> <td style="text-align: center;">2.50%</td> </tr> <tr> <td style="text-align: center;">10-29</td> <td style="text-align: center;">2.00%</td> </tr> <tr> <td style="text-align: center;">30-34</td> <td style="text-align: center;">1.25%</td> </tr> <tr> <td style="text-align: center;">after 34 years of service</td> <td style="text-align: center;">0.00%</td> </tr> </tbody> </table>	<u>Years of 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%
<u>Years of 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																		
<i>Amortization Policies:</i>																			
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	<p>Sample Rates –</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Age</u></th> <th style="text-align: center;"><u>Rates</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">25</td> <td style="text-align: center;">9%</td> </tr> <tr> <td style="text-align: center;">35</td> <td style="text-align: center;">4%</td> </tr> <tr> <td style="text-align: center;">45</td> <td style="text-align: center;">2%</td> </tr> <tr> <td style="text-align: center;">50</td> <td style="text-align: center;">0%</td> </tr> </tbody> </table>	<u>Age</u>	<u>Rates</u>	25	9%	35	4%	45	2%	50	0%
<u>Age</u>	<u>Rates</u>										
25	9%										
35	4%										
45	2%										
50	0%										
Retirement	<table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Age</u></th> <th style="text-align: center;"><u>Rates^a</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">50</td> <td style="text-align: center;">45%</td> </tr> <tr> <td style="text-align: center;">51-55</td> <td style="text-align: center;">30%</td> </tr> <tr> <td style="text-align: center;">56-59</td> <td style="text-align: center;">35%</td> </tr> <tr> <td style="text-align: center;">60</td> <td style="text-align: center;">100%</td> </tr> </tbody> </table> <p>^aTerminated vested participants are assumed to retire at age 50.</p>	<u>Age</u>	<u>Rates^a</u>	50	45%	51-55	30%	56-59	35%	60	100%
<u>Age</u>	<u>Rates^a</u>										
50	45%										
51-55	30%										
56-59	35%										
60	100%										
Mortality	<p>Active: RP-2014 Blue Collar Healthy Employee^b</p> <p>Post-Retirement: RP-2014 Blue Collar Healthy Annuitant</p> <p>Disabled: RP-2014 Blue Collar Healthy Annuitant set forward four years</p> <p>Tables above incorporate generational mortality improvement using MP-2014 2-dimensional mortality improvement scales</p> <p>^bAssumes 10% of deaths are duty-related and 90% are non-duty related.</p>										
Disability	<p>Sample Rates –</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Age</u></th> <th style="text-align: center;"><u>Rates^c</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">30</td> <td style="text-align: center;">0.22%</td> </tr> <tr> <td style="text-align: center;">40</td> <td style="text-align: center;">0.50%</td> </tr> <tr> <td style="text-align: center;">50</td> <td style="text-align: center;">0.79%</td> </tr> </tbody> </table> <p>^cAssumes 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.</p>	<u>Age</u>	<u>Rates^c</u>	30	0.22%	40	0.50%	50	0.79%		
<u>Age</u>	<u>Rates^c</u>										
30	0.22%										
40	0.50%										
50	0.79%										
Percent Married	90%										
Spouse Age	Females 3 years younger than males										

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

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	One member marked active as of July 1, 2016 was corrected to be terminated non-vested as of July 1, 2016.
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	<p>Open group projections assume:</p> <ul style="list-style-type: none"> (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 projection 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. <p>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.</p>
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 Fire Department are eligible to participate in the Firemen'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 compensation. The municipality has elected to contribute the minimum employer contribution under the Alternative 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.

Summary of Principal Plan Provisions

Actuarial Valuation as of July 1, 2017 (Continued)

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 fifty dollars per month (but a total not to exceed \$100 per month) until such individual attains the age of eighteen 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	Total Assets												Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
	Number		Assets (bo)	Benefit Payments	Expenses	Employer Contribs.	Employee Contribs.	Premium Tax		Assets (eoy)	Investment Income				
	Year End 30-Jun	Pay Active Status						Allocation Contribs.	Investment Income						
2017	48	56	\$11,138,652	\$1,533,401	\$2,159	\$870,926	\$218,900	\$485,359	\$1,054,830	\$12,233,107	\$45,762,352	\$33,529,245	27%		
2018	44	58	12,233,107	1,686,323	2,218	716,821	211,530	507,846	544,875	12,525,638	47,576,414	35,050,776	26%		
2019	40	61	12,525,638	1,816,917	2,240	2,629,022	204,446	548,107	598,421	14,686,478	49,277,841	34,591,363	30%		
2020	37	62	14,686,478	1,943,610	2,263	2,665,515	196,922	576,327	694,112	16,873,481	50,859,432	33,985,951	33%		
2021	33	64	16,873,481	2,051,385	2,288	2,594,380	190,998	593,549	788,797	18,987,532	52,347,422	33,359,890	36%		
2022	30	64	18,987,532	2,161,535	2,314	2,526,096	184,621	611,055	880,205	21,025,660	53,733,429	32,707,769	39%		
2023	28	65	21,025,660	2,264,776	2,318	2,459,366	179,753	625,767	968,358	22,991,809	55,031,933	32,040,124	42%		
2024	27	64	22,991,809	2,332,136	2,347	2,401,336	178,051	642,182	1,054,372	24,933,267	56,300,288	31,367,021	44%		
2025	25	65	24,933,267	2,386,139	2,350	2,368,832	177,561	654,267	1,140,070	26,885,508	57,560,726	30,675,218	47%		
2026	23	65	26,885,508	2,466,881	2,380	2,342,585	174,549	670,014	1,225,822	28,829,217	58,766,488	29,937,271	49%		
2027	20	66	28,829,217	2,597,887	2,385	2,301,363	166,478	685,439	1,309,621	30,691,846	59,826,210	29,134,364	51%		
2028	18	67	30,691,846	2,740,768	2,417	2,220,878	157,062	707,203	1,388,743	32,422,546	60,712,098	28,289,552	53%		
2029	16	68	32,422,546	2,869,797	2,450	2,131,148	148,713	728,373	1,462,040	34,020,573	61,438,163	27,417,590	55%		
2030	14	69	34,020,573	2,988,884	2,485	2,046,298	140,231	750,282	1,529,712	35,495,727	62,008,013	26,512,286	57%		
2031	12	70	35,495,727	3,108,773	2,520	1,962,761	129,800	771,849	1,591,814	36,840,659	62,401,725	25,561,066	59%		
2032	11	70	36,840,659	3,217,561	2,555	1,866,673	120,052	796,036	1,648,097	38,051,401	62,627,495	24,576,094	61%		
2033	9	71	38,051,401	3,304,897	2,590	1,775,560	111,339	818,346	1,698,912	39,148,070	62,713,178	23,565,108	62%		
2034	8	71	39,148,070	3,399,499	2,626	1,695,053	100,547	842,173	1,744,654	40,128,373	62,635,579	22,507,206	64%		
2035	6	71	40,128,373	3,493,904	2,660	1,606,966	88,409	867,286	1,784,996	40,979,466	62,379,927	21,400,461	66%		
2036	5	71	40,979,466	3,583,616	2,692	1,510,766	76,113	893,529	1,819,467	41,693,033	61,944,353	20,251,320	67%		
2037	4	71	41,693,033	3,654,915	2,723	1,416,457	65,046	918,488	1,848,201	42,283,587	61,348,426	19,064,839	69%		
2038	3	70	42,283,587	3,707,432	2,752	1,327,773	55,712	944,873	1,872,013	42,773,773	60,614,334	17,840,561	71%		
2039	3	70	42,773,773	3,751,216	2,778	1,247,866	47,089	971,120	1,891,710	43,177,565	59,750,455	16,572,890	72%		
2040	2	69	43,177,565	3,778,231	2,801	1,170,781	40,079	999,925	1,908,048	43,515,367	58,778,376	15,263,009	74%		
2041	2	68	43,515,367	3,794,684	2,820	1,102,948	34,456	1,028,110	1,921,876	43,805,252	57,714,352	13,909,100	76%		
2042	1	67	43,805,252	3,816,485	2,837	1,042,107	27,975	1,058,671	1,933,617	44,048,299	56,546,535	12,498,236	78%		
2043	1	65	44,048,299	3,816,373	2,850	979,936	23,286	1,090,106	1,943,768	44,266,172	55,302,601	11,036,429	80%		
2044	1	64	44,266,172	3,823,761	2,861	924,401	17,282	1,122,246	1,952,753	44,456,232	53,965,427	9,509,195	82%		
2045	0	63	44,456,232	3,828,138	2,869	862,741	11,065	1,156,604	1,960,463	44,616,098	52,533,357	7,917,259	85%		
2046	0	61	44,616,098	3,802,583	2,874	799,747	7,735	1,190,539	1,967,505	44,776,167	51,046,791	6,270,624	88%		
2047	0	60	44,776,167	3,766,645	2,876	745,160	5,379	1,225,363	1,975,015	44,957,563	49,518,732	4,561,169	91%		
2048	0	58	44,957,563	3,722,038	2,876	694,208	3,827	1,261,342	1,983,802	45,175,828	47,960,198	2,784,370	94%		
2049	0	56	45,175,828	3,672,104	2,874	645,230	2,644	1,298,266	1,994,442	45,441,432	46,376,967	935,535	98%		
2050	0	55	45,441,432	3,617,402	2,870	12,339	1,778	953,201	1,985,830	44,774,308	44,774,308	0	100%		
2051	0	53	44,774,308	3,558,606	2,863	6,934	1,144	0	1,935,772	43,156,689	43,156,689	0	100%		
2052	0	52	43,156,689	3,496,357	2,854	5,220	661	0	1,864,316	41,527,675	41,527,675	0	100%		
2053	0	50	41,527,675	3,430,238	2,843	4,253	392	0	1,792,454	39,891,694	39,891,694	0	100%		
2054	0	48	39,891,694	3,361,542	2,829	3,398	159	0	1,720,340	38,251,219	38,251,220	0	100%		
2055	0	47	38,251,219	3,289,851	2,812	2,812	0	0	1,648,098	36,609,466	36,609,466	0	100%		
2056	0	45	36,609,466	3,214,515	2,793	2,793	0	0	1,575,895	34,970,846	34,970,847	0	100%		
2057	0	43	34,970,846	3,136,638	2,769	2,769	0	0	1,503,890	33,338,098	33,338,099	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	\$2,716,646	\$0	\$2,716,646	\$211,530	\$1,446,472	\$1,234,942	\$1,939,969	\$548,107	\$1,391,862	\$2,218	\$2,629,022	\$0
2019	2,609,906	152,186	2,762,092	204,446	1,386,944	1,182,498	2,057,105	576,327	1,480,778	2,240	2,665,515	15,980
2020	2,497,203	358,045	2,855,248	196,922	1,321,540	1,124,618	2,061,048	593,549	1,467,499	2,263	2,594,380	37,595
2021	2,406,491	546,646	2,953,138	190,998	1,268,151	1,077,153	2,057,711	611,055	1,446,656	2,288	2,526,096	57,398
2022	2,308,393	743,495	3,051,888	184,621	1,212,927	1,028,306	2,054,513	625,767	1,428,746	2,314	2,459,366	78,067
2023	2,231,107	942,925	3,174,033	179,753	1,169,768	990,015	2,051,184	642,182	1,409,002	2,318	2,401,336	99,007
2024	2,198,609	1,120,780	3,319,389	178,051	1,150,348	972,297	2,048,456	654,267	1,394,189	2,347	2,368,832	117,682
2025	2,182,923	1,282,352	3,465,275	177,561	1,140,716	963,155	2,047,094	670,014	1,377,080	2,350	2,342,585	134,647
2026	2,130,725	1,450,818	3,581,543	174,549	1,112,589	938,040	2,046,382	685,439	1,360,943	2,380	2,301,363	152,336
2027	2,005,931	1,664,686	3,670,617	166,478	1,047,596	881,118	2,044,578	707,203	1,337,375	2,385	2,220,878	174,792
2028	1,861,127	1,923,883	3,785,010	157,062	973,791	816,729	2,040,375	728,373	1,312,002	2,417	2,131,148	202,008
2029	1,730,133	2,176,092	3,906,225	148,713	907,509	758,796	2,035,333	750,282	1,285,051	2,450	2,046,298	228,490
2030	1,604,608	2,447,928	4,052,536	140,231	841,791	701,560	2,030,566	771,849	1,258,717	2,485	1,962,761	257,032
2031	1,462,093	2,715,627	4,177,720	129,800	764,264	634,464	2,025,726	796,036	1,229,690	2,520	1,866,673	285,141
2032	1,329,038	3,024,796	4,353,834	120,052	691,481	571,429	2,019,921	818,346	1,201,575	2,555	1,775,560	317,604
2033	1,218,483	3,299,785	4,518,268	111,339	631,820	520,481	2,014,155	842,173	1,171,982	2,590	1,695,053	346,477
2034	1,091,304	3,602,890	4,694,194	100,547	562,959	462,412	2,009,215	867,286	1,141,929	2,626	1,606,966	378,303
2035	953,144	3,913,846	4,866,990	88,409	486,563	398,154	2,003,482	893,529	1,109,953	2,660	1,510,766	410,954
2036	815,851	4,251,316	5,067,167	76,113	411,556	335,443	1,996,810	918,488	1,078,322	2,692	1,416,457	446,388
2037	693,339	4,580,344	5,273,683	65,046	345,127	280,081	1,989,842	944,873	1,044,969	2,723	1,327,773	480,936
2038	590,959	4,910,664	5,501,623	55,712	288,727	233,015	1,983,219	971,120	1,012,099	2,752	1,247,866	515,620
2039	498,091	5,214,702	5,712,793	47,089	237,876	190,787	1,977,141	999,925	977,216	2,778	1,170,781	547,544
2040	423,205	5,528,566	5,951,772	40,079	197,066	156,987	1,971,270	1,028,110	943,160	2,801	1,102,948	580,499
2041	363,232	5,813,987	6,177,219	34,456	166,364	131,908	1,966,049	1,058,671	907,378	2,820	1,042,107	610,469
2042	294,471	6,107,865	6,402,336	27,975	133,495	105,520	1,961,685	1,090,106	871,579	2,837	979,936	641,326
2043	245,116	6,396,173	6,641,290	23,286	110,319	87,033	1,956,763	1,122,246	834,517	2,850	924,401	671,598
2044	181,918	6,672,980	6,854,898	17,282	81,236	63,954	1,952,531	1,156,604	795,927	2,861	862,741	700,663
2045	116,469	6,977,564	7,094,033	11,065	51,662	40,597	1,946,820	1,190,539	756,281	2,869	799,747	732,644
2046	81,419	7,264,959	7,346,378	7,735	35,842	28,107	1,939,542	1,225,363	714,179	2,874	745,160	762,821
2047	56,619	7,552,398	7,609,017	5,379	24,741	19,362	1,933,312	1,261,342	671,970	2,876	694,208	793,002
2048	40,284	7,842,905	7,883,188	3,827	17,599	13,772	1,926,848	1,298,266	628,582	2,876	645,230	823,505
2049	27,833	8,140,311	8,168,144	2,644	12,109	9,465	1,918,355	953,201	581,961	2,874	12,339	^b 854,733
2050	18,718	8,446,419	8,465,136	1,778	8,091	6,313	0	0	0	2,870	6,934	^b 886,874
2051	12,043	8,757,591	8,769,634	1,144	5,215	4,071	0	0	0	2,863	5,220	^b 919,547
2052	6,956	9,080,319	9,087,276	661	3,027	2,366	0	0	0	2,854	4,253	^b 953,434
2053	4,129	9,414,264	9,418,393	392	1,802	1,410	0	0	0	2,843	3,398	^b 988,498
2054	1,672	9,760,721	9,762,393	159	728	569	0	0	0	2,829	2,812	^b 1,024,876
2055	0	10,121,936	10,121,936	0	0	0	0	0	0	2,812	2,793	^b 1,062,803
2056	0	10,500,023	10,500,023	0	0	0	0	0	0	2,793	2,769	^b 1,102,502
2057	0	10,896,480	10,896,480	0	0	0	0	0	0	2,769	2,742	^b 1,144,130

^a Assumes employer makes contributions for the applicable valuation plan year in the following fiscal year.

^b Amount required to remain at 100% funded.

Actuarial Projections – Conservation Funding in 2019

Table A-3

Valuation Plan	Total Assets															
	Number		Assets			Benefit		Employer		Employee		Premium Tax		Actuarial		
	Year End 30-Jun	Active	Pay Status	(boy)	Payments	Expenses	Contribs.	Contribs.	Allocation	Investment	Assets (eoy)	Accrued Liability	Unfunded Liability	Funded Ratio		
2017	48	56	\$11,138,652	\$1,533,401	\$2,159	\$870,926	\$218,900	\$485,359	\$1,054,830	\$12,233,107	\$45,762,352	\$33,529,245	27%			
2018	44	58	12,233,107	1,686,323	2,218	716,821	211,530	507,846	544,875	12,525,638	47,576,414	35,050,776	26%			
2019	40	61	12,525,638	1,816,917	2,240	1,105,753	204,446	548,107	564,525	13,129,312	49,277,841	36,148,529	27%			
2020	37	62	13,129,312	1,943,610	2,263	1,210,082	196,922	576,327	591,653	13,758,423	50,859,432	37,101,009	27%			
2021	33	64	13,758,423	2,051,385	2,288	1,305,223	190,998	593,549	619,932	14,414,452	52,347,422	37,932,970	28%			
2022	30	64	14,414,452	2,161,535	2,314	1,402,799	184,621	611,055	649,421	15,098,499	53,733,429	38,634,930	28%			
2023	28	65	15,098,499	2,264,776	2,318	1,495,041	179,753	625,767	680,177	15,812,143	55,031,933	39,219,790	29%			
2024	27	64	15,812,143	2,332,136	2,347	1,547,229	178,051	642,182	712,280	16,557,402	56,300,288	39,742,886	29%			
2025	25	65	16,557,402	2,386,139	2,350	1,589,405	177,561	654,267	745,812	17,335,958	57,560,726	40,224,768	30%			
2026	23	65	17,335,958	2,466,881	2,380	1,656,659	174,549	670,014	780,829	18,148,748	58,766,488	40,617,740	31%			
2027	20	66	18,148,748	2,597,887	2,385	1,778,444	166,478	685,439	817,363	18,996,200	59,826,210	40,830,010	32%			
2028	18	67	18,996,200	2,740,768	2,417	1,906,837	157,062	707,203	855,450	19,879,567	60,712,098	40,832,531	33%			
2029	16	68	19,879,567	2,869,797	2,450	2,021,113	148,713	728,373	895,158	20,800,677	61,438,163	40,637,486	34%			
2030	14	69	20,800,677	2,988,884	2,485	2,124,925	140,231	750,282	936,566	21,761,312	62,008,013	40,246,701	35%			
2031	12	70	21,761,312	3,108,773	2,520	2,231,575	129,800	771,849	979,747	22,762,990	62,401,725	39,638,735	36%			
2032	11	70	22,762,990	3,217,561	2,555	2,323,964	120,052	796,036	1,024,778	23,807,704	62,627,495	38,819,791	38%			
2033	9	71	23,807,704	3,304,897	2,590	2,396,079	111,339	818,346	1,071,753	24,897,734	62,713,178	37,815,444	40%			
2034	8	71	24,897,734	3,399,499	2,626	2,475,775	100,547	842,173	1,120,762	26,034,866	62,635,579	36,600,713	42%			
2035	6	71	26,034,866	3,493,904	2,660	2,555,166	88,409	867,286	1,171,887	27,221,050	62,379,927	35,158,877	44%			
2036	5	71	27,221,050	3,583,616	2,692	2,628,904	76,113	893,529	1,225,220	28,458,508	61,944,353	33,485,845	46%			
2037	4	71	28,458,508	3,654,915	2,723	2,684,504	65,046	918,488	1,280,864	29,749,772	61,348,426	31,598,654	48%			
2038	3	70	29,749,772	3,707,432	2,752	2,718,463	55,712	944,873	1,338,937	31,097,573	60,614,334	29,516,761	51%			
2039	3	70	31,097,573	3,751,216	2,778	2,743,256	47,089	971,120	1,399,557	32,504,601	59,750,455	27,245,854	54%			
2040	2	69	32,504,601	3,778,231	2,801	2,747,376	40,079	999,925	1,462,848	33,973,797	58,778,376	24,804,579	58%			
2041	2	68	33,973,797	3,794,684	2,820	2,740,386	34,456	1,028,110	1,528,942	35,508,187	57,714,352	22,206,165	62%			
2042	1	67	35,508,187	3,816,485	2,837	2,737,093	27,975	1,058,671	1,597,967	37,110,571	56,546,535	19,435,964	66%			
2043	1	65	37,110,571	3,816,373	2,850	2,709,508	23,286	1,090,106	1,670,058	38,784,306	55,302,601	16,518,295	70%			
2044	1	64	38,784,306	3,823,761	2,861	2,689,823	17,282	1,122,246	1,745,354	40,532,389	53,965,427	13,433,038	75%			
2045	0	63	40,532,389	3,828,138	2,869	2,665,085	11,065	1,156,604	1,823,996	42,358,132	52,533,357	10,175,225	81%			
2046	0	61	42,358,132	3,802,583	2,874	2,608,404	7,735	1,190,539	1,906,143	44,265,496	51,046,791	6,781,295	87%			
2047	0	60	44,265,496	3,766,645	2,876	2,539,628	5,379	1,225,363	1,991,966	46,258,311	49,518,732	3,260,421	93%			
2048	0	58	46,258,311	3,722,038	2,876	2,088,274	3,827	1,261,342	2,073,358	47,960,198	47,960,198	0	100%			
2049	0	56	47,960,198	3,672,104	2,874	12,338	2,644	0	2,076,765	46,376,966	46,376,967	0	100%			
2050	0	55	46,376,966	3,617,402	2,870	9,187	1,778	0	2,006,648	44,774,308	44,774,308	0	100%			
2051	0	53	44,774,308	3,558,606	2,863	6,934	1,144	0	1,935,772	43,156,689	43,156,689	0	100%			
2052	0	52	43,156,689	3,496,357	2,854	5,220	661	0	1,864,316	41,527,675	41,527,675	0	100%			
2053	0	50	41,527,675	3,430,238	2,843	4,253	392	0	1,792,454	39,891,694	39,891,694	0	100%			
2054	0	48	39,891,693	3,361,542	2,829	3,399	159	0	1,720,340	38,251,220	38,251,220	0	100%			
2055	0	47	38,251,220	3,289,851	2,812	2,812	0	0	1,648,098	36,609,467	36,609,466	0	100%			
2056	0	45	36,609,467	3,214,515	2,793	2,792	0	0	1,575,895	34,970,846	34,970,847	0	100%			
2057	0	43	34,970,846	3,136,638	2,769	2,770	0	0	1,503,890	33,338,099	33,338,099	0	100%			

Actuarial Projections – Conservation Funding in 2019

Table A-4

Plan Year End	Benefit Payment Account ^a							Accumulation Account ^b						Statewide Employer Contribution	
	Assets (boy)	Net Benefit Pmts and Expenses	Employer Contribs.	5.50% of Pay Employee Contribs.	100.00% of Premium Tax Allocation	Investment Income	Transfer (To)/From Accumulation Account	Assets (boy) ^c	Net Benefit Pmts and Expenses	Employer Contribs.	1.50% of Pay Employee Contribs.	0.00% of Premium Tax Allocation	Investment Income		
2018	\$12,233,107	\$1,688,541	\$716,821	\$211,530	\$507,846	\$544,875	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	12,525,638	1,819,157	1,105,753	165,297	548,107	563,654	(13,089,292)	13,089,292	0	0	39,149	0	871	15,980	
2020	0	1,945,873	1,210,082	159,464	576,327	0	0	13,129,312	0	0	37,458	0	591,653	37,595	
2021	0	2,053,673	1,305,223	154,901	593,549	0	0	13,758,423	0	0	36,097	0	619,932	57,398	
2022	0	2,163,849	1,402,799	149,995	611,055	0	0	14,414,452	0	0	34,626	0	649,421	78,067	
2023	0	2,267,094	1,495,041	146,286	625,767	0	0	15,098,499	0	0	33,467	0	680,177	99,007	
2024	0	2,334,483	1,547,229	145,072	642,182	0	0	15,812,143	0	0	32,979	0	712,280	117,682	
2025	0	2,388,489	1,589,405	144,817	654,267	0	0	16,557,402	0	0	32,744	0	745,812	134,647	
2026	0	2,469,261	1,656,659	142,588	670,014	0	0	17,335,958	0	0	31,961	0	780,829	152,336	
2027	0	2,600,272	1,778,444	136,389	685,439	0	0	18,148,748	0	0	30,089	0	817,363	174,792	
2028	0	2,743,185	1,906,837	129,145	707,203	0	0	18,996,200	0	0	27,917	0	855,450	202,008	
2029	0	2,872,247	2,021,113	122,761	728,373	0	0	19,879,567	0	0	25,952	0	895,158	228,490	
2030	0	2,991,369	2,124,925	116,162	750,282	0	0	20,800,677	0	0	24,069	0	936,566	257,032	
2031	0	3,111,293	2,231,575	107,869	771,849	0	0	21,761,312	0	0	21,931	0	979,747	285,141	
2032	0	3,220,116	2,323,964	100,116	796,036	0	0	22,762,990	0	0	19,936	0	1,024,778	317,604	
2033	0	3,307,487	2,396,079	93,062	818,346	0	0	23,807,704	0	0	18,277	0	1,071,753	346,477	
2034	0	3,402,125	2,475,775	84,177	842,173	0	0	24,897,734	0	0	16,370	0	1,120,762	378,303	
2035	0	3,496,564	2,555,166	74,112	867,286	0	0	26,034,866	0	0	14,297	0	1,171,887	410,954	
2036	0	3,586,308	2,628,904	63,875	893,529	0	0	27,221,050	0	0	12,238	0	1,225,220	446,388	
2037	0	3,657,638	2,684,504	54,646	918,488	0	0	28,458,508	0	0	10,400	0	1,280,864	480,936	
2038	0	3,710,184	2,718,463	46,848	944,873	0	0	29,749,772	0	0	8,864	0	1,338,937	515,620	
2039	0	3,753,994	2,743,256	39,618	971,120	0	0	31,097,573	0	0	7,471	0	1,399,557	547,544	
2040	0	3,781,032	2,747,376	33,731	999,925	0	0	32,504,601	0	0	6,348	0	1,462,848	580,499	
2041	0	3,797,504	2,740,386	29,008	1,028,110	0	0	33,973,797	0	0	5,448	0	1,528,942	610,469	
2042	0	3,819,322	2,737,093	23,558	1,058,671	0	0	35,508,187	0	0	4,417	0	1,597,967	641,326	
2043	0	3,819,223	2,709,508	19,609	1,090,106	0	0	37,110,571	0	0	3,677	0	1,670,058	671,598	
2044	0	3,826,622	2,689,823	14,553	1,122,246	0	0	38,784,306	0	0	2,729	0	1,745,354	700,663	
2045	0	3,831,007	2,665,085	9,318	1,156,604	0	0	40,532,389	0	0	1,747	0	1,823,996	732,644	
2046	0	3,805,457	2,608,404	6,514	1,190,539	0	0	42,358,132	0	0	1,221	0	1,906,143	762,821	
2047	0	3,769,521	2,539,628	4,530	1,225,363	0	0	44,265,496	0	0	849	0	1,991,966	793,002	
2048	0	3,352,839	2,088,274	3,223	1,261,342	0	0	46,258,311	372,075	0	604	0	2,073,357	823,505	
2049	0	0	0	0	0	0	0	47,960,197	3,674,978	12,338	2,644	0	2,076,765	854,733	
2050	0	0	0	0	0	0	0	46,376,966	3,620,272	9,187	1,778	0	2,006,648	886,874	
2051	0	0	0	0	0	0	0	44,774,307	3,561,469	6,934	1,144	0	1,935,772	919,547	
2052	0	0	0	0	0	0	0	43,156,688	3,499,211	5,220	661	0	1,864,316	953,434	
2053	0	0	0	0	0	0	0	41,527,674	3,433,081	4,253	392	0	1,792,454	988,498	
2054	0	0	0	0	0	0	0	39,891,692	3,364,371	3,399	159	0	1,720,340	1,024,876	
2055	0	0	0	0	0	0	0	38,251,219	3,292,663	2,812	0	0	1,648,098	1,062,803	
2056	0	0	0	0	0	0	0	36,609,466	3,217,308	2,792	0	0	1,575,895	1,102,502	
2057	0	0	0	0	0	0	0	34,970,845	3,139,407	2,770	0	0	1,503,890	1,144,130	

^a Employer contributions paid from the City's General Fund are used to finance benefits not covered by the applicable employee contributions or premium tax allocation.

^b Assets accumulate in the Pension and Relief Fund.

^c Includes transfer from Benefit Payment Account to Accumulation Account in Plan Year End June 30, 2018

Actuarial Projections – Optional Funding in (N/A)

Table A-5

Valuation Plan	Total Assets													
	Number		Assets							Premium Tax		Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
	Year End	Pay	Assets (bo)	Benefit Payments	Expenses	Employer Contribs.	Employee Contribs.	Allocation Contribs.	Investment Income	Assets (eoy)				
30-Jun	Active	Status												
2017	48	56	\$11,138,652	\$1,533,401	\$2,159	\$870,926	\$218,900	\$485,359	\$1,054,830	\$12,233,107	\$45,762,352	\$33,529,245	27%	
2018	48	58	12,233,107	1,686,323	2,218	716,821	211,530	507,846	544,875	12,525,638	47,604,287	35,078,649	26%	
2019	48	61	12,525,638	1,816,917	2,320	766,998	219,720	548,107	557,325	12,798,551	49,422,255	36,623,704	26%	
2020	48	62	12,798,551	1,944,132	2,444	820,688	232,242	576,327	568,873	13,050,105	51,227,890	38,177,785	25%	
2021	48	64	13,050,105	2,053,527	2,552	878,136	244,346	593,549	579,688	13,289,745	53,047,831	39,758,086	25%	
2022	48	65	13,289,745	2,166,255	2,663	939,606	256,903	611,055	589,997	13,518,389	54,880,979	41,362,590	25%	
2023	48	65	13,518,389	2,272,822	2,749	1,005,378	271,254	625,767	600,024	13,745,241	56,743,325	42,998,084	24%	
2024	48	65	13,745,241	2,344,152	2,844	1,075,754	286,641	642,182	610,916	14,013,738	58,686,709	44,672,971	24%	
2025	48	65	14,013,738	2,402,833	2,904	1,151,057	301,746	654,267	623,973	14,339,044	60,733,499	46,394,455	24%	
2026	48	65	14,339,044	2,488,817	2,993	1,231,631	315,138	670,014	639,137	14,703,154	62,851,916	48,148,762	23%	
2027	48	66	14,703,154	2,625,526	3,075	1,317,845	328,019	685,439	655,027	15,060,883	64,979,028	49,918,145	23%	
2028	48	68	15,060,883	2,774,757	3,202	1,410,094	343,941	707,203	670,692	15,414,854	67,107,297	51,692,443	23%	
2029	48	69	15,414,854	2,910,965	3,321	1,508,801	360,070	728,373	686,613	15,784,426	69,259,517	53,475,091	23%	
2030	48	70	15,784,426	3,038,054	3,447	1,614,417	378,085	750,282	703,652	16,189,361	71,452,388	55,263,027	23%	
2031	48	71	16,189,361	3,166,834	3,566	1,727,426	393,695	771,849	722,348	16,634,278	73,680,223	57,045,945	23%	
2032	48	71	16,634,278	3,285,527	3,702	1,848,346	414,202	796,036	743,410	17,147,043	75,966,753	58,819,710	23%	
2033	48	72	17,147,043	3,384,100	3,817	1,977,730	432,202	818,346	768,064	17,755,468	78,343,038	60,587,570	23%	
2034	48	72	17,755,468	3,491,128	3,941	2,116,171	451,103	842,173	797,091	18,466,937	80,805,453	62,338,516	23%	
2035	48	73	18,466,937	3,599,179	4,063	2,264,303	469,407	867,286	830,962	19,295,653	83,356,694	64,061,041	23%	
2036	48	73	19,295,653	3,703,930	4,191	2,422,804	490,230	893,529	870,495	20,264,590	86,013,297	65,748,707	24%	
2037	48	73	20,264,590	3,791,161	4,308	2,592,400	509,943	918,488	916,921	21,406,873	88,806,625	67,399,752	24%	
2038	48	73	21,406,873	3,861,145	4,427	2,773,868	529,636	944,873	971,827	22,761,505	91,764,556	69,003,051	25%	
2039	48	73	22,761,505	3,928,602	4,543	2,968,039	547,418	971,120	1,036,583	24,351,520	94,880,047	70,528,527	26%	
2040	48	73	24,351,520	3,999,529	4,673	3,175,802	568,275	999,925	1,112,281	26,203,600	98,160,181	71,956,581	27%	
2041	48	73	26,203,600	4,082,603	4,798	3,398,108	587,140	1,028,110	1,199,766	28,329,323	101,604,751	73,275,428	28%	
2042	48	73	28,329,323	4,191,645	4,936	3,635,976	605,998	1,058,671	1,299,388	30,732,774	105,189,159	74,456,385	29%	
2043	48	73	30,732,774	4,303,757	5,081	3,890,494	626,661	1,090,106	1,411,868	33,443,066	108,918,875	75,475,809	31%	
2044	48	73	33,443,066	4,450,842	5,227	4,162,829	645,397	1,122,246	1,537,747	36,455,216	112,763,128	76,307,912	32%	
2045	48	74	36,455,216	4,618,797	5,388	4,454,227	666,953	1,156,604	1,677,281	39,786,096	116,715,736	76,929,640	34%	
2046	48	74	39,786,096	4,776,702	5,545	4,766,023	689,502	1,190,539	1,831,849	43,481,762	120,805,158	77,323,396	36%	
2047	48	74	43,481,762	4,940,189	5,706	5,099,645	713,299	1,225,363	2,003,241	47,577,414	125,038,130	77,460,716	38%	
2048	48	74	47,577,414	5,109,621	5,872	5,456,620	738,562	1,261,342	2,193,077	52,111,522	129,421,062	77,309,540	40%	
2049	48	74	52,111,522	5,288,020	6,042	5,838,583	764,965	1,298,266	2,403,047	57,122,321	133,960,311	76,837,990	43%	
2050	48	75	57,122,321	5,472,775	6,217	6,247,284	792,240	1,336,394	2,634,968	62,654,214	138,662,163	76,007,949	45%	
2051	48	75	62,654,214	5,664,770	6,397	6,684,594	820,297	1,375,568	2,890,854	68,754,360	143,530,498	74,776,138	48%	
2052	48	75	68,754,360	5,865,513	6,584	7,152,516	850,087	1,416,264	3,172,870	75,474,001	148,567,682	73,093,681	51%	
2053	48	75	75,474,001	6,076,663	6,775	7,653,192	881,247	1,458,101	3,483,317	82,866,420	153,782,226	70,915,806	54%	
2054	48	75	82,866,420	6,295,377	6,970	8,188,915	913,721	1,501,058	3,824,704	90,992,471	159,181,948	68,189,477	57%	
2055	48	75	90,992,471	6,520,900	7,171	8,762,139	948,007	1,545,413	4,199,859	99,919,819	164,777,383	64,857,564	61%	
2056	48	75	99,919,819	6,751,451	7,375	9,375,489	984,417	1,590,965	4,611,928	109,723,792	170,582,606	60,858,814	64%	
2057	48	75	109,723,792	6,987,153	7,582	10,031,773	1,022,671	1,637,520	5,064,347	120,485,368	176,614,500	56,129,132	68%	

Actuarial Projections – Optional Funding in (N/A)

Table A-6

Valuation Plan Year End 30-Jun ^{a,b}	Employer Contributions								Minimum Payment			Statewide Employer Contribution
	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	Alternative Employer Contribution	Minimum Employer Contribution	
2018	\$2,716,646	\$211,530	\$1,446,472	\$1,234,942	\$1,939,969	\$548,107	\$1,391,862	\$2,218	\$2,629,022	\$766,998	\$766,998	\$0
2019	2,762,092	219,720	1,464,911	1,245,191	2,058,740	576,327	1,482,413	2,320	2,729,924	820,688	820,688	0
2020	2,855,248	232,242	1,505,167	1,272,926	2,182,140	593,549	1,588,591	2,444	2,863,961	878,136	878,136	0
2021	2,953,138	244,346	1,548,795	1,304,449	2,311,509	611,055	1,700,454	2,552	3,007,455	939,606	939,606	0
2022	3,051,888	256,903	1,594,944	1,338,041	2,448,554	625,767	1,822,787	2,663	3,163,490	1,005,378	1,005,378	0
2023	3,174,033	271,254	1,654,614	1,383,360	2,593,949	642,182	1,951,767	2,749	3,337,875	1,075,754	1,075,754	0
2024	3,319,389	286,641	1,727,097	1,440,456	2,749,043	654,267	2,094,776	2,844	3,538,076	1,151,057	1,151,057	0
2025	3,465,275	301,746	1,801,120	1,499,373	2,915,475	670,014	2,245,461	2,904	3,747,738	1,231,631	1,231,631	0
2026	3,581,543	315,138	1,860,255	1,545,117	3,095,032	685,439	2,409,593	2,993	3,957,702	1,317,845	1,317,845	0
2027	3,670,617	328,019	1,905,876	1,577,857	3,288,339	707,203	2,581,136	3,075	4,162,068	1,410,094	1,410,094	0
2028	3,785,010	343,941	1,966,044	1,622,103	3,495,932	728,373	2,767,559	3,202	4,392,864	1,508,801	1,508,801	0
2029	3,906,225	360,070	2,030,309	1,670,238	3,719,089	750,282	2,968,807	3,321	4,642,366	1,614,417	1,614,417	0
2030	4,052,536	378,085	2,105,294	1,727,209	3,960,404	771,849	3,188,555	3,447	4,919,210	1,727,426	1,727,426	0
2031	4,177,720	393,695	2,166,452	1,772,757	4,222,487	796,036	3,426,451	3,566	5,202,775	1,848,346	1,848,346	0
2032	4,353,834	414,202	2,253,671	1,839,469	4,507,961	818,346	3,689,615	3,702	5,532,787	1,977,730	1,977,730	0
2033	4,518,268	432,202	2,336,624	1,904,422	4,820,620	842,173	3,978,447	3,817	5,886,685	2,116,171	2,116,171	0
2034	4,694,194	451,103	2,424,851	1,973,748	5,165,836	867,286	4,298,550	3,941	6,276,239	2,264,303	2,264,303	0
2035	4,866,990	469,407	2,509,689	2,040,282	5,549,072	893,529	4,655,543	4,063	6,699,888	2,422,804	2,422,804	0
2036	5,067,167	490,230	2,609,644	2,119,414	5,977,336	918,488	5,058,848	4,191	7,182,453	2,592,400	2,592,400	0
2037	5,273,683	509,943	2,714,040	2,204,097	6,460,297	944,873	5,515,424	4,308	7,723,829	2,773,868	2,773,868	0
2038	5,501,623	529,636	2,828,569	2,298,934	7,011,255	971,120	6,040,135	4,427	8,343,495	2,968,039	2,968,039	0
2039	5,712,793	547,418	2,933,761	2,386,343	7,647,110	999,925	6,647,185	4,543	9,038,071	3,175,802	3,175,802	0
2040	5,951,772	568,275	3,052,722	2,484,448	8,389,047	1,028,110	7,360,937	4,673	9,850,058	3,398,108	3,398,108	0
2041	6,177,219	587,140	3,166,405	2,579,265	9,268,827	1,058,671	8,210,156	4,798	10,794,220	3,635,976	3,635,976	0
2042	6,402,336	605,998	3,281,754	2,675,756	10,334,479	1,090,106	9,244,373	4,936	11,925,065	3,890,494	3,890,494	0
2043	6,641,290	626,661	3,403,902	2,777,240	11,657,126	1,122,246	10,534,880	5,081	13,317,201	4,162,829	4,162,829	0
2044	6,854,898	645,397	3,514,800	2,869,403	13,352,947	1,156,604	12,196,343	5,227	15,070,972	4,454,227	4,454,227	0
2045	7,094,033	666,953	3,640,316	2,973,363	15,622,541	1,190,539	14,432,002	5,388	17,410,753	4,766,023	4,766,023	0
2046	7,346,378	689,502	3,771,333	3,081,831	18,845,955	1,225,363	17,620,592	5,545	20,707,968	5,099,645	5,099,645	0
2047	7,609,017	713,299	3,907,112	3,193,813	23,839,772	1,261,342	22,578,430	5,706	25,777,950	5,456,620	5,456,620	0
2048	7,883,188	738,562	4,048,491	3,309,929	32,722,976	1,298,266	31,424,710	5,872	34,740,511	5,838,583	5,838,583	0
2049	8,168,144	764,965	4,195,171	3,430,206	53,264,174	1,336,394	51,927,780	6,042	55,364,029	6,247,284	6,247,284	0
2050	8,465,136	792,240	4,347,815	3,555,576	78,547,819	1,375,568	77,172,251	6,217	79,833,003	6,684,594	6,684,594	0
2051	8,769,634	820,297	4,504,187	3,683,890	77,699,307	1,416,264	76,283,043	6,397	78,655,092	7,152,516	7,152,516	0
2052	9,087,276	850,087	4,667,341	3,817,254	76,440,085	1,458,101	74,981,984	6,584	77,025,301	7,653,192	7,653,192	0
2053	9,418,393	881,247	4,837,591	3,956,344	74,720,190	1,501,058	73,219,132	6,775	74,894,042	8,188,915	8,188,915	0
2054	9,762,393	913,721	5,014,678	4,100,957	72,493,852	1,545,413	70,948,439	6,970	72,207,882	8,762,139	8,762,139	0
2055	10,121,936	948,007	5,199,851	4,251,844	69,706,856	1,590,965	68,115,891	7,171	68,909,528	9,375,489	9,375,489	0
2056	10,500,023	984,417	5,394,642	4,410,225	66,300,799	1,637,520	64,663,279	7,375	64,939,085	10,031,773	10,031,773	0
2057	10,896,480	1,022,671	5,599,213	4,576,542	62,213,068	1,685,180	60,527,888	7,582	60,229,010	10,733,997	10,733,997	0

^a Assumes sponsor selects Optional funding policy if contributions are lower.

^b Assumes employer makes contributions for the applicable valuation plan year in the following fiscal year.

^c Amount required to remain at 100% funded.

Actuarial Projections – Conservation Funding in 2036

Table A-7

Valuation Plan Year End 30-Jun	Number		Total Assets								Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
	Active	Pay Status	Assets (boy)	Benefit Payments	Expenses	Employer Contribs.	Employee Contribs.	Premium Tax		Assets (eoy)			
								Allocation Contribs.	Investment Income				
2017	48	56	\$11,138,652	\$1,533,401	\$2,159	\$870,926	\$218,900	\$485,359	\$1,054,830	\$12,233,107	\$45,762,352	\$33,529,245	27%
2018	48	58	12,233,107	1,686,323	2,218	716,821	211,530	507,846	544,875	12,525,638	47,604,287	35,078,649	26%
2019	48	61	12,525,638	1,816,917	2,320	766,998	219,720	548,107	557,325	12,798,551	49,422,255	36,623,704	26%
2020	48	62	12,798,551	1,944,132	2,444	820,688	232,242	576,327	568,874	13,050,106	51,227,890	38,177,784	25%
2021	48	64	13,050,106	2,053,527	2,552	878,136	244,346	593,549	579,688	13,289,746	53,047,831	39,758,085	25%
2022	48	65	13,289,746	2,166,255	2,663	939,606	256,903	611,055	589,998	13,518,390	54,880,979	41,362,589	25%
2023	48	65	13,518,390	2,272,822	2,749	1,005,378	271,254	625,767	600,024	13,745,242	56,743,325	42,998,083	24%
2024	48	65	13,745,242	2,344,152	2,844	1,075,754	286,641	642,182	610,916	14,013,739	58,686,709	44,672,970	24%
2025	48	65	14,013,739	2,402,833	2,904	1,151,057	301,746	654,267	623,972	14,339,044	60,733,499	46,394,455	24%
2026	48	65	14,339,044	2,488,817	2,993	1,231,631	315,138	670,014	639,137	14,703,154	62,851,916	48,148,762	23%
2027	48	66	14,703,154	2,625,526	3,075	1,317,845	328,019	685,439	655,026	15,060,882	64,979,028	49,918,146	23%
2028	48	68	15,060,882	2,774,757	3,202	1,410,094	343,941	707,203	670,692	15,414,853	67,107,297	51,692,444	23%
2029	48	69	15,414,853	2,910,965	3,321	1,508,801	360,070	728,373	686,613	15,784,424	69,259,517	53,475,093	23%
2030	48	70	15,784,424	3,038,054	3,447	1,614,417	378,085	750,282	703,652	16,189,359	71,452,388	55,263,029	23%
2031	48	71	16,189,359	3,166,834	3,566	1,727,426	393,695	771,849	722,348	16,634,277	73,680,223	57,045,946	23%
2032	48	71	16,634,277	3,285,527	3,702	1,848,346	414,202	796,036	743,410	17,147,042	75,966,753	58,819,711	23%
2033	48	72	17,147,042	3,384,100	3,817	1,977,730	432,202	818,346	768,065	17,755,468	78,343,038	60,587,570	23%
2034	48	72	17,755,468	3,491,128	3,941	2,116,171	451,103	842,173	797,091	18,466,937	80,805,453	62,338,516	23%
2035	45	73	18,466,937	3,599,179	4,063	2,264,303	469,407	867,286	830,962	19,295,653	83,312,590	64,016,937	23%
2036	42	73	19,295,653	3,703,930	4,083	2,420,818	466,061	893,529	869,915	20,237,963	85,801,435	65,563,472	24%
2037	40	73	20,237,963	3,790,334	4,106	2,484,743	463,180	918,488	912,310	21,222,244	88,297,289	67,075,045	24%
2038	38	72	21,222,244	3,858,068	4,132	2,529,629	459,426	944,873	956,597	22,250,569	90,819,705	68,569,136	24%
2039	36	73	22,250,569	3,922,176	4,160	2,572,802	453,630	971,120	1,002,860	23,324,645	93,348,712	70,024,067	25%
2040	34	72	23,324,645	3,988,810	4,189	2,616,652	446,961	999,925	1,051,179	24,446,363	95,873,080	71,426,717	25%
2041	31	73	24,446,363	4,066,699	4,219	2,673,878	438,623	1,028,110	1,101,637	25,617,693	98,379,148	72,761,455	26%
2042	29	73	25,617,693	4,169,312	4,250	2,756,984	426,140	1,058,671	1,154,315	26,840,241	100,816,514	73,976,273	27%
2043	27	73	26,840,241	4,273,833	4,281	2,841,894	412,659	1,090,106	1,209,292	28,116,078	103,169,247	75,053,169	27%
2044	25	73	28,116,078	4,412,066	4,311	2,962,774	395,566	1,122,246	1,266,652	29,446,939	105,381,655	75,934,716	28%
2045	23	73	29,446,939	4,569,898	4,342	3,103,014	376,098	1,156,604	1,326,480	30,834,895	107,418,994	76,584,099	29%
2046	21	73	30,834,895	4,716,384	4,373	3,231,886	357,190	1,190,539	1,388,880	32,282,633	109,291,547	77,008,914	30%
2047	19	74	32,282,633	4,867,072	4,404	3,365,099	337,040	1,225,363	1,453,965	33,792,624	110,981,005	77,188,381	30%
2048	17	74	33,792,624	5,022,137	4,436	3,502,453	315,750	1,261,342	1,521,847	35,367,443	112,466,918	77,099,475	31%
2049	15	74	35,367,443	5,184,364	4,468	3,647,341	292,894	1,298,266	1,592,640	37,009,752	113,727,271	76,717,519	33%
2050	13	74	37,009,752	5,350,831	4,500	3,797,013	268,034	1,336,394	1,666,465	38,722,327	114,737,816	76,015,489	34%
2051	11	74	38,722,327	5,522,627	4,533	3,952,758	241,055	1,375,568	1,743,444	40,507,992	115,469,556	74,961,564	35%
2052	10	74	40,507,992	5,700,817	4,566	4,114,926	212,178	1,416,264	1,823,705	42,369,682	115,889,004	73,519,322	37%
2053	8	74	42,369,682	5,887,018	4,599	4,285,533	181,442	1,458,101	1,907,380	44,310,521	115,967,439	71,656,918	38%
2054	6	74	44,310,521	6,078,886	4,632	4,460,178	150,894	1,501,058	1,994,610	46,333,743	115,674,061	69,340,318	40%
2055	5	74	46,333,743	6,274,376	4,664	4,634,290	123,137	1,545,413	2,085,548	48,443,091	114,999,081	66,555,990	42%
2056	4	73	48,443,091	6,464,568	4,694	4,799,574	98,166	1,590,965	2,180,372	50,642,906	113,969,620	63,326,714	44%
2057	3	72	50,642,906	6,629,898	4,723	4,936,866	75,735	1,637,520	2,279,276	52,937,682	112,611,214	59,673,532	47%

Actuarial Projections – Conservation Funding in 2036

Table A-8

Plan Year End 30-Jun	Benefit Payment Account ^a						Accumulation Account ^b						Minimum Payment			Statewide Employer Contribution
	Assets (boy)	Net Benefit Pmts and Expenses	Employer Contribs.	5.50% of Pay Employee Contribs.	100.00% of Premium Tax Allocation	Investment Income	Assets (boy) ^c	Net Benefit Pmts and Expenses	Employer Contribs.	1.50% of Pay Employee Contribs.	0.00% of Premium Tax Allocation	Investment Income	Conservation Employer Cont.	Alternative Employer Cont.	Minimum Alt /Cons Cont.	
2018	\$12,233,107	\$1,688,541	\$716,821	\$211,530	\$507,846	\$544,875	\$0	\$0	\$0	\$0	\$0	\$0	NA	\$716,821	\$716,821	\$0
2019	12,525,638	1,819,237	766,998	219,720	548,107	557,325	0	0	0	0	0	0	NA	766,998	766,998	0
2020	12,798,551	1,946,576	820,688	232,242	576,327	568,874	0	0	0	0	0	0	NA	820,688	820,688	0
2021	13,050,106	2,056,079	878,136	244,346	593,549	579,688	0	0	0	0	0	0	NA	878,136	878,136	0
2022	13,289,746	2,168,918	939,606	256,903	611,055	589,998	0	0	0	0	0	0	NA	939,606	939,606	0
2023	13,518,390	2,275,571	1,005,378	271,254	625,767	600,024	0	0	0	0	0	0	NA	1,005,378	1,005,378	0
2024	13,745,242	2,346,996	1,075,754	286,641	642,182	610,916	0	0	0	0	0	0	NA	1,075,754	1,075,754	0
2025	14,013,738	2,405,737	1,151,057	301,746	654,267	623,972	0	0	0	0	0	0	NA	1,151,057	1,151,057	0
2026	14,339,044	2,491,810	1,231,631	315,138	670,014	639,137	0	0	0	0	0	0	NA	1,231,631	1,231,631	0
2027	14,703,153	2,628,601	1,317,845	328,019	685,439	655,026	0	0	0	0	0	0	NA	1,317,845	1,317,845	0
2028	15,060,882	2,777,959	1,410,094	343,941	707,203	670,692	0	0	0	0	0	0	NA	1,410,094	1,410,094	0
2029	15,414,852	2,914,286	1,508,801	360,070	728,373	686,613	0	0	0	0	0	0	NA	1,508,801	1,508,801	0
2030	15,784,423	3,041,501	1,614,417	378,085	750,282	703,652	0	0	0	0	0	0	NA	1,614,417	1,614,417	0
2031	16,189,358	3,170,400	1,727,426	393,695	771,849	722,348	0	0	0	0	0	0	NA	1,727,426	1,727,426	0
2032	16,634,276	3,289,229	1,848,346	414,202	796,036	743,410	0	0	0	0	0	0	NA	1,848,346	1,848,346	0
2033	17,147,041	3,387,917	1,977,730	432,202	818,346	768,065	0	0	0	0	0	0	NA	1,977,730	1,977,730	0
2034	17,755,467	3,495,069	2,116,171	451,103	842,173	797,091	0	0	0	0	0	0	NA	2,116,171	2,116,171	0
2035	18,466,936	3,603,242	2,264,303	469,407	867,286	830,962	0	0	0	0	0	0	NA	2,264,303	2,264,303	0
2036	19,295,652	3,708,013	2,420,818	393,666	893,529	868,304	20,163,957	0	72,395	0	1,611	2,420,818	2,422,804	2,420,818	25,285	
2037	0	3,794,440	2,484,743	391,209	918,488	0	20,237,963	0	0	71,971	0	912,310	2,484,743	2,592,400	2,484,743	49,942
2038	0	3,862,200	2,529,629	387,698	944,873	0	21,222,244	0	0	71,728	0	956,597	2,529,629	2,773,868	2,529,629	75,576
2039	0	3,926,336	2,572,802	382,414	971,120	0	22,250,569	0	0	71,216	0	1,002,860	2,572,802	2,968,039	2,572,802	101,333
2040	0	3,992,999	2,616,652	376,422	999,925	0	23,324,645	0	0	70,539	0	1,051,179	2,616,652	3,175,802	2,616,652	131,165
2041	0	4,070,918	2,673,878	368,930	1,028,110	0	24,446,363	0	0	69,693	0	1,101,637	2,673,878	3,398,108	2,673,878	160,758
2042	0	4,173,562	2,756,984	357,907	1,058,671	0	25,617,693	0	0	68,233	0	1,154,315	2,756,984	3,635,976	2,756,984	194,615
2043	0	4,278,114	2,841,894	346,114	1,090,106	0	26,840,241	0	0	66,545	0	1,209,292	2,841,894	3,890,494	2,841,894	231,521
2044	0	4,416,377	2,962,774	331,357	1,122,246	0	28,116,078	0	0	64,209	0	1,266,652	2,962,774	4,162,829	2,962,774	270,303
2045	0	4,574,240	3,103,014	314,622	1,156,604	0	29,446,939	0	0	61,476	0	1,326,480	3,103,014	4,454,227	3,103,014	314,541
2046	0	4,720,757	3,231,886	298,332	1,190,539	0	30,834,895	0	0	58,858	0	1,388,880	3,231,886	4,766,023	3,231,886	359,363
2047	0	4,871,476	3,365,099	281,014	1,225,363	0	32,282,633	0	0	56,026	0	1,453,965	3,365,099	5,099,645	3,365,099	406,762
2048	0	5,026,573	3,502,453	262,778	1,261,342	0	33,792,624	0	0	52,972	0	1,521,847	3,502,453	5,456,620	3,502,453	456,932
2049	0	5,188,832	3,647,341	243,225	1,298,266	0	35,367,443	0	0	49,669	0	1,592,640	3,647,341	5,838,583	3,647,341	509,976
2050	0	5,355,331	3,797,013	221,924	1,336,394	0	37,009,752	0	0	46,110	0	1,666,465	3,797,013	6,247,284	3,797,013	566,072
2051	0	5,527,160	3,952,758	198,834	1,375,568	0	38,722,327	0	0	42,221	0	1,743,444	3,952,758	6,684,594	3,952,758	625,264
2052	0	5,705,383	4,114,926	174,193	1,416,264	0	40,507,992	0	0	37,985	0	1,823,705	4,114,926	7,152,516	4,114,926	688,269
2053	0	5,891,617	4,285,533	147,983	1,458,101	0	42,369,682	0	0	33,459	0	1,907,380	4,285,533	7,653,192	4,285,533	754,715
2054	0	6,083,518	4,460,178	122,282	1,501,058	0	44,310,521	0	0	28,612	0	1,994,610	4,460,178	8,188,915	4,460,178	824,768
2055	0	6,279,040	4,634,290	99,337	1,545,413	0	46,333,743	0	0	23,800	0	2,085,548	4,634,290	8,762,139	4,634,290	896,201
2056	0	6,469,262	4,799,574	78,723	1,590,965	0	48,443,091	0	0	19,443	0	2,180,372	4,799,574	9,375,489	4,799,574	966,404
2057	0	6,634,621	4,936,866	60,235	1,637,520	0	50,642,906	0	0	15,500	0	2,279,276	4,936,866	10,031,773	4,936,866	1,035,631

^a Employer contributions paid from the City's General Fund are used to finance benefits not covered by the applicable employee contributions or premium tax allocation.

^b Assets accumulate in the Pension and Relief Fund.

^c Includes transfer from Benefit Payment Account to Accumulation Account in Plan Year End June 30, 2036.