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

Actuarial Valuation Report
for the Year Beginning July 1, 2017

September 25, 2018

Mr. Brian Blankenship
Finance Director
100 Courthouse Road
Princeton, WV 24740

Lt. Tim Gray
Pension Board Secretary
City of Princeton Policemen's Pension and Relief Fund

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

Dear Mr. Blankenship and Lt. Gray:

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

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

- The sponsor's funding requirements for the fiscal year ending June 30, 2019, based on the selected funding policy, i.e. the 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 5.50%. 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 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 Princeton, West Virginia Policemen'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	$4,177,903
Actuarial Accrued Liability	$10,652,278
Unfunded Actuarial Accrued Liability	$6,474,375
Funded Ratio	39.22%

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	$198,672
7% Increase in Alternative Contribution	$13,907
FYE 06/30/2018 Alternative Contribution	$212,579
Additional Contribution	$0
Final FYE 06/30/2018 Alternative Contribution	$212,579

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	$212,579
7% Increase in Alternative Contribution	$14,881
FYE 06/30/2019 Alternative Contribution	$227,460
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	$227,460
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	$227,460

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.

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 changed from 5.00% for the July 1, 2016 actuarial valuation to 5.50% for the July 1, 2017 actuarial valuation.
    - 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 39% (using a testing interest rate of 5.50% for all plans using the Alternative funding policy), ratio of assets to benefits of 7.45, equity allocation of 51%, and 15-year projected funded ratio of 50%, resulted in a discount rate assumption of 5.50%.
    - The change in interest rate used to discount liabilities from 5.00% as of July 1, 2016, to 5.50% as of July 1, 2017, decreased liabilities by $761,192.
- The Fund experienced an approximate annualized return of 9.35% on the market value of assets during the plan year ended June 30, 2017, which compares to the expected annualized return of 5.00%. The difference in actual versus expected return produced an asset (gain)/loss of ($166,618).
- 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 ($166,622) 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 5.50%:

- The funded ratio is projected to increase from 39% at June 30, 2017, to 44% at June 30, 2027, to 57% at June 30, 2037, and then increase to 100% at June 30, 2054.
- Employer contributions are expected to increase from $212,579 (or 23% of pay) for the fiscal year end June 30, 2018, to $1,168,747 (or 27% of pay) for fiscal year end June 30, 2057.

Please note that a funded ratio of only 39% at June 30, 2017, means that the plan is underfunded.

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 $227,460 is sufficient to finance only 77% of the net employer normal cost of $295,192. The state premium tax allocation of $202,316 is sufficient to finance only 3.1% of the unfunded actuarial accrued liability of $6,474,375.

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 5.50%, the funded ratio will be lower and the cash flow strain could be higher. If another significant market downtown 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 5.50%, then the funded ratio will *decrease*. Conversely, if the actual return on assets is *greater* than the assumed return of 5.50% then the funded ratio will *increase*.
- If salaries *increase* by more than assumed, the funded ratio could *decrease*. If salaries *decrease* by more than assumed, the funded ratio could *increase.*
- If active members retire *sooner* than expected, the funded ratio will generally *decrease.* If active members retire *later* than expected, the funded ratio will generally *increase*.
- If active members become disabled during the year, the funded ratio could *decrease*.
- If retired members die *later* than expected, the funded ratio will *decrease*. If retired members die *sooner* than expected, the funded ratio will *increase*.

- If the general inflation is *greater* than assumed, supplemental benefits will be greater than assumed and the funded ratio will *decrease*. Conversely, if general inflation is *lower* than assumed, the funded ratio will *increase*.

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

	No.	July 1, 2016	No.	July 1, 2017
Valuation Date		**July 1, 2016**		**July 1, 2017**
Valuation Interest Rate		5.00%		5.50%
Cost-of-Living Adjustment		2.75%		2.75%
Wage Inflation		3.75%		3.75%
Expected Payroll		$901,229		$933,350
Average Pay		$42,916		$44,445
Expected Benefit Payments		$531,588		$560,706
1. Actuarial Accrued Liability	No.		No.	
(a) Actives	21	$3,296,876	21	$2,807,212
(b) Retirees	13	$5,987,855	13	$5,575,560
(c) Survivors	2	$338,105	2	$315,701
(d) Disabled Members	4	$1,495,497	4	$1,410,620
(e) Deferred Vested Members	0	$0	1	$543,185
(f) Total	40	$11,118,333	41	$10,652,278
2. Present Value of Future Normal Costs		$5,258,775		$4,873,569
3. Present Value of Benefits (1(f) + 2)		$16,377,108		$15,525,847
4. Market Value of Assets		$3,849,800		$4,177,903
5. Unfunded Actuarial Accrued Liability (1(f) - 4)		$7,268,533		$6,474,375
6. Funded Ratio (4 / 1(f))		34.63%		39.22%
7. Net Employer Normal Cost				
(a) Normal Cost		$399,410		$372,045
(b) Administrative Expenses		$3,812		$3,579
(c) Gross Normal Cost (a + b)		$403,222		$375,624
(d) Employee Contribution Rate [a]		8.35%		8.62%
(e) Expected Employee Contributions		$75,291		$80,432
(f) Net Employer Normal Cost (c - e)		$327,931		$295,192
(% of Compensation)		36.39%		31.63%
		FYE 2018		**FYE 2019**
8. Estimated Minimum Employer Contribution [b]				
(a) Prior Year Alternative Contribution		$198,672		$212,579
(b) Increase in Alternative Contribution		7.00%		7.00%
(c) Current Year Alternative Contribution		$212,579		$227,460
(d) Additional Contribution		$0		$0
(e) Alternative Contribution (c + d)		$212,579		$227,460

[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.

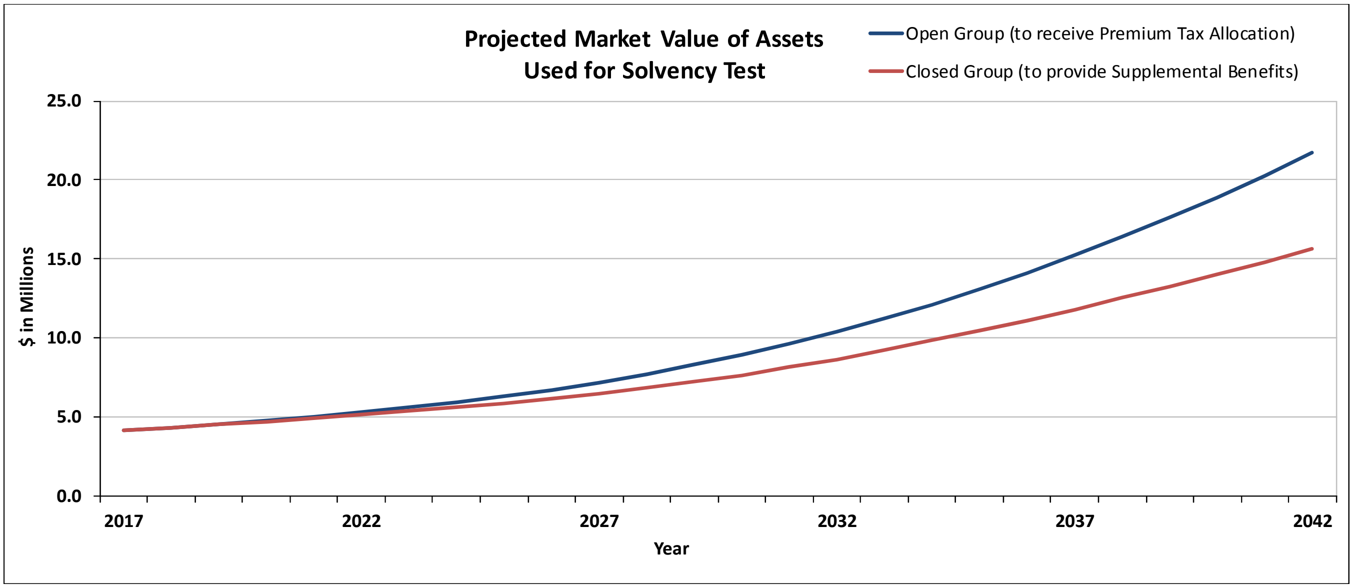
Schedule B: (Gain)/Loss Analysis

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

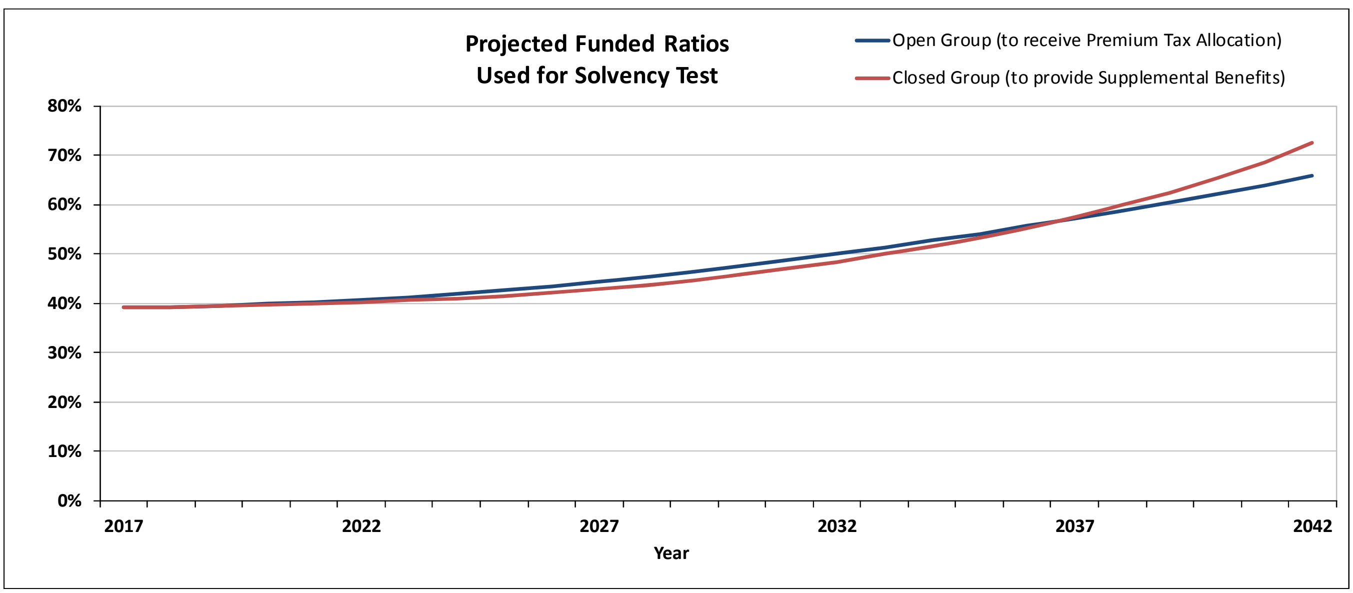
1.	(a) Actuarial Accrued Liability as of 7/1/2016	$11,118,333
	(b) Normal Cost due 7/1/2016	$399,410
	(c) Interest on (a) and (b) to 6/30/2017	$565,902
	(d) Benefit Payments with interest to 6/30/2017	$503,553
	(e) Effect of Assumption Changes	($761,192)
	(f) Expected Liability at 7/1/2017 [(a) + (b) + (c) - (d) + (e)]	$10,818,900
	(g) Actual Liability at 7/1/2017	$10,652,278
	(h) Liability (Gain)/Loss [(g) - (f)]	**($166,622)**
2.	(a) Market Value of Assets as of 7/1/2016	$3,849,800
	(b) Interest on (a) to 6/30/2017	$192,490
	(c) Contributions with interest to 6/30/2017	$472,548
	(d) Benefit Payments with interest to 6/30/2017	$503,553
	(e) Expected Assets at 6/30/2017 [(a) + (b) + (c) - (d)]	$4,011,285
	(f) Actual Assets at 7/1/2017	$4,177,903
	(g) Asset (Gain)/Loss [(e) - (f)]	**($166,618)**
3.	Total (Gain)/Loss [1(h) + 2(g)]	**($333,240)**

Graphs 1A and 1B: Solvency Projections

Graph 1A



Graph 1B



SECTION II

ACTUARIAL PROJECTIONS

ALTERNATIVE FUNDING POLICY

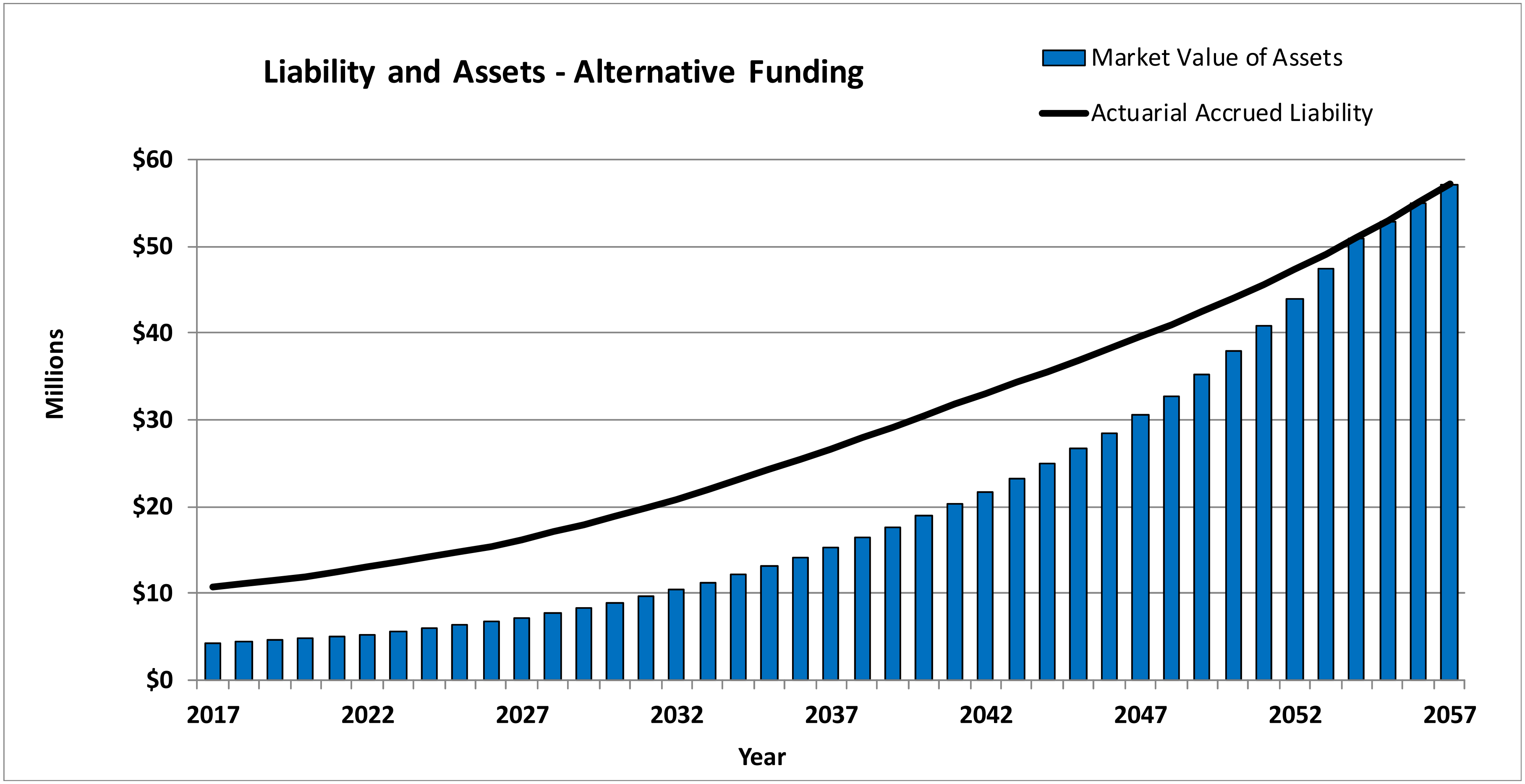
Alternative Funding on a Closed Group Basis, Table 1

Valuation Plan Year End 30-Jun	Number Active	Number Pay Status	Total Payroll	Total Assets: Assets (boy)	Benefit Payments	Expenses	Employer Contributions	Member Contributions	Premium Tax Allocation Contributions	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	21	20	$901,229	$3,849,800	$491,271	$180	$198,672	$80,332	$182,018	$358,532	$4,177,903	$10,652,278	$6,474,375	39%
2018	19	21	933,350	4,177,903	560,706	3,579	212,579	80,432	201,554	227,893	4,336,076	11,045,683	6,709,607	39%
2019	18	21	923,847	4,336,076	543,749	3,579	227,460	80,025	202,316	237,466	4,536,016	11,472,023	6,936,007	40%
2020	17	21	914,785	4,536,016	564,443	3,586	243,382	79,496	188,633	247,947	4,727,445	11,896,309	7,168,864	40%
2021	16	21	910,981	4,727,445	581,770	3,601	260,419	79,334	185,034	258,365	4,925,227	12,323,963	7,398,736	40%
2022	15	22	907,168	4,925,227	599,453	3,620	278,648	79,213	182,430	269,184	5,131,629	12,754,216	7,622,587	40%
2023	14	22	903,253	5,131,629	617,183	3,644	298,153	79,131	179,269	280,496	5,347,851	13,186,797	7,838,946	41%
2024	13	22	903,757	5,347,851	631,638	3,671	319,024	79,410	177,250	292,514	5,580,740	13,627,036	8,046,296	41%
2025	13	22	911,343	5,580,740	643,821	3,704	341,356	80,251	175,748	305,580	5,836,149	14,081,286	8,245,137	41%
2026	12	22	927,354	5,836,149	652,231	3,741	365,251	81,735	175,341	320,075	6,122,579	14,557,973	8,435,394	42%
2027	12	22	945,846	6,122,579	658,805	3,779	390,819	83,427	175,464	336,392	6,446,097	15,061,517	8,615,420	43%
2028	11	22	965,831	6,446,097	663,654	3,821	418,176	85,266	175,927	354,858	6,812,849	15,595,334	8,782,485	44%
2029	11	22	975,915	6,812,849	680,328	3,868	447,448	86,464	176,627	375,421	7,214,613	16,145,240	8,930,627	45%
2030	10	22	985,144	7,214,613	697,558	3,916	478,769	87,665	176,591	397,931	7,654,095	16,711,167	9,057,072	46%
2031	10	22	989,867	7,654,095	718,933	3,967	512,283	88,611	177,562	422,482	8,132,133	17,287,908	9,155,775	47%
2032	9	22	990,774	8,132,133	742,375	4,017	548,143	89,316	177,599	449,130	8,649,929	17,872,157	9,222,228	48%
2033	9	22	993,687	8,649,929	760,110	4,067	586,513	89,865	178,710	478,213	9,219,054	18,470,542	9,251,488	50%
2034	8	22	962,186	9,219,054	800,354	4,117	627,569	87,483	178,997	509,478	9,818,110	19,045,674	9,227,564	52%
2035	7	23	908,324	9,818,110	852,208	4,169	671,499	83,093	177,969	542,063	10,436,357	19,573,761	9,137,404	53%
2036	6	23	881,812	10,436,357	880,916	4,221	718,504	80,938	176,566	576,465	11,103,693	20,087,758	8,984,065	55%
2037	5	23	834,526	11,103,693	925,589	4,274	768,799	77,101	177,748	613,248	11,810,726	20,564,005	8,753,279	57%
2038	5	24	735,886	11,810,726	1,004,879	4,327	822,615	68,480	176,838	651,183	12,520,636	20,943,634	8,422,998	60%
2039	4	24	641,989	12,520,636	1,079,504	4,376	880,198	59,974	175,927	689,509	13,242,364	21,228,155	7,985,791	62%
2040	3	24	558,991	13,242,364	1,146,898	4,421	941,812	52,391	175,939	728,840	13,990,027	21,425,071	7,435,044	65%
2041	3	24	482,517	13,990,027	1,207,731	4,462	1,007,739	45,351	176,070	769,912	14,776,905	21,539,887	6,762,982	69%
2042	2	24	392,772	14,776,905	1,279,222	4,499	1,078,281	36,983	176,629	812,952	15,598,029	21,553,378	5,955,349	72%
2043	1	24	310,743	15,598,029	1,339,310	4,530	1,153,761	29,290	176,507	858,318	16,472,065	21,474,784	5,002,719	77%
2044	1	24	233,225	16,472,065	1,394,854	4,556	1,234,524	22,017	177,049	906,891	17,413,136	21,306,646	3,893,510	82%
2045	1	24	156,891	17,413,136	1,446,479	4,577	1,320,941	14,827	177,438	959,408	18,434,695	21,049,143	2,614,448	88%
2046	0	24	112,352	18,434,695	1,467,248	4,593	1,413,407	10,622	178,087	1,017,443	19,582,413	20,740,064	1,157,651	94%
2047	0	23	78,259	19,582,413	1,478,661	4,603	1,034,509	7,414	178,908	1,069,912	20,389,892	20,389,892	0	100%
2048	0	23	51,973	20,389,892	1,482,677	4,608	17,489	4,937	0	1,081,700	20,006,733	20,006,733	0	100%
2049	0	22	34,274	20,006,733	1,479,038	4,608	12,968	3,256	0	1,060,556	19,599,867	19,599,867	0	100%
2050	0	21	22,420	19,599,867	1,469,932	4,604	10,012	2,130	0	1,038,315	19,175,788	19,175,788	0	100%
2051	0	21	13,966	19,175,788	1,457,250	4,595	7,945	1,327	0	1,015,257	18,738,472	18,738,472	0	100%
2052	0	20	7,597	18,738,472	1,442,150	4,581	6,363	722	0	991,556	18,290,381	18,290,381	0	100%
2053	0	20	3,821	18,290,381	1,424,380	4,563	5,429	363	0	967,358	17,834,588	17,834,588	0	100%
2054	0	19	1,550	17,834,588	1,404,872	4,542	4,893	147	0	942,799	17,373,013	17,373,013	0	100%
2055	0	18	0	17,373,013	1,384,231	4,517	4,516	0	0	917,959	16,906,740	16,906,740	0	100%
2056	0	18	0	16,906,740	1,362,013	4,489	4,489	0	0	892,917	16,437,644	16,437,644	0	100%
2057	0	17	0	16,437,644	1,339,412	4,458	4,458	0	0	867,730	15,965,962	15,965,962	0	100%

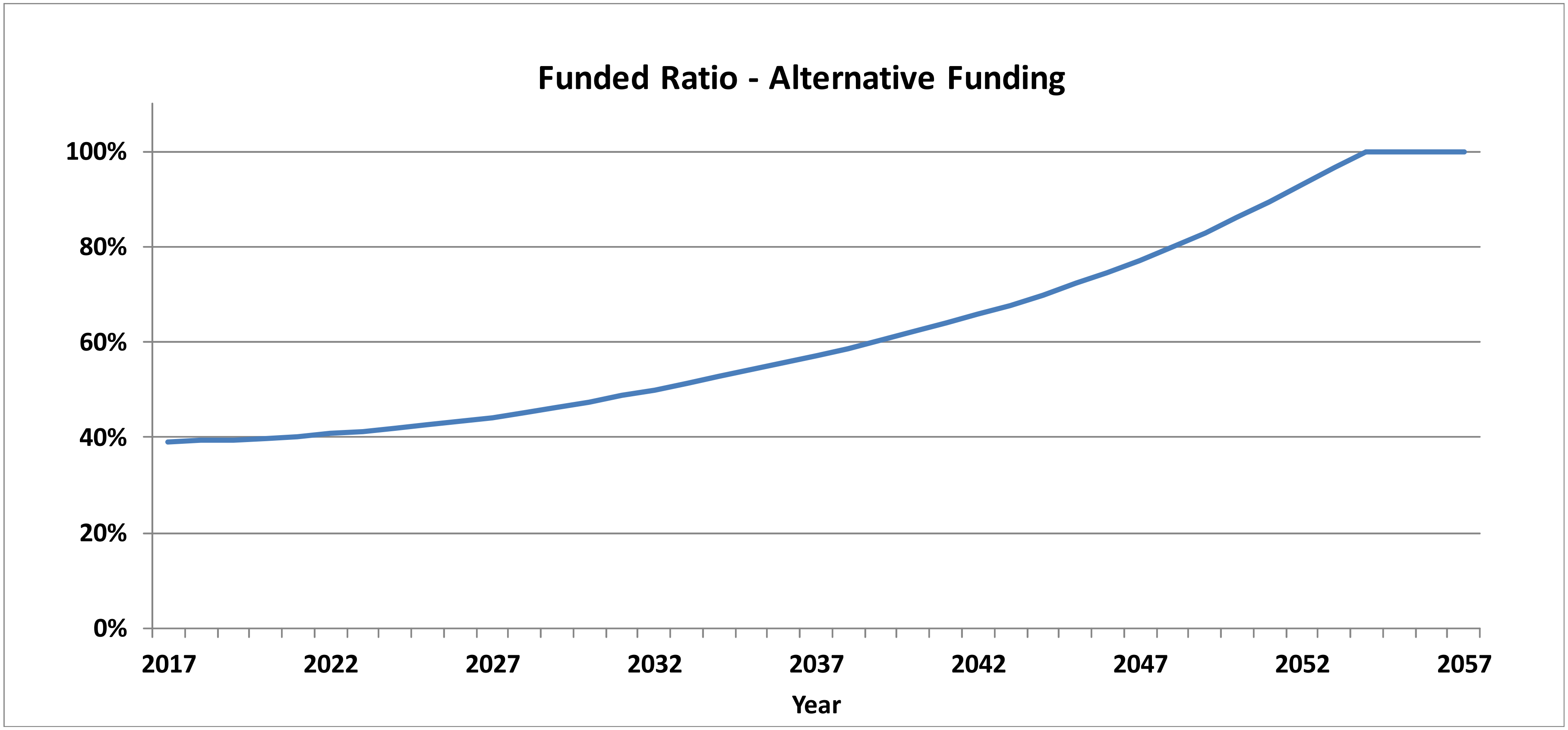
Alternative Funding on an Open Group Basis, Table 2

Valuation Plan Year End 30-Jun	Number Active	Number Pay Status	Total Payroll	Total Assets: Assets (boy)	Benefit Payments	Expenses	Employer Contributions	Member Contributions	Premium Tax Allocation Contributions	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	21	20	$901,229	$3,849,800	$491,271	$180	$198,672	$80,332	$182,018	$358,532	$4,177,903	$10,652,278	$6,474,375	39%
2018	21	21	933,350	4,177,903	560,706	3,579	212,579	80,432	201,554	227,893	4,336,076	11,045,683	6,709,607	39%
2019	21	21	982,375	4,336,076	543,749	3,730	227,460	85,974	202,316	237,623	4,541,971	11,494,872	6,952,901	40%
2020	21	21	1,031,416	4,541,971	564,690	3,866	243,382	90,994	210,867	249,176	4,767,833	11,965,627	7,197,794	40%
2021	21	21	1,083,573	4,767,833	582,658	3,996	260,419	96,129	216,013	261,848	5,015,588	12,463,626	7,448,038	40%
2022	21	22	1,132,447	5,015,588	601,273	4,118	278,648	101,000	220,896	275,726	5,286,467	12,987,946	7,701,479	41%
2023	21	22	1,190,436	5,286,467	620,141	4,263	298,153	106,889	226,540	290,950	5,584,595	13,543,109	7,958,514	41%
2024	21	22	1,250,045	5,584,595	635,930	4,397	319,024	112,822	232,029	307,791	5,915,934	14,134,724	8,218,790	42%
2025	21	22	1,316,973	5,915,934	649,682	4,533	341,356	119,371	237,614	326,573	6,286,633	14,770,693	8,484,060	43%
2026	21	22	1,386,894	6,286,633	659,853	4,656	365,251	126,027	242,788	347,652	6,703,843	15,458,815	8,754,972	43%
2027	21	22	1,458,335	6,703,843	668,351	4,775	390,819	132,829	248,018	371,385	7,173,767	16,204,644	9,030,877	44%
2028	21	22	1,532,184	7,173,767	675,277	4,897	418,176	139,888	253,495	398,122	7,703,274	17,013,570	9,310,296	45%
2029	21	22	1,597,919	7,703,274	694,148	5,024	447,448	146,505	259,292	427,861	8,285,207	17,873,852	9,588,645	46%
2030	21	22	1,677,143	8,285,207	713,675	5,183	478,769	154,591	266,007	460,584	8,926,299	18,792,874	9,866,575	47%
2031	21	22	1,744,359	8,926,299	737,532	5,319	512,283	161,582	272,068	496,456	9,625,837	19,764,718	10,138,881	49%
2032	21	22	1,824,830	9,625,837	763,609	5,490	548,143	170,113	279,457	535,623	10,390,075	20,794,887	10,404,812	50%
2033	21	22	1,900,376	10,390,075	784,262	5,636	586,513	177,707	286,329	578,526	11,229,252	21,889,823	10,660,571	51%
2034	21	23	1,954,429	11,229,252	827,701	5,809	627,569	183,736	294,128	624,986	12,126,162	23,019,843	10,893,681	53%
2035	21	23	2,019,254	12,126,162	882,979	6,047	671,499	191,066	304,757	674,489	13,078,947	24,177,042	11,098,095	54%
2036	21	23	2,121,126	13,078,947	915,543	6,291	718,504	201,411	315,699	727,855	14,120,583	25,401,686	11,281,103	56%
2037	21	24	2,173,922	14,120,583	964,777	6,462	768,799	206,848	324,174	785,548	15,234,713	26,662,965	11,428,252	57%
2038	21	24	2,217,904	15,234,713	1,049,187	6,731	822,615	211,461	336,605	846,449	16,395,925	27,922,068	11,526,143	59%
2039	21	25	2,269,707	16,395,925	1,129,550	7,005	880,198	216,430	349,365	910,172	17,615,535	29,180,472	11,564,937	60%
2040	21	25	2,329,019	17,615,535	1,208,384	7,272	941,812	222,166	362,090	977,276	18,903,224	30,444,137	11,540,913	62%
2041	21	26	2,396,631	18,903,224	1,285,540	7,540	1,007,739	228,452	374,978	1,048,307	20,269,620	31,720,395	11,450,775	64%
2042	21	26	2,449,790	20,269,620	1,377,096	7,805	1,078,281	233,295	387,961	1,123,366	21,707,621	32,989,727	11,282,106	66%
2043	21	26	2,537,835	21,707,621	1,461,980	8,128	1,153,761	241,306	403,103	1,202,820	23,238,503	34,271,679	11,033,176	68%
2044	21	27	2,603,043	23,238,503	1,547,623	8,394	1,234,524	246,757	416,279	1,287,384	24,867,430	35,555,720	10,688,290	70%
2045	21	27	2,685,567	24,867,430	1,637,180	8,705	1,320,941	254,456	431,107	1,377,493	26,605,543	36,844,775	10,239,232	72%
2046	21	27	2,783,520	26,605,543	1,704,390	8,978	1,413,407	263,319	444,610	1,474,374	28,487,885	38,169,919	9,682,034	75%
2047	21	27	2,885,135	28,487,885	1,767,732	9,242	1,512,345	272,513	457,825	1,579,469	30,533,063	39,537,602	9,004,539	77%
2048	21	27	2,992,564	30,533,063	1,830,120	9,508	1,618,209	282,525	471,247	1,693,762	32,759,179	40,953,091	8,193,912	80%
2049	21	27	3,108,018	32,759,179	1,891,739	9,773	1,731,484	293,432	484,680	1,818,253	35,185,517	42,425,848	7,240,331	83%
2050	21	27	3,230,188	35,185,517	1,952,061	10,037	1,852,688	305,119	498,208	1,954,031	37,833,465	43,963,741	6,130,276	86%
2051	21	27	3,359,606	37,833,465	2,012,217	10,303	1,982,376	317,509	511,919	2,102,255	40,725,003	45,574,803	4,849,800	89%
2052	21	27	3,494,369	40,725,003	2,072,027	10,572	2,121,142	330,471	525,815	2,264,154	43,883,986	47,264,713	3,380,727	93%
2053	21	27	3,638,387	43,883,986	2,131,973	10,848	2,269,622	344,205	540,121	2,441,053	47,336,166	49,042,332	1,706,166	97%
2054	21	27	3,785,577	47,336,166	2,191,935	11,124	2,238,623	357,801	554,538	2,629,207	50,913,275	50,913,275	0	100%
2055	21	27	3,937,476	50,913,275	2,252,782	11,416	1,080,094	372,145	0	2,778,201	52,879,517	52,879,517	0	100%
2056	21	27	4,098,053	52,879,517	2,317,591	11,721	1,121,978	387,478	0	2,886,129	54,945,791	54,945,791	0	100%
2057	21	27	4,263,992	54,945,791	2,387,134	12,034	1,168,747	402,683	0	2,999,561	57,117,614	57,117,614	0	100%

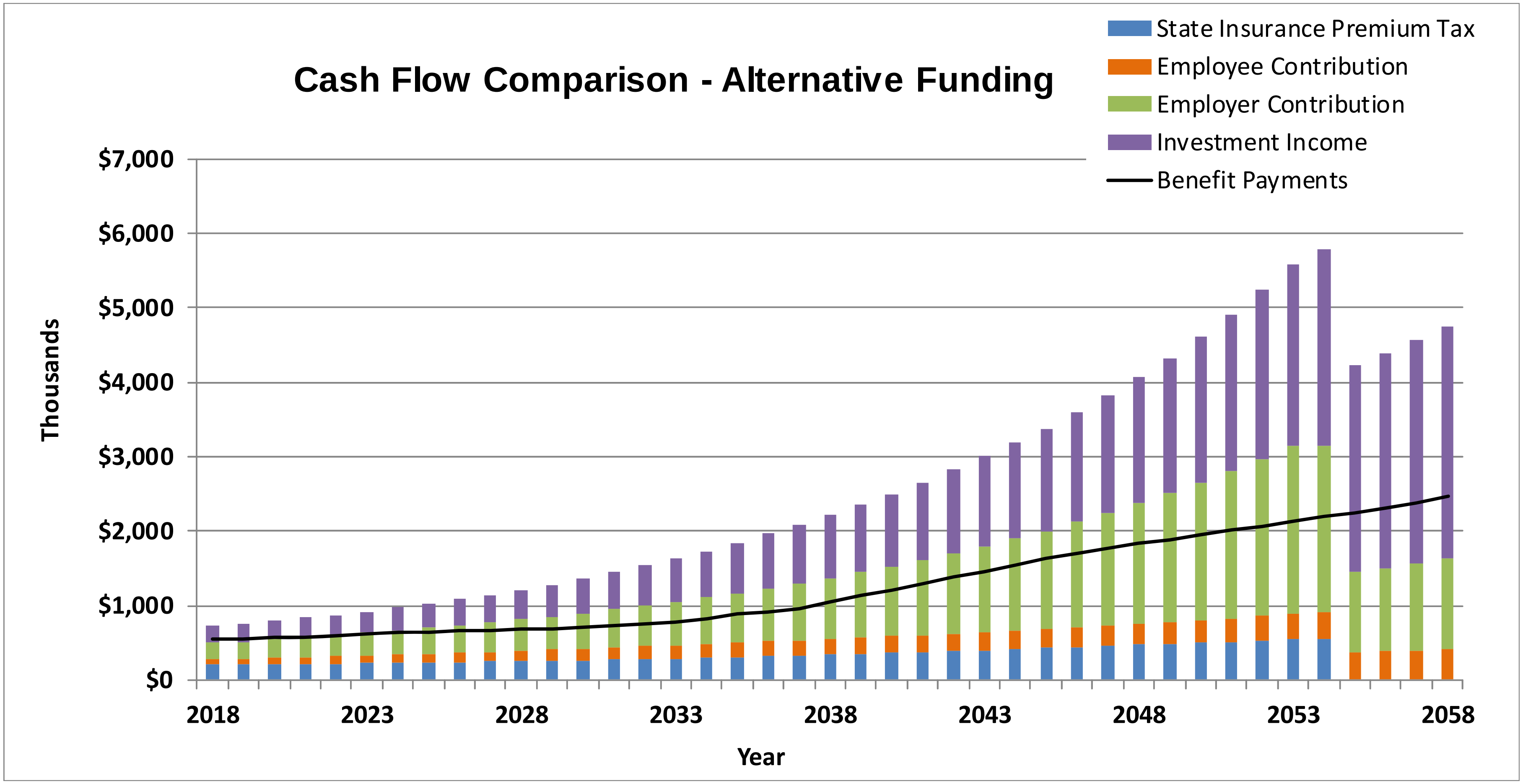
Open Group Actuarial Projections – Alternative Funding, Graph 2



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

<u>Funding Policy Choices</u>

West Virginia Code §8-22-20 allows a municipality's governing body (City Council) the choice of changing from the Alternative funding policy to <u>either</u> 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 in excess of 1.5% of pay, 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.

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	$227,460	23.2%	NA	NA
Optional	$513,358	55.6%	$6,145	10.5%
Conservation	$278,845	30.2%	$6,145	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 $212,579 in fiscal year end 2018 to $2,269,622 in fiscal year end 2053. In fiscal year end 2054, the plan is projected to be 100% 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 $227,460 to $513,358. However, over the 40-year projection period, total employer contributions to both the local plan and the statewide plan are projected to decrease from $519,503 in fiscal year end 2019 to $333,120 in fiscal year end 2048, and the Plan is projected to be fully funded in 2049.

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 $227,460 to $278,845. During the 35-year projection period, total employer contributions to both the local plan and the statewide plan are projected to increase from $284,990 in fiscal year end 2019 to $1,298,767 in fiscal year end 2046 and the Plan is projected to be fully funded in 2047.

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

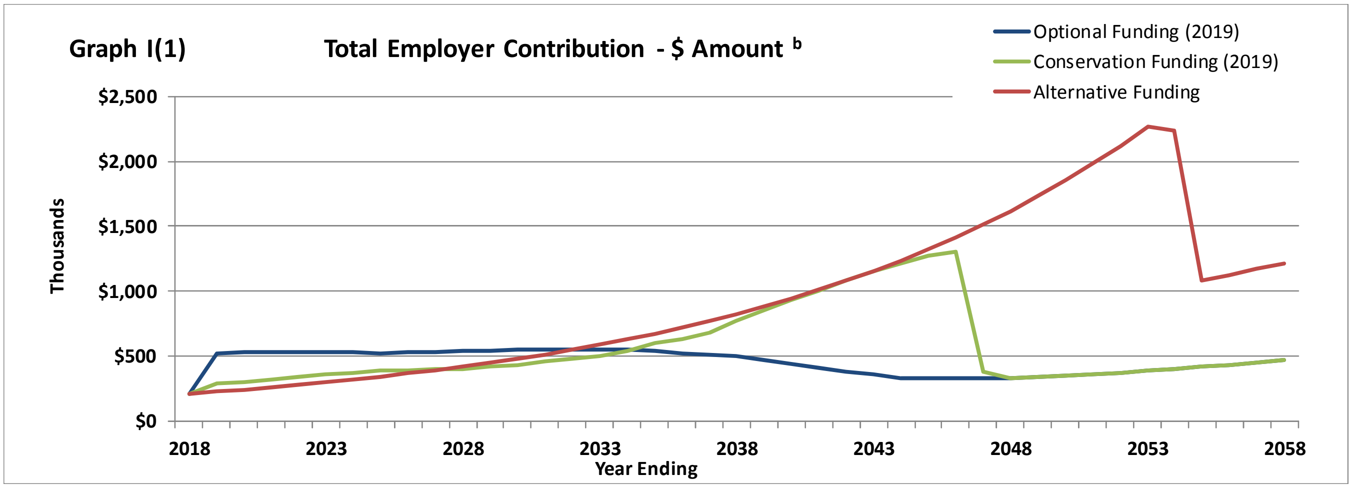
Under Scenario II, the plan sponsor is assumed to make contributions under the Alternative funding policy in future years, until the first year that either the Optional or Conservation policy produces a lower contribution. Under this assumption, the employer contributions under the Optional funding policy are not projected to be lower than contributions under the Alternative funding policy. In plan year end 2024, the employer contributions under the Conservation funding policy of $318,781 are projected to be lower than contributions under the Alternative funding policy of $319,024.

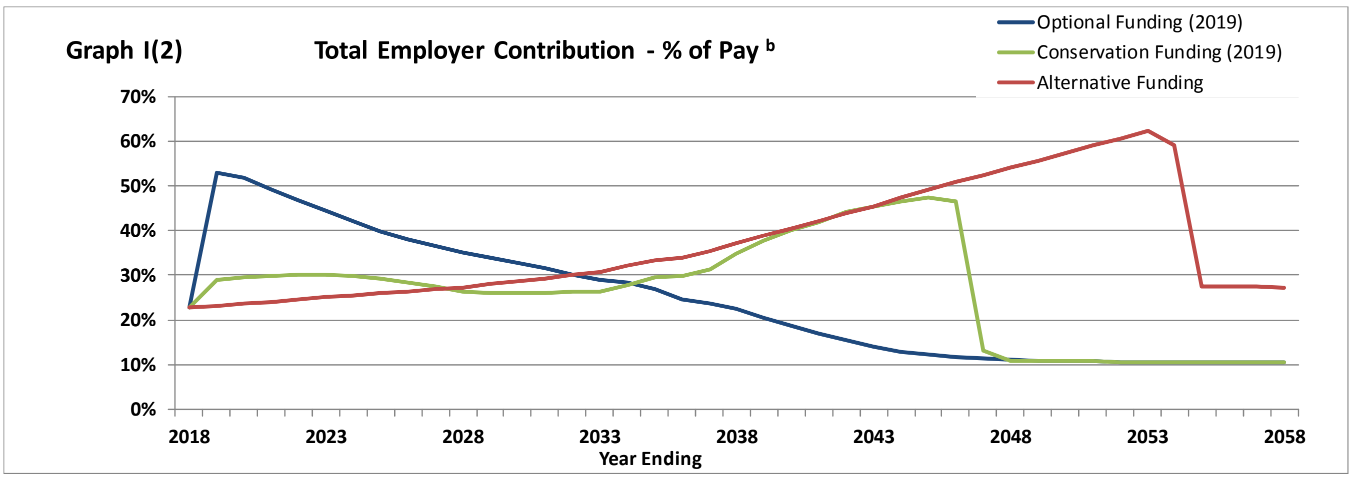
Graphs II(1), II(2), and III(3) show the projected contribution pattern and funded ratio. Based on these projections, the Conservation funding policy has lower projected employer contributions than the Alternative funding policy beginning in 2024. After 2024, the funded ratio under the Conservation funding 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.

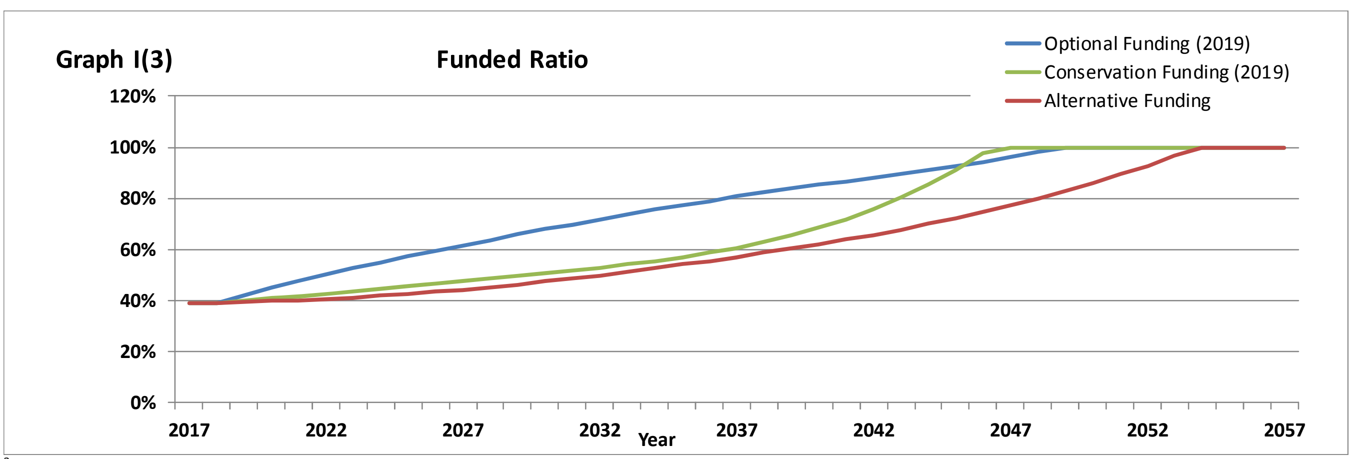
The details of the Scenario II projections can be found in the Appendix.

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

Scenario I





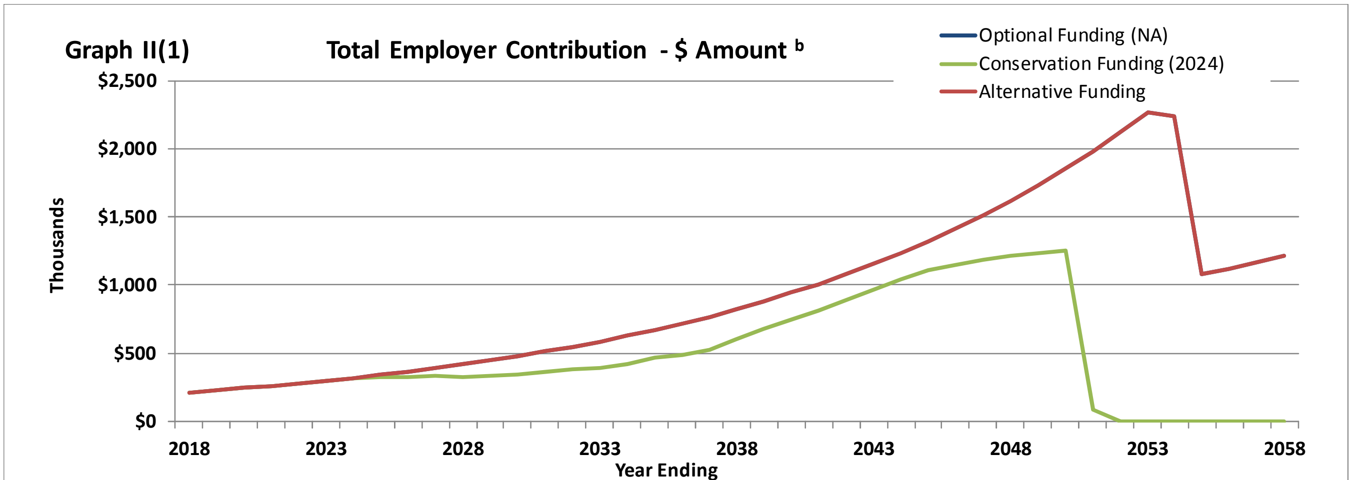


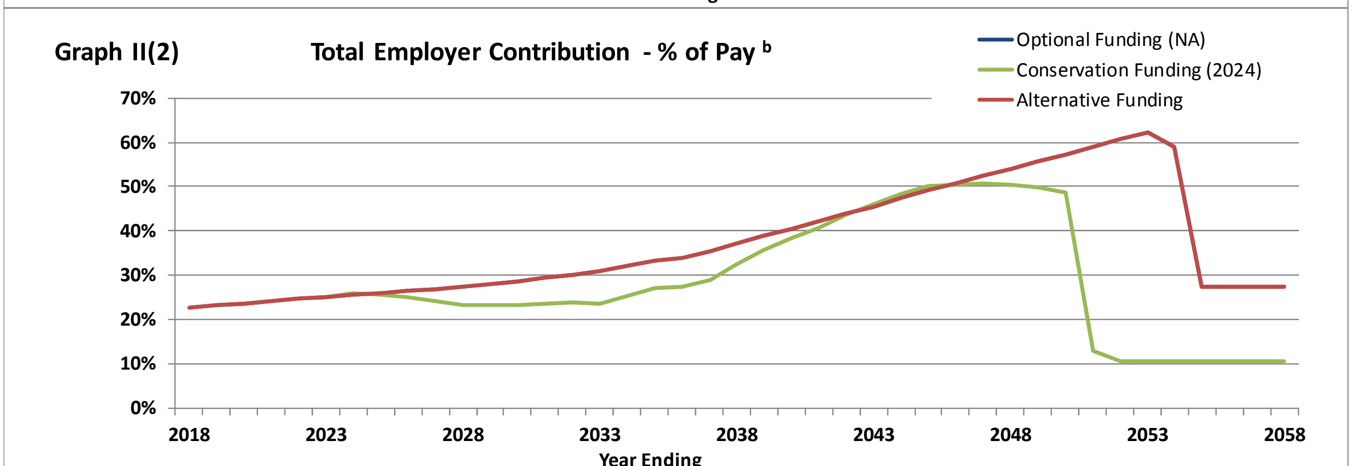
[a] *Assumes Sponsor elects either the Optional funding policy or Conservation funding policy in fiscal year end June 30, 2019, and makes the newly elected contribution in fiscal year end June 30, 2019.*

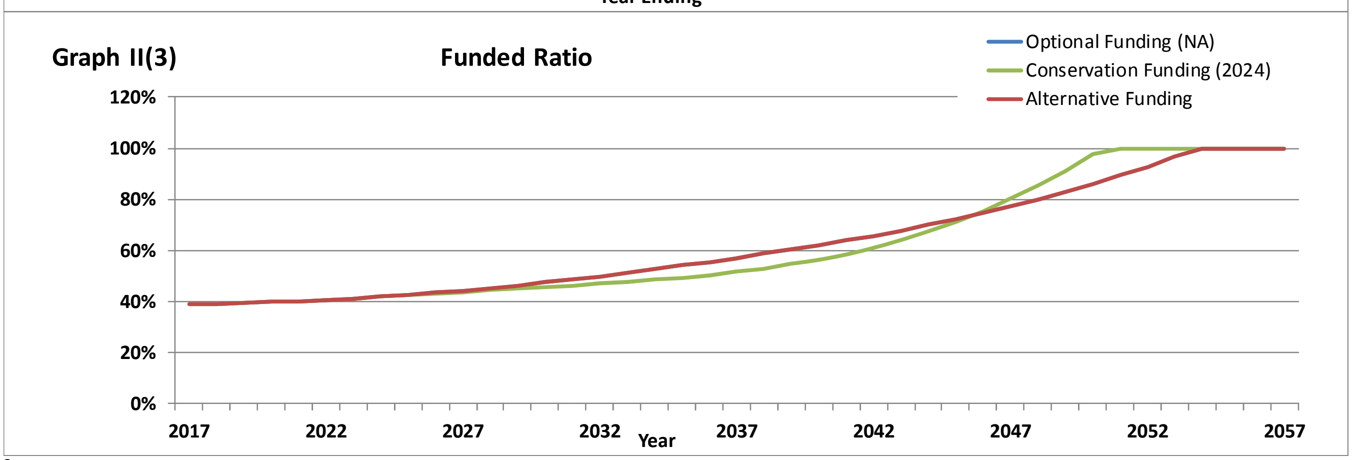
[b] *Based on total pay and includes contributions for future members projected to participate in the statewide plan.*

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	5.00%	5.50%
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	$3,849,800	$4,177,903
2. Actuarial Accrued Liability	$11,118,333	$10,652,278
3. Unfunded Actuarial Accrued Liability (2 - 1)	$7,268,533	$6,474,375
4. Funded Ratio (1/2)	35%	39%
5. Expected Payroll	$901,229	$933,350
6. UAAL as Percentage of Covered Payroll (3/5)	807%	694%
Schedule of Employer Contributions [c]	**FYE 2017**	**FYE 2018**
1. Actuarially Determined Contribution		
(a) Employer Normal Cost	$327,931	$295,192
(b) Amortization of Unfunded Actuarial Accrued Liability	$346,384	$336,285
(c) Actuarially Determined Contribution (ADC) (a + b)	$674,315	$631,477
2. Employer Contribution [b]	$198,672	$212,579
3. Premium Tax Allocation	$182,018	$201,554
4. Percentage of ADC Contributed [(2 + 3)/1(c)]	56%	66%

[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	$3,991,089	$3,849,800
Adjustment to Market Value of Assets at Beginning of Year	$0	$0
Market Value of Assets Beginning of Year	$3,991,089	$3,849,800
1. Revenue During Fiscal Year		
(a) Employee Contribution	$76,114	$80,332
(b) Governmental Contribution		
(i) From Local Government	$185,674	$198,672
(ii) From State Government	$183,874	$182,018
(iii) Reallocation from State Government	$0	$0
(iv) Total	$369,548	$380,690
(c) Earnings on Investments		
(i) Net Appreciation/(Depreciation)	($185,679)	$285,130
(ii) Bond Interest	$24,501	$23,879
(iii) Dividends	$58,307	$45,602
(iv) Net Realized Gain (Loss) on Sale/Exchange	$45,750	$27,600
(v) Other	$0	$0
(vi) Less Investment Expense	($25,231)	($23,679)
(vii) Total	($82,352)	$358,532
(d) Other Revenue	$5,755	$0
(e) Receivable Investment Income/(Expense)	$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))	$369,065	$819,554
2. Expenditures During Fiscal Year		
(a) Benefits Paid	$487,446	$461,161
(b) Withdrawals	$22,728	$30,110
(c) Administrative Expenses	$180	$180
(d) Payable Benefits and Withdrawals	$0	$0
(e) Payable Administrative Expenses	$0	$0
(f) Total Expenditures (sum of (a) through (e))	$510,354	$491,451
B. Market Value of Assets End of Year [A + 1(g) - 2(f)]	$3,849,800	$4,177,903
C. Approximate Return on Assets	(1.98)%	9.35%

[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	$449,036	12%	$431,988	10%
2. Government Securities				
(a) US Treasury Bills, Notes and Bonds	$0		$270,592	
(b) US State and Local Governmental Debt Securities	$0		$0	
(c) Foreign Governmental Debt Securities	$0		$0	
(d) Other	$0		$0	
(e) Total Government Securities (sum of (a) through (d))	$0	0%	$270,592	7%
3. Corporate Fixed Income				
(a) US Bonds	$347,010		$415,223	
(b) US Mortgage or other Asset Backed Securities	$0		$0	
(c) US Mutual Fund Shares (Bonds)	$379,071		$286,541	
(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))	$726,081	19%	$701,764	17%
4. Corporate Equity				
(a) US Equity	$413,769		$150,407	
(b) US Mutual Fund Shares (Equity)	$0		$0	
(c) US Exchange Traded Funds (Equity)	$950,025		$1,089,775	
(d) International Equity	$754,691		$876,981	
(e) International Mutual Fund Shares (Equity)	$0		$0	
(f) International Exchange Traded Funds (Equity)	$0		$11,528	
(g) Total Corporate Equity (sum of (a) through (f))	$2,118,485	55%	$2,128,691	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	$556,198		$644,868	
(e) Total Alternative Investments (sum of (a) through (d))	$556,198	14%	$644,868	15%
6. Other	$0	0%	$0	0%
7. Receivable Contributions				
(a) From Employee Contributions	$0		$0	
(b) From Local Government	$0		$0	
(c) From State Government	$0		$0	
(d) Total Receivable Contributions (sum of (a) through (c))	$0	0%	$0	0%
8. Accruals				
(a) Receivable (other than State and Local Contributions)	$0		$0	
(b) Less Payable	$0		$0	
(c) Total	$0	0%	$0	0%
Market Value of Assets End of Year [sum of (1) through (8)]	**$3,849,800**		**$4,177,903**	

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:	**21**	**13**	**4**	**0**	**2**	**40**
New Actives:	2					**2**
Returned to Actives Status:						**0**
Data Corrections/Other Changes:						**0**
Vested Terminations:	(1)			1		**0**
Non-Vested Terminations:	(1)					**(1)**
Disabled:						**0**
Retirements:						**0**
Deaths with Beneficiary:						**0**
Deaths w/o Beneficiary:						**0**
Expired Annuity or Stop Payment:						**0**
Net Changes:	0	0	0	1	0	**1**
Total Participants June 30, 2017:	**21**	**13**	**4**	**1**	**2**	**41**

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

Attained Age	Less than 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 35	Totals	Valuation Payroll[a]
				Years of Service to Valuation Date							
Under 20											$ 0
20-24		2								2	$ 95,541
25-29	1	6	1							8	$ 337,111
30-34	1	1	1	1						4	$ 180,879
35-39		1	1	1						3	$ 146,768
40-44		1								1	$ 32,658
45-49					1					1	$ 35,984
50-54						2				2	$ 107,978
55-59											$ 0
60-64											$ 0
65-69											$ 0
Over 70											$ 0
Totals	2	11	3	2	1	2	0	0	0	21	$ 936,919

Averages

Age:	33.2	years
Service:	6.5	years
Annual Pay:	$44,615	[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	21	21
Total Annual Pay	$907,476	$936,919
Average Age	33.3	33.2
Average Service	7.1	6.5

Inactive Participants	July 1, 2016		July 1, 2017[a]	
Type	No.	Annual Benefit	No.	Annual Benefit
Retirees	13	$346,670	13	$349,617
Survivors	2	$24,197	2	$24,506
Disabled Members	4	$90,299	4	$91,374
Deferred Vested Members	0	$0	1	$28,026

[a]Data provided includes 2 non-vested members with accumulated contributions balances of $45,937.

SECTION VI

ACTUARIAL ASSUMPTIONS AND METHODS

Discount Rate

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

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

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

As of June 30, 2017	
Assets	$4,177,903
Liabilities using a 5.50% discount rate	$10,652,278
Funded Ratio	39%
Expected Benefit Payments	$560,706
Liquidity Ratio	7.45
Equity Exposure	51%
Projected Funded Ratio after 15 years	50%

Discount Rate	5.50%

The premium tax allocation is projected using the following methodology:

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

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

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

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

(5) For the plan year ending June 30, 2018, all Pension and Relief Funds reported a total of 1,717 eligible active members and 2,165 eligible retired members. The City of Princeton Policemen's Pension and Relief Fund reported 20 eligible active members and 20 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 $202,316 for the fiscal year ending June 30, 2019.

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

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

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

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

Administrative Expenses	Plan year 2018 administrative expenses assumed to be equal to 15% of all reported 2017 expenses. Future expenses assumed to increase by the general inflation assumption.
Refunds Paid	Assumes non-vested inactive members as of July 1, 2017, with accumulated member contribution balances will receive a refund of their contributions during plan year end June 30, 2018.
Data Adjustments and Assumptions	None
Child Beneficiaries	Future survivor widow benefits are loaded by 12% to estimate impact of benefits provided to survivor children. The load assumes 90% of members are married with two children at time of death, and benefits for each child are paid for approximately 8 years.
General Projection Methodology	Open group projections assume: (i) Salaries will increase and members will decrement as specified in the actuarial assumption section. (ii) Active members who retire, become disabled, die or terminate during the year are replaced with new entrants such that the number of active members remains stable during the 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. Closed group projections are the same as the open group projections except active members who retire, become disabled, die, or terminate are not replaced with new entrants.
Decrement Timing	Mid-Year

SECTION VII

SUMMARY OF PRINCIPAL PLAN PROVISIONS

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

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

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

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

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

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

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

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

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

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

Contributions — Participating employees contribute 7.0% of compensation. Participating employees hired on or after January 1, 2010 contribute 9.5% of 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 Year End 30-Jun	Number Active	Pay Status	Total Assets: Assets (boy)	Benefit Payments	Expenses	Employer Contribs.	Member Contribs.	Premium Tax Allocation Contribs.	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	21	20	$3,849,800	$491,271	$180	$198,672	$80,332	$182,018	$358,532	$4,177,903	$10,652,278	$6,474,375	39%
2018	19	21	4,177,903	560,706	3,579	212,579	80,432	201,554	227,893	4,336,076	11,045,683	6,709,607	39%
2019	18	21	4,336,076	543,749	3,579	513,358	80,025	202,316	245,223	4,829,671	11,472,023	6,642,352	42%
2020	17	21	4,829,671	564,443	3,586	521,040	79,496	210,867	272,235	5,345,280	11,896,309	6,551,029	45%
2021	16	21	5,345,280	581,770	3,601	513,237	79,334	216,013	300,047	5,868,540	12,323,963	6,455,423	48%
2022	15	22	5,868,540	599,453	3,620	506,287	79,213	220,896	328,286	6,400,149	12,754,216	6,354,067	50%
2023	14	22	6,400,149	617,183	3,644	498,038	79,131	226,540	356,970	6,940,001	13,186,797	6,246,796	53%
2024	13	22	6,940,001	631,638	3,671	489,392	79,410	232,029	386,191	7,491,714	13,627,036	6,135,322	55%
2025	13	22	7,491,714	643,821	3,704	482,188	80,251	237,614	416,182	8,060,424	14,081,286	6,020,862	57%
2026	12	22	8,060,424	652,231	3,741	478,165	81,735	242,788	447,304	8,654,445	14,557,973	5,903,528	59%
2027	12	22	8,654,445	658,805	3,779	477,584	83,427	248,018	479,967	9,280,857	15,061,517	5,780,660	62%
2028	11	22	9,280,857	663,654	3,821	477,885	85,266	253,495	514,494	9,944,522	15,595,334	5,650,812	64%
2029	11	22	9,944,522	680,328	3,868	478,271	86,464	259,292	550,743	10,635,096	16,145,240	5,510,144	66%
2030	10	22	10,635,096	697,558	3,916	474,508	87,665	266,007	588,368	11,350,170	16,711,167	5,360,997	68%
2031	10	22	11,350,170	718,933	3,967	471,051	88,611	272,068	627,212	12,086,212	17,287,908	5,201,696	70%
2032	9	22	12,086,212	742,375	4,017	464,510	89,316	279,457	667,099	12,840,202	17,872,157	5,031,955	72%
2033	9	22	12,840,202	760,110	4,067	456,940	89,865	286,329	708,082	13,617,241	18,470,542	4,853,301	74%
2034	8	22	13,617,241	800,354	4,117	448,765	87,483	294,128	749,651	14,392,797	19,045,674	4,652,877	76%
2035	7	23	14,392,797	852,208	4,169	426,162	83,093	304,757	790,454	15,140,886	19,573,761	4,432,875	77%
2036	6	23	15,140,886	880,916	4,221	393,724	80,938	315,699	830,177	15,876,287	20,087,758	4,211,471	79%
2037	5	23	15,876,287	925,589	4,274	371,952	77,101	324,174	868,946	16,588,597	20,564,005	3,975,408	81%
2038	5	24	16,588,597	1,004,879	4,327	342,399	68,480	336,605	905,272	17,232,147	20,943,634	3,711,487	82%
2039	4	24	17,232,147	1,079,504	4,376	296,064	59,974	349,365	937,499	17,791,169	21,228,155	3,436,986	84%
2040	3	24	17,791,169	1,146,898	4,421	249,655	52,391	362,090	965,296	18,269,282	21,425,071	3,155,789	85%
2041	3	24	18,269,282	1,207,731	4,462	206,940	45,351	374,978	988,940	18,673,297	21,539,887	2,866,590	87%
2042	2	24	18,673,297	1,279,222	4,499	167,263	36,983	387,961	1,008,269	18,990,052	21,553,378	2,563,326	88%
2043	1	24	18,990,052	1,339,310	4,530	123,211	29,290	403,103	1,023,067	19,224,883	21,474,784	2,249,901	90%
2044	1	24	19,224,883	1,394,854	4,556	83,920	22,017	416,279	1,033,569	19,381,258	21,306,646	1,925,388	91%
2045	1	24	19,381,258	1,446,479	4,577	63,782	14,827	431,107	1,040,429	19,480,348	21,049,143	1,568,795	93%
2046	0	24	19,480,348	1,467,248	4,593	44,602	10,622	444,610	1,045,047	19,553,388	20,740,064	1,186,676	94%
2047	0	23	19,553,388	1,478,661	4,603	33,185	7,414	457,825	1,048,715	19,617,263	20,389,892	772,629	96%
2048	0	23	19,617,263	1,482,677	4,608	24,358	4,937	471,247	1,052,178	19,682,698	20,006,733	324,035	98%
2049	0	22	19,682,698	1,479,038	4,608	17,496	3,256	328,299	1,051,764	19,599,867	19,599,867	0	100%
2050	0	21	19,599,867	1,469,932	4,604	10,012	2,130	0	1,038,315	19,175,788	19,175,788	0	100%
2051	0	21	19,175,788	1,457,250	4,595	7,945	1,327	0	1,015,257	18,738,473	18,738,472	0	100%
2052	0	20	18,738,473	1,442,150	4,581	6,363	722	0	991,556	18,290,382	18,290,381	0	100%
2053	0	20	18,290,382	1,424,380	4,563	5,429	363	0	967,358	17,834,589	17,834,588	0	100%
2054	0	19	17,834,589	1,404,872	4,542	4,893	147	0	942,799	17,373,014	17,373,013	0	100%
2055	0	18	17,373,014	1,384,231	4,517	4,516	0	0	917,959	16,906,741	16,906,740	0	100%
2056	0	18	16,906,741	1,362,013	4,489	4,489	0	0	892,917	16,437,645	16,437,644	0	100%
2057	0	17	16,437,645	1,339,412	4,458	4,458	0	0	867,730	15,965,962	15,965,962	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	$933,350	$0	$933,350	$80,432	$372,045	$291,613	$420,482	$202,316	$218,166	$3,579	$513,358	$0
2019	923,847	58,528	982,375	80,025	367,432	287,407	440,922	210,867	230,055	3,579	521,040	6,145
2020	914,785	116,631	1,031,416	79,496	363,133	283,637	442,026	216,013	226,013	3,586	513,237	12,246
2021	910,981	172,592	1,083,573	79,334	361,068	281,734	441,849	220,896	220,953	3,601	506,287	18,122
2022	907,168	225,279	1,132,447	79,213	358,464	279,251	441,707	226,540	215,167	3,620	498,038	23,654
2023	903,253	287,183	1,190,436	79,131	355,390	276,259	441,518	232,029	209,489	3,644	489,392	30,154
2024	903,757	346,288	1,250,045	79,410	354,252	274,842	441,289	237,614	203,675	3,671	482,188	36,360
2025	911,343	405,630	1,316,973	80,251	356,340	276,089	441,160	242,788	198,372	3,704	478,165	42,591
2026	927,354	459,540	1,386,894	81,735	362,346	280,611	441,250	248,018	193,232	3,741	477,584	48,252
2027	945,846	512,489	1,458,335	83,427	369,422	285,995	441,605	253,495	188,110	3,779	477,885	53,811
2028	965,831	566,352	1,532,184	85,266	376,942	291,676	442,066	259,292	182,774	3,821	478,271	59,467
2029	975,915	622,004	1,597,919	86,464	380,554	294,090	442,557	266,007	176,550	3,868	474,508	65,310
2030	985,144	691,999	1,677,143	87,665	384,061	296,396	442,806	272,068	170,738	3,916	471,051	72,660
2031	989,867	754,492	1,744,359	88,611	385,589	296,978	443,022	279,457	163,565	3,967	464,510	79,222
2032	990,774	834,056	1,824,830	89,316	385,469	296,153	443,098	286,329	156,769	4,017	456,940	87,576
2033	993,687	906,690	1,900,376	89,865	385,657	295,792	443,035	294,128	148,907	4,067	448,765	95,202
2034	962,186	992,243	1,954,429	87,483	371,282	283,799	443,003	304,757	138,246	4,117	426,162	104,186
2035	908,324	1,110,930	2,019,254	83,093	346,516	263,423	441,831	315,699	126,132	4,169	393,724	116,648
2036	881,812	1,239,314	2,121,126	80,938	333,203	252,265	439,640	324,174	115,466	4,221	371,952	130,128
2037	834,526	1,339,396	2,173,922	77,101	313,611	236,510	438,221	336,605	101,616	4,274	342,399	140,637
2038	735,886	1,482,019	2,217,904	68,480	273,291	204,811	436,291	349,365	86,926	4,327	296,064	155,612
2039	641,989	1,627,718	2,269,707	59,974	235,063	175,089	432,280	362,090	70,190	4,376	249,655	170,910
2040	558,991	1,770,028	2,329,019	52,391	201,919	149,528	427,968	374,978	52,990	4,421	206,940	185,853
2041	482,517	1,914,115	2,396,631	45,351	172,260	126,909	423,852	387,961	35,891	4,462	167,263	200,982
2042	392,772	2,057,018	2,449,790	36,983	138,962	101,979	419,836	403,103	16,733	4,499	123,211	215,987
2043	310,743	2,227,092	2,537,835	29,290	108,680	79,390	415,028	416,279	0	4,530	83,920	233,845
2044	233,225	2,369,818	2,603,043	22,017	81,243	59,226	409,905	431,107	0	4,556	63,782	248,831
2045	156,891	2,528,676	2,685,567	14,827	54,852	40,025	404,188	444,610	0	4,577	44,602	265,511
2046	112,352	2,671,168	2,783,520	10,622	39,214	28,592	392,350	457,825	0	4,593	33,185	280,473
2047	78,259	2,806,877	2,885,135	7,414	27,169	19,755	371,854	471,247	0	4,603	24,358	294,722
2048	51,973	2,940,591	2,992,564	4,937	17,825	12,888	330,236	328,299	0	4,608	17,496	[b] 308,762
2049	34,274	3,073,745	3,108,018	3,256	11,611	8,355	0	0	0	4,608	10,012	[b] 322,743
2050	22,420	3,207,768	3,230,188	2,130	7,536	5,406	0	0	0	4,604	7,945	[b] 336,816
2051	13,966	3,345,640	3,359,606	1,327	4,674	3,347	0	0	0	4,595	6,363	[b] 351,292
2052	7,597	3,486,771	3,494,369	722	2,506	1,784	0	0	0	4,581	5,429	[b] 366,111
2053	3,821	3,634,566	3,638,387	363	1,229	866	0	0	0	4,563	4,893	[b] 381,629
2054	1,550	3,784,027	3,785,577	147	497	350	0	0	0	4,542	4,516	[b] 397,323
2055	0	3,937,476	3,937,476	0	0	0	0	0	0	4,517	4,489	[b] 413,435
2056	0	4,098,053	4,098,053	0	0	0	0	0	0	4,489	4,458	[b] 430,296
2057	0	4,263,992	4,263,992	0	0	0	0	0	0	4,458	4,424	[b] 447,719

[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 Year End 30-Jun	Number: Active	Number: Pay Status	Total Assets: Assets (boy)	Benefit Payments	Expenses	Employer Contribs.	Member Contribs.	Premium Tax Allocation Contribs.	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	21	20	$3,849,800	$491,271	$180	$198,672	$80,332	$182,018	$358,532	$4,177,903	$10,652,278	$6,474,375	39%
2018	19	21	4,177,903	560,706	3,579	212,579	80,432	201,554	227,893	4,336,076	11,045,683	6,709,607	39%
2019	18	21	4,336,076	543,749	3,579	278,845	80,025	202,316	238,860	4,588,794	11,472,023	6,883,229	40%
2020	17	21	4,588,794	564,443	3,586	291,388	79,496	210,867	252,756	4,855,272	11,896,309	7,041,037	41%
2021	16	21	4,855,272	581,770	3,601	303,689	79,334	216,013	267,411	5,136,348	12,323,963	7,187,615	42%
2022	15	22	5,136,348	599,453	3,620	316,572	79,213	220,896	282,868	5,432,824	12,754,216	7,321,392	43%
2023	14	22	5,432,824	617,183	3,644	328,705	79,131	226,540	299,173	5,745,546	13,186,797	7,441,251	44%
2024	13	22	5,745,546	631,638	3,671	337,426	79,410	232,029	316,373	6,075,475	13,627,036	7,551,561	45%
2025	13	22	6,075,475	643,821	3,704	343,330	80,251	237,614	334,522	6,423,667	14,081,286	7,657,619	46%
2026	12	22	6,423,667	652,231	3,741	345,359	81,735	242,788	353,679	6,791,256	14,557,973	7,766,717	47%
2027	12	22	6,791,256	658,805	3,779	345,327	83,427	248,018	373,904	7,179,348	15,061,517	7,882,169	48%
2028	11	22	7,179,348	663,654	3,821	343,201	85,266	253,495	395,257	7,589,092	15,595,334	8,006,242	49%
2029	11	22	7,589,092	680,328	3,868	353,079	86,464	259,292	417,797	8,021,528	16,145,240	8,123,712	50%
2030	10	22	8,021,528	697,558	3,916	362,579	87,665	266,007	441,585	8,477,890	16,711,167	8,233,277	51%
2031	10	22	8,477,890	718,933	3,967	377,069	88,611	272,068	466,687	8,959,425	17,287,908	8,328,483	52%
2032	9	22	8,959,425	742,375	4,017	392,481	89,316	279,457	493,172	9,467,459	17,872,157	8,404,699	53%
2033	9	22	9,467,459	760,110	4,067	402,888	89,865	286,329	521,115	10,003,479	18,470,542	8,467,063	54%
2034	8	22	10,003,479	800,354	4,117	437,293	87,483	294,128	550,583	10,568,495	19,045,674	8,477,179	55%
2035	7	23	10,568,495	852,208	4,169	482,152	83,093	304,757	581,637	11,163,757	19,573,761	8,410,004	57%
2036	6	23	11,163,757	880,916	4,221	501,727	80,938	315,699	614,366	11,791,350	20,087,758	8,296,408	59%
2037	5	23	11,791,350	925,589	4,274	541,106	77,101	324,174	648,864	12,452,732	20,564,005	8,111,273	61%
2038	5	24	12,452,732	1,004,879	4,327	615,159	68,480	336,605	685,200	13,148,970	20,943,634	7,794,664	63%
2039	4	24	13,148,970	1,079,504	4,376	684,171	59,974	349,365	723,455	13,882,055	21,228,155	7,346,100	65%
2040	3	24	13,882,055	1,146,898	4,421	745,223	52,391	362,090	763,741	14,654,181	21,425,071	6,770,890	68%
2041	3	24	14,654,181	1,207,731	4,462	799,102	45,351	374,978	806,176	15,467,595	21,539,887	6,072,292	72%
2042	2	24	15,467,595	1,279,222	4,499	864,669	36,983	387,961	850,878	16,324,365	21,553,378	5,229,013	76%
2043	1	24	16,324,365	1,339,310	4,530	916,108	29,290	403,103	897,967	17,226,993	21,474,784	4,247,791	80%
2044	1	24	17,226,993	1,394,854	4,556	964,612	22,017	416,279	947,580	18,178,071	21,306,646	3,128,575	85%
2045	1	24	18,178,071	1,446,479	4,577	1,007,475	14,827	431,107	999,858	19,180,282	21,049,143	1,868,861	91%
2046	0	24	19,180,282	1,467,248	4,593	1,018,294	10,622	444,610	1,054,961	20,236,928	20,740,064	503,136	98%
2047	0	23	20,236,928	1,478,661	4,603	83,318	7,414	457,825	1,087,671	20,389,892	20,389,892	0	100%
2048	0	23	20,389,892	1,482,677	4,608	17,490	4,937	0	1,081,700	20,006,733	20,006,733	0	100%
2049	0	22	20,006,733	1,479,038	4,608	12,966	3,256	0	1,060,556	19,599,866	19,599,867	0	100%
2050	0	21	19,599,866	1,469,932	4,604	10,013	2,130	0	1,038,315	19,175,788	19,175,788	0	100%
2051	0	21	19,175,788	1,457,250	4,595	7,944	1,327	0	1,015,257	18,738,472	18,738,472	0	100%
2052	0	20	18,738,472	1,442,150	4,581	6,363	722	0	991,556	18,290,382	18,290,381	0	100%
2053	0	20	18,290,382	1,424,380	4,563	5,429	363	0	967,358	17,834,589	17,834,588	0	100%
2054	0	19	17,834,589	1,404,872	4,542	4,893	147	0	942,799	17,373,013	17,373,013	0	100%
2055	0	18	17,373,013	1,384,231	4,517	4,516	0	0	917,959	16,906,740	16,906,740	0	100%
2056	0	18	16,906,740	1,362,013	4,489	4,489	0	0	892,917	16,437,644	16,437,644	0	100%
2057	0	17	16,437,644	1,339,412	4,458	4,458	0	0	867,730	15,965,962	15,965,962	0	100%

Actuarial Projections – Conservation Funding in 2019
Table A-4

Plan Year End 30-Jun	Benefit Payment Account[a] Assets (boy)	Net Benefit Pmts and Expenses	Employer Contribs.	7.12%[d] of Pay Member Contribs.	100.00% of Premium Tax Allocation	Investment Income	Transfer (To)/From Accumulation Account	Accumulation Account[b] Assets (boy)[c]	Net Benefit Pmts and Expenses	Employer Contribs.	1.50% of Pay Member Contribs.	0.00% of Premium Tax Allocation	Investment Income	Statewide Employer Contribution
2018	$4,177,903	$564,285	$212,579	$80,432	$201,554	$227,893	$0	$0	$0	$0	$0	$0	$0	$0
2019	4,336,076	547,328	278,845	66,167	202,316	238,484	(4,574,560)	4,574,560	0	0	13,858	0	376	6,145
2020	0	568,029	291,388	65,774	210,867	0	0	4,588,794	0	0	13,722	0	252,756	12,246
2021	0	585,371	303,689	65,669	216,013	0	0	4,855,272	0	0	13,665	0	267,411	18,122
2022	0	603,073	316,572	65,605	220,896	0	0	5,136,348	0	0	13,608	0	282,868	23,654
2023	0	620,827	328,705	65,582	226,540	0	0	5,432,824	0	0	13,549	0	299,173	30,154
2024	0	635,309	337,426	65,854	232,029	0	0	5,745,546	0	0	13,556	0	316,373	36,360
2025	0	647,525	343,330	66,581	237,614	0	0	6,075,475	0	0	13,670	0	334,522	42,591
2026	0	655,972	345,359	67,825	242,788	0	0	6,423,667	0	0	13,910	0	353,679	48,252
2027	0	662,584	345,327	69,239	248,018	0	0	6,791,256	0	0	14,188	0	373,904	53,811
2028	0	667,475	343,201	70,779	253,495	0	0	7,179,348	0	0	14,487	0	395,257	59,467
2029	0	684,196	353,079	71,825	259,292	0	0	7,589,092	0	0	14,639	0	417,797	65,310
2030	0	701,474	362,579	72,888	266,007	0	0	8,021,528	0	0	14,777	0	441,585	72,660
2031	0	722,900	377,069	73,763	272,068	0	0	8,477,890	0	0	14,848	0	466,687	79,222
2032	0	746,392	392,481	74,454	279,457	0	0	8,959,425	0	0	14,862	0	493,172	87,576
2033	0	764,177	402,888	74,960	286,329	0	0	9,467,459	0	0	14,905	0	521,115	95,202
2034	0	804,471	437,293	73,050	294,128	0	0	10,003,479	0	0	14,433	0	550,583	104,186
2035	0	856,377	482,152	69,468	304,757	0	0	10,568,495	0	0	13,625	0	581,637	116,648
2036	0	885,137	501,727	67,711	315,699	0	0	11,163,757	0	0	13,227	0	614,366	130,128
2037	0	929,863	541,106	64,583	324,174	0	0	11,791,350	0	0	12,518	0	648,864	140,637
2038	0	1,009,206	615,159	57,442	336,605	0	0	12,452,732	0	0	11,038	0	685,200	155,612
2039	0	1,083,880	684,171	50,344	349,365	0	0	13,148,970	0	0	9,630	0	723,455	170,910
2040	0	1,151,319	745,223	44,006	362,090	0	0	13,882,055	0	0	8,385	0	763,741	185,853
2041	0	1,212,193	799,102	38,113	374,978	0	0	14,654,181	0	0	7,238	0	806,176	200,982
2042	0	1,283,721	864,669	31,091	387,961	0	0	15,467,595	0	0	5,892	0	850,878	215,987
2043	0	1,343,840	916,108	24,629	403,103	0	0	16,324,365	0	0	4,661	0	897,967	233,845
2044	0	1,399,410	964,612	18,519	416,279	0	0	17,226,993	0	0	3,498	0	947,580	248,831
2045	0	1,451,056	1,007,475	12,474	431,107	0	0	18,178,071	0	0	2,353	0	999,858	265,511
2046	0	1,471,841	1,018,294	8,937	444,610	0	0	19,180,282	0	0	1,685	0	1,054,961	280,473
2047	0	547,383	83,318	6,240	457,825	0	0	20,236,928	935,881	0	1,174	0	1,087,671	294,722
2048	0	0	0	0	0	0	0	20,389,892	1,487,285	17,490	4,937	0	1,081,700	308,762
2049	0	0	0	0	0	0	0	20,006,734	1,483,646	12,966	3,256	0	1,060,556	322,743
2050	0	0	0	0	0	0	0	19,599,866	1,474,536	10,013	2,130	0	1,038,315	336,816
2051	0	0	0	0	0	0	0	19,175,788	1,461,845	7,944	1,327	0	1,015,257	351,292
2052	0	0	0	0	0	0	0	18,738,471	1,446,731	6,363	722	0	991,556	366,111
2053	0	0	0	0	0	0	0	18,290,381	1,428,943	5,429	363	0	967,358	381,629
2054	0	0	0	0	0	0	0	17,834,588	1,409,414	4,893	147	0	942,799	397,323
2055	0	0	0	0	0	0	0	17,373,013	1,388,748	4,516	0	0	917,959	413,435
2056	0	0	0	0	0	0	0	16,906,740	1,366,502	4,489	0	0	892,917	430,296
2057	0	0	0	0	0	0	0	16,437,644	1,343,870	4,458	0	0	867,730	447,719

[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, 2024.*

[d] *Blended employee contribution rate of 8.62% of pay less 1.50% of pay going into the Accumulation Account.*

Actuarial Projections – Optional Funding in (N/A)
Table A-5

Valuation Plan Year End 30-Jun	Number Active	Number Pay Status	Total Assets: Assets (boy)	Benefit Payments	Expenses	Employer Contribs.	Member Contribs.	Premium Tax Allocation Contribs.	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	21	20	$3,849,800	$491,271	$180	$198,672	$80,332	$182,018	$358,532	$4,177,903	$10,652,278	$6,474,375	39%
2018	21	21	4,177,903	560,706	3,579	212,579	80,432	201,554	227,893	4,336,076	11,045,683	6,709,607	39%
2019	21	21	4,336,076	543,749	3,730	227,460	85,974	202,316	237,623	4,541,971	11,494,872	6,952,901	40%
2020	21	21	4,541,971	564,690	3,866	243,382	90,994	210,867	249,176	4,767,833	11,965,627	7,197,794	40%
2021	21	21	4,767,833	582,658	3,996	260,419	96,129	216,013	261,848	5,015,588	12,463,626	7,448,038	40%
2022	21	22	5,015,588	601,273	4,118	278,648	101,000	220,896	275,726	5,286,467	12,987,946	7,701,479	41%
2023	21	22	5,286,467	620,141	4,263	298,153	106,889	226,540	290,950	5,584,595	13,543,109	7,958,514	41%
2024	21	22	5,584,595	635,930	4,397	319,024	112,822	232,029	307,791	5,915,934	14,134,724	8,218,790	42%
2025	21	22	5,915,934	649,682	4,533	341,356	119,371	237,614	326,573	6,286,633	14,770,693	8,484,060	43%
2026	21	22	6,286,633	659,853	4,656	365,251	126,027	242,788	347,652	6,703,843	15,458,815	8,754,972	43%
2027	21	22	6,703,843	668,351	4,775	390,819	132,829	248,018	371,385	7,173,767	16,204,644	9,030,877	44%
2028	21	22	7,173,767	675,277	4,897	418,176	139,888	253,495	398,122	7,703,274	17,013,570	9,310,296	45%
2029	21	22	7,703,274	694,148	5,024	447,448	146,505	259,292	427,861	8,285,207	17,873,852	9,588,645	46%
2030	21	22	8,285,207	713,675	5,183	478,769	154,591	266,007	460,584	8,926,299	18,792,874	9,866,575	47%
2031	21	22	8,926,299	737,532	5,319	512,283	161,582	272,068	496,456	9,625,837	19,764,718	10,138,881	49%
2032	21	22	9,625,837	763,609	5,490	548,143	170,113	279,457	535,623	10,390,075	20,794,887	10,404,812	50%
2033	21	22	10,390,075	784,262	5,636	586,513	177,707	286,329	578,526	11,229,252	21,889,823	10,660,571	51%
2034	21	23	11,229,252	827,701	5,809	627,569	183,736	294,128	624,986	12,126,162	23,019,843	10,893,681	53%
2035	21	23	12,126,162	882,979	6,047	671,499	191,066	304,757	674,489	13,078,947	24,177,042	11,098,095	54%
2036	21	23	13,078,947	915,543	6,291	718,504	201,411	315,699	727,855	14,120,583	25,401,686	11,281,103	56%
2037	21	24	14,120,583	964,777	6,462	768,799	206,848	324,174	785,548	15,234,713	26,662,965	11,428,252	57%
2038	21	24	15,234,713	1,049,187	6,731	822,615	211,461	336,605	846,449	16,395,925	27,922,068	11,526,143	59%
2039	21	25	16,395,925	1,129,550	7,005	880,198	216,430	349,365	910,172	17,615,535	29,180,472	11,564,937	60%
2040	21	25	17,615,535	1,208,384	7,272	941,812	222,166	362,090	977,276	18,903,224	30,444,137	11,540,913	62%
2041	21	26	18,903,224	1,285,540	7,540	1,007,739	228,452	374,978	1,048,307	20,269,620	31,720,395	11,450,775	64%
2042	21	26	20,269,620	1,377,096	7,805	1,078,281	233,295	387,961	1,123,366	21,707,621	32,989,727	11,282,106	66%
2043	21	26	21,707,621	1,461,980	8,128	1,153,761	241,306	403,103	1,202,820	23,238,503	34,271,679	11,033,176	68%
2044	21	27	23,238,503	1,547,623	8,394	1,234,524	246,757	416,279	1,287,384	24,867,430	35,555,720	10,688,290	70%
2045	21	27	24,867,430	1,637,180	8,705	1,320,941	254,456	431,107	1,377,493	26,605,543	36,844,775	10,239,232	72%
2046	21	27	26,605,543	1,704,390	8,978	1,413,407	263,319	444,610	1,474,374	28,487,885	38,169,919	9,682,034	75%
2047	21	27	28,487,885	1,767,732	9,242	1,512,345	272,513	457,825	1,579,469	30,533,063	39,537,602	9,004,539	77%
2048	21	27	30,533,063	1,830,120	9,508	1,618,209	282,525	471,247	1,693,762	32,759,179	40,953,091	8,193,912	80%
2049	21	27	32,759,179	1,891,739	9,773	1,731,484	293,432	484,680	1,818,253	35,185,517	42,425,848	7,240,331	83%
2050	21	27	35,185,517	1,952,061	10,037	1,852,688	305,119	498,208	1,954,031	37,833,465	43,963,741	6,130,276	86%
2051	21	27	37,833,465	2,012,217	10,303	1,982,376	317,509	511,919	2,102,255	40,725,003	45,574,803	4,849,800	89%
2052	21	27	40,725,003	2,072,027	10,572	2,121,142	330,471	525,815	2,264,154	43,883,986	47,264,713	3,380,727	93%
2053	21	27	43,883,986	2,131,973	10,848	2,269,622	344,205	540,121	2,441,053	47,336,166	49,042,332	1,706,166	97%
2054	21	27	47,336,166	2,191,935	11,124	2,238,623	357,801	554,538	2,629,207	50,913,275	50,913,275	0	100%
2055	21	27	50,913,275	2,252,782	11,416	1,080,094	372,145	0	2,778,201	52,879,517	52,879,517	0	100%
2056	21	27	52,879,517	2,317,591	11,721	1,121,978	387,478	0	2,886,129	54,945,790	54,945,791	0	100%
2057	21	27	54,945,790	2,387,134	12,034	1,168,748	402,683	0	2,999,561	57,117,614	57,117,614	0	100%

Actuarial Projections – Optional Funding in (N/A)
Table A-6

	Employer Contributions								Minimum Payment			
Valuation Plan Year End 30-Jun[a,b]	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	Statewide Employer Contribution
2018	$933,350	$80,432	$372,045	$291,613	$420,482	$202,316	$218,166	$3,579	$513,358	$227,460	$227,460	$0
2019	982,375	85,974	389,920	303,946	440,921	210,867	230,054	3,730	537,729	243,382	243,382	0
2020	1,031,416	90,994	408,044	317,050	462,692	216,013	246,679	3,866	567,595	260,419	260,419	0
2021	1,083,573	96,129	427,651	331,523	485,471	220,896	264,575	3,996	600,093	278,648	278,648	0
2022	1,132,447	101,000	445,522	344,523	509,625	226,540	283,085	4,118	631,725	298,153	298,153	0
2023	1,190,436	106,889	466,512	359,624	535,144	232,029	303,115	4,263	667,002	319,024	319,024	0
2024	1,250,045	112,822	488,419	375,598	562,209	237,614	324,595	4,397	704,589	341,356	341,356	0
2025	1,316,973	119,371	513,687	394,316	590,972	242,788	348,184	4,533	747,034	365,251	365,251	0
2026	1,386,894	126,027	540,826	414,799	621,770	248,018	373,752	4,656	793,207	390,819	390,819	0
2027	1,458,335	132,829	568,698	435,869	654,903	253,495	401,408	4,775	842,053	418,176	418,176	0
2028	1,532,184	139,888	597,395	457,508	690,620	259,292	431,328	4,897	893,732	447,448	447,448	0
2029	1,597,919	146,505	622,907	476,402	729,158	266,007	463,151	5,024	944,578	478,769	478,769	0
2030	1,677,143	154,591	653,866	499,276	770,563	272,068	498,495	5,183	1,002,954	512,283	512,283	0
2031	1,744,359	161,582	680,024	518,443	815,355	279,457	535,898	5,319	1,059,659	548,143	548,143	0
2032	1,824,830	170,113	711,129	541,016	863,664	286,329	577,335	5,490	1,123,841	586,513	586,513	0
2033	1,900,376	177,707	739,937	562,230	916,085	294,128	621,957	5,636	1,189,823	627,569	627,569	0
2034	1,954,429	183,736	759,183	575,446	973,082	304,757	668,325	5,809	1,249,580	671,499	671,499	0
2035	2,019,254	191,066	780,830	589,764	1,034,450	315,699	718,751	6,047	1,314,562	718,504	718,504	0
2036	2,121,126	201,411	817,769	616,358	1,100,679	324,174	776,505	6,291	1,399,154	768,799	768,799	0
2037	2,173,922	206,848	837,666	630,818	1,173,845	336,605	837,240	6,462	1,474,520	822,615	822,615	0
2038	2,217,904	211,461	852,986	641,526	1,254,222	349,365	904,857	6,731	1,553,114	880,198	880,198	0
2039	2,269,707	216,430	871,040	654,610	1,342,459	362,090	980,369	7,005	1,641,983	941,812	941,812	0
2040	2,329,019	222,166	892,473	670,307	1,440,049	374,978	1,065,071	7,272	1,742,650	1,007,739	1,007,739	0
2041	2,396,631	228,452	917,943	689,491	1,550,051	387,961	1,162,090	7,540	1,859,121	1,078,281	1,078,281	0
2042	2,449,790	233,295	939,163	705,868	1,677,063	403,103	1,273,960	7,805	1,987,633	1,153,761	1,153,761	0
2043	2,537,835	241,306	973,681	732,376	1,826,685	416,279	1,410,406	8,128	2,150,910	1,234,524	1,234,524	0
2044	2,603,043	246,757	1,000,527	753,770	2,010,112	431,107	1,579,005	8,394	2,341,169	1,320,941	1,320,941	0
2045	2,685,567	254,456	1,034,692	780,236	2,243,746	444,610	1,799,136	8,705	2,588,076	1,413,407	1,413,407	0
2046	2,783,520	263,319	1,073,538	810,219	2,560,795	457,825	2,102,970	8,978	2,922,167	1,512,345	1,512,345	0
2047	2,885,135	272,513	1,113,767	841,254	3,033,940	471,247	2,562,693	9,242	3,413,189	1,618,209	1,618,209	0
2048	2,992,564	282,525	1,156,361	873,835	3,848,705	484,680	3,364,025	9,508	4,247,368	1,731,484	1,731,484	0
2049	3,108,018	293,432	1,202,091	908,659	5,685,577	498,208	5,187,369	9,773	6,105,801	1,852,688	1,852,688	0
2050	3,230,188	305,119	1,250,385	945,266	7,436,774	511,919	6,924,855	10,037	6,704,067	1,982,376	1,982,376	0
2051	3,359,606	317,509	1,301,494	983,985	6,296,601	525,815	5,770,786	10,303	5,412,567	2,121,142	2,121,142	0
2052	3,494,369	330,471	1,354,613	1,024,142	4,981,384	540,121	4,441,263	10,572	3,930,719	2,269,622	2,269,622	0
2053	3,638,387	344,205	1,411,214	1,067,010	3,472,452	554,538	2,917,914	10,848	2,238,623	2,238,623	2,238,623	0
2054	3,785,577	357,801	1,468,862	1,111,061	0	0	0	11,124	1,080,094 [c]	1,080,094	1,080,094	0
2055	3,937,476	372,145	1,527,851	1,155,706	0	0	0	11,416	1,121,978 [c]	1,121,978	1,121,978	0
2056	4,098,053	387,478	1,589,877	1,202,399	0	0	0	11,721	1,168,748 [c]	1,168,748	1,168,748	0
2057	4,263,992	402,683	1,653,989	1,251,306	0	0	0	12,034	1,210,599 [c]	1,210,599	1,210,599	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 2024
Table A-7

Valuation Plan Year End 30-Jun	Number		Total Assets										
	Active	Pay Status	Assets (boy)	Benefit Payments	Expenses	Employer Contribs.	Member Contribs.	Premium Tax Allocation Contribs.	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	21	20	$3,849,800	$491,271	$180	$198,672	$80,332	$182,018	$358,532	$4,177,903	$10,652,278	$6,474,375	39%
2018	21	21	4,177,903	560,706	3,579	212,579	80,432	201,554	227,893	4,336,076	11,045,683	6,709,607	39%
2019	21	21	4,336,076	543,749	3,730	227,460	85,974	202,316	237,623	4,541,970	11,494,872	6,952,902	40%
2020	21	21	4,541,970	564,690	3,866	243,382	90,994	210,867	249,176	4,767,833	11,965,627	7,197,794	40%
2021	21	21	4,767,833	582,658	3,996	260,419	96,129	216,013	261,848	5,015,588	12,463,626	7,448,038	40%
2022	21	22	5,015,588	601,273	4,118	278,648	101,000	220,896	275,726	5,286,467	12,987,946	7,701,479	41%
2023	20	22	5,286,467	620,141	4,263	298,153	106,889	226,540	290,950	5,584,595	13,543,109	7,958,514	41%
2024	19	22	5,584,595	635,930	4,264	318,781	107,323	232,029	307,639	5,910,173	14,113,602	8,203,429	42%
2025	18	22	5,910,173	649,454	4,277	325,858	108,336	237,614	325,550	6,253,800	14,705,053	8,451,253	43%
2026	17	22	6,253,800	659,015	4,298	328,787	110,083	242,788	344,457	6,616,602	15,326,380	8,709,778	43%
2027	16	22	6,616,602	666,624	4,325	329,470	112,125	248,018	364,420	6,999,686	15,982,830	8,983,144	44%
2028	16	22	6,999,686	672,468	4,357	327,960	114,389	253,495	385,499	7,404,204	16,678,656	9,274,452	44%
2029	15	22	7,404,204	690,108	4,397	338,364	116,086	259,292	407,753	7,831,194	17,400,560	9,569,366	45%
2030	14	22	7,831,194	708,224	4,440	348,247	117,864	266,007	431,243	8,281,891	18,149,358	9,867,467	46%
2031	14	22	8,281,891	730,449	4,487	363,022	119,462	272,068	456,036	8,757,543	18,920,841	10,163,298	46%
2032	13	22	8,757,543	754,681	4,536	378,589	120,904	279,457	482,200	9,259,476	19,712,648	10,453,172	47%
2033	12	22	9,259,476	773,237	4,586	389,099	122,288	286,329	509,811	9,789,180	20,532,373	10,743,193	48%
2034	11	23	9,789,180	814,364	4,638	423,587	120,839	294,128	538,935	10,347,667	21,343,747	10,996,080	48%
2035	10	23	10,347,667	867,146	4,693	468,504	117,470	304,757	569,634	10,936,193	22,124,125	11,187,932	49%
2036	10	23	10,936,193	896,847	4,749	488,145	116,407	315,699	601,997	11,556,845	22,907,427	11,350,582	50%
2037	9	24	11,556,845	942,790	4,808	528,094	113,448	324,174	636,118	12,211,081	23,671,039	11,459,958	52%
2038	8	24	12,211,081	1,023,537	4,867	603,666	104,910	336,605	672,065	12,899,923	24,355,755	11,455,832	53%
2039	7	25	12,899,923	1,099,816	4,924	674,972	95,785	349,365	709,913	13,625,218	24,954,766	11,329,548	55%
2040	6	25	13,625,218	1,174,041	4,980	743,875	87,095	362,090	749,768	14,389,025	25,468,202	11,079,177	56%
2041	5	25	14,389,025	1,246,028	5,033	810,538	78,262	374,978	791,741	15,193,483	25,896,262	10,702,779	59%
2042	4	26	15,193,483	1,331,725	5,084	892,283	67,653	387,961	835,942	16,040,513	26,212,241	10,171,728	61%
2043	3	26	16,040,513	1,410,079	5,131	964,101	57,510	403,103	882,486	16,932,503	26,418,320	9,485,817	64%
2044	3	26	16,932,503	1,488,319	5,173	1,037,747	47,420	416,279	931,503	17,871,960	26,513,119	8,641,159	67%
2045	2	26	17,871,960	1,565,127	5,211	1,108,465	37,130	431,107	983,130	18,861,454	26,490,868	7,629,414	71%
2046	2	26	18,861,454	1,614,697	5,244	1,150,936	29,602	444,610	1,037,521	19,904,182	26,384,971	6,480,789	75%
2047	1	26	19,904,182	1,656,851	5,272	1,185,738	22,731	457,825	1,094,843	21,003,196	26,201,743	5,198,547	80%
2048	1	25	21,003,196	1,693,539	5,296	1,213,969	16,817	471,247	1,155,263	22,161,657	25,943,769	3,782,112	85%
2049	1	25	22,161,657	1,725,125	5,315	1,235,870	12,280	484,680	1,218,956	23,383,003	25,622,279	2,239,276	91%
2050	0	25	23,383,003	1,748,299	5,329	1,248,520	8,661	498,208	1,286,113	24,670,877	25,250,019	579,142	98%
2051	0	24	24,670,877	1,762,171	5,340	87,788	5,878	511,919	1,325,373	24,834,324	24,834,324	0	100%
2052	0	24	24,834,324	1,770,090	5,346	2,549	3,902	0	1,317,892	24,383,231	24,383,231	0	100%
2053	0	23	24,383,231	1,770,232	5,349	3,341	2,552	0	1,293,063	23,906,606	23,906,606	0	100%
2054	0	22	23,906,606	1,762,905	5,349	3,227	1,608	0	1,267,018	23,410,205	23,410,205	0	100%
2055	0	22	23,410,205	1,751,140	5,346	2,983	944	0	1,240,011	22,897,657	22,897,657	0	100%
2056	0	21	22,897,657	1,735,550	5,340	3,266	578	0	1,212,242	22,372,853	22,372,852	0	100%
2057	0	21	22,372,853	1,717,779	5,332	3,513	319	0	1,183,860	21,837,434	21,837,434	0	100%

Actuarial Projections – Conservation Funding in 2024
Table A-8

	Benefit Payment Account [a]						Accumulation Account [b]						Minimum Payment			
Plan Year End 30-Jun	Assets (boy)	Net Benefit Pmts and Expenses	Employer Contribs.	7.12%[d] of Pay Member Contribs.	100.00% of Premium Tax Allocation	Investment Income	Assets (boy)[c]	Net Benefit Pmts and Expenses	Employer Contribs.	1.50% of Pay Member Contribs.	0.00% of Premium Tax Allocation	Investment Income	Conservation Employer Cont.	Alternative Employer Cont.	Minimum Alt /Cons Cont.	Statewide Employer Contribution
2018	$4,177,903	$564,285	$212,579	$80,432	$201,554	$227,893	$0	$0	$0	$0	$0	$0	NA	$212,579	$212,579	$0
2019	4,336,076	547,479	227,460	85,974	202,316	237,623	0	0	0	0	0	0	NA	227,460	227,460	0
2020	4,541,970	568,556	243,382	90,994	210,867	249,176	0	0	0	0	0	0	NA	243,382	243,382	0
2021	4,767,833	586,654	260,419	96,129	216,013	261,848	0	0	0	0	0	0	NA	260,419	260,419	0
2022	5,015,588	605,391	278,648	101,000	220,896	275,726	0	0	0	0	0	0	NA	278,648	278,648	0
2023	5,286,467	624,404	298,153	106,889	226,540	290,950	0	0	0	0	0	0	NA	298,153	298,153	0
2024	5,584,595	640,194	318,781	89,384	232,029	307,153	5,891,748	0	0	17,939	0	487	318,781	319,024	318,781	5,681
2025	0	653,731	325,858	90,259	237,614	0	5,910,174	0	0	18,077	0	325,550	325,858	341,356	325,858	11,740
2026	0	663,313	328,787	91,738	242,788	0	6,253,801	0	0	18,345	0	344,457	328,787	365,251	328,787	17,210
2027	0	670,949	329,470	93,461	248,018	0	6,616,603	0	0	18,664	0	364,420	329,470	390,819	329,470	22,479
2028	0	676,825	327,960	95,370	253,495	0	6,999,687	0	0	19,019	0	385,499	327,960	418,176	327,960	27,748
2029	0	694,505	338,364	96,849	259,292	0	7,404,205	0	0	19,237	0	407,753	338,364	447,448	338,364	33,122
2030	0	712,664	348,247	98,410	266,007	0	7,831,195	0	0	19,454	0	431,244	348,247	478,769	348,247	39,919
2031	0	734,936	363,022	99,846	272,068	0	8,281,893	0	0	19,616	0	456,036	363,022	512,283	363,022	45,844
2032	0	759,217	378,589	101,171	279,457	0	8,757,545	0	0	19,733	0	482,200	378,589	548,143	378,589	53,477
2033	0	777,823	389,099	102,395	286,329	0	9,259,478	0	0	19,893	0	509,811	389,099	586,513	389,099	60,289
2034	0	819,002	423,587	101,287	294,128	0	9,789,182	0	0	19,552	0	538,935	423,587	627,569	423,587	68,349
2035	0	871,839	468,504	98,578	304,757	0	10,347,669	0	0	18,892	0	569,634	468,504	671,499	468,504	79,780
2036	0	901,596	488,145	97,752	315,699	0	10,936,195	0	0	18,655	0	601,997	488,145	718,504	488,145	92,133
2037	0	947,598	528,094	95,330	324,174	0	11,556,847	0	0	18,118	0	636,118	528,094	768,799	528,094	101,434
2038	0	1,028,404	603,666	88,133	336,605	0	12,211,083	0	0	16,777	0	672,065	603,666	822,615	603,666	115,440
2039	0	1,104,740	674,972	80,403	349,365	0	12,899,925	0	0	15,382	0	709,913	674,972	880,198	674,972	130,646
2040	0	1,179,021	743,875	73,056	362,090	0	13,625,220	0	0	14,039	0	749,768	743,875	941,812	743,875	146,273
2041	0	1,251,061	810,538	65,545	374,978	0	14,389,027	0	0	12,717	0	791,742	810,538	1,007,739	810,538	162,626
2042	0	1,336,809	892,283	56,565	387,961	0	15,193,486	0	0	11,088	0	835,943	892,283	1,078,281	892,283	179,611
2043	0	1,415,210	964,101	48,006	403,103	0	16,040,517	0	0	9,504	0	882,486	964,101	1,153,761	964,101	199,946
2044	0	1,493,492	1,037,747	39,466	416,279	0	16,932,507	0	0	7,954	0	931,504	1,037,747	1,234,524	1,037,747	217,640
2045	0	1,570,338	1,108,465	30,766	431,107	0	17,871,965	0	0	6,364	0	983,131	1,108,465	1,320,941	1,108,465	237,435
2046	0	1,619,941	1,150,936	24,395	444,610	0	18,861,460	0	0	5,207	0	1,037,522	1,150,936	1,413,407	1,150,936	255,822
2047	0	1,662,123	1,185,738	18,560	457,825	0	19,904,189	0	0	4,171	0	1,094,844	1,185,738	1,512,345	1,185,738	273,744
2048	0	1,698,835	1,213,969	13,619	471,247	0	21,003,204	0	0	3,198	0	1,155,263	1,213,969	1,618,209	1,213,969	291,832
2049	0	1,730,440	1,235,870	9,890	484,680	0	22,161,665	0	0	2,390	0	1,218,956	1,235,870	1,731,484	1,235,870	309,613
2050	0	1,753,628	1,248,520	6,900	498,208	0	23,383,011	0	0	1,761	0	1,286,113	1,248,520	1,852,688	1,248,520	326,842
2051	0	604,344	87,788	4,637	511,919	0	24,670,885	1,163,167	0	1,241	0	1,325,373	87,788	99,539	87,788	344,074
2052	0	0	0	0	0	0	24,834,332	1,775,436	2,549	3,902	0	1,317,892	2,549	21,020	2,549	361,081
2053	0	0	0	0	0	0	24,383,239	1,775,581	3,341	2,552	0	1,293,063	3,341	15,943	3,341	378,115
2054	0	0	0	0	0	0	23,906,614	1,768,254	3,227	1,608	0	1,267,019	3,227	12,431	3,227	394,904
2055	0	0	0	0	0	0	23,410,213	1,756,486	2,983	944	0	1,240,011	2,983	9,872	2,983	411,820
2056	0	0	0	0	0	0	22,897,665	1,740,890	3,266	578	0	1,212,242	3,266	8,316	3,266	429,252
2057	0	0	0	0	0	0	22,372,861	1,723,111	3,513	319	0	1,183,860	3,513	7,226	3,513	447,080

[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, 2024.*

[d] *Blended employee contribution rate of 8.62% of pay less 1.50% of pay going into the Accumulation Account.*