City Of Williamson, West Virginia
Firemen’s Pension and Relief Fund

Actuarial Valuation Report
for the Year Beginning July 1, 2017

GRS Retirement Consulting
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September 28, 2018

Ms. Meredith L. Anderson
City Clerk
142 East 4th Avenue
Williamson, WV 25661

Chief Joey M. Carey
Pension Board Secretary
City of Williamson Firemen's Pension and Relief Fund

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

Dear Ms. Anderson and Chief Carey:

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

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

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

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

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

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 assets held as of June 30, 2017, by investment category, was provided by the Fund.

Plan Provisions – A summary of the key plan provisions valued are set forth in Section VI 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 V of the report: Actuarial Assumptions and Methods.

Actuarial Assumptions – The actuarial assumptions used include a discount rate of 6.00%. The actuarial assumptions used in the actuarial valuation are set forth in Section V 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

Lance J. Weiss

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

Lance Weiss, EA, MAAA, FCA
Senior Consultant

GRS

Contents

SECTION I

ACTUARIAL VALUATION RESULTS AS OF JULY 1, 2017

Executive Summary of Valuation Results as of July 1, 2017

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

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

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

This report is based on the sponsor's election to finance benefit obligations using the Optional funding policy as defined in West Virginia Code §8-22-20 (e)(1). The sponsor changed the funding policy used to determine contributions from the Alternative funding policy to the Optional funding policy, effective January 1, 2016.

The key features of the Optional funding policy, effective for plan years beginning after January 1, 2010, are summarized below:

- The current local Plan is closed to new employees
- New employees are covered in the multiple employer statewide plan – *Municipal Police Officers and Firefighters Retirement System*
- Benefits and expenses in the closed local Plan are financed by contributions made from the following sources:
    - Employee contributions of 7.0% of pay for members hired before January 1, 2010, increased by up to 2.5% of pay if elected by the Board of Trustees of the Plan. Employees hired on or after January 1, 2010, contribute 9.5% of pay;
    - The premium tax allocation assigned to the Fund for the plan year; and
    - 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.

Executive Summary of Valuation Results as of July 1, 2017 (Continued)

The following table provides the Plan's funded status:

Funded Status as of:	July 1, 2017
Assets	$1,728,891
Actuarial Accrued Liability	$3,860,791
Unfunded Actuarial Accrued Liability	$2,131,900
Funded Ratio	44.78%

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

Employer Contributions for FYE:	June 30, 2018
Estimated Payroll for PYE 06/30/2017	$164,833
Employer Normal Cost for PYE 06/30/2017	$54,916
Employer Normal Cost Rate for PYE 06/30/2017	33.3%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2017	$163,697
State Insurance Premium Tax Allocation for FYE 06/30/2018	$73,098
Estimated Employer Contribution for FYE 06/30/2018	$145,515

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

Estimated Employer Contributions for FYE:	June 30, 2019
Estimated Payroll for PYE 06/30/2018	$154,122
Employer Normal Cost for Active Members for PYE 06/30/2018	$45,459
Employer Normal Cost Rate for PYE 06/30/2018	29.5%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2018	$146,253
State Insurance Premium Tax Allocation for FYE 06/30/2019	$68,328
Estimated Employer Contribution for FYE 06/30/2019 [a]	$123,384

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

The actual minimum employer contribution for fiscal year ending June 30, 2019, will be based on the actual payroll for the plan year ended June 30, 2018.

Executive Summary of Valuation Results as of July 1, 2017 (Continued)

Commentary on Premium Tax Allocation

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

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

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. *<u>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.</u>*

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

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 assumptions are fully disclosed in Section V of the report.

- The interest rate used to discount liabilities changed from 5.50% for the July 1, 2016 actuarial valuation to 6.00% 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 V of the report. As of July 1, 2017, the Plan's funded ratio of 45% (using a testing interest rate of 6.00% for all plans using the Optional funding policy), ratio of assets to benefits of 8.12, equity allocation of 46%, and 15-year projected funded ratio of 69%, resulted in a discount rate assumption of 6.00%.
    - The change in interest rate used to discount liabilities from 5.50% as of July 1, 2016, to 6.00% as of July 1, 2017, decreased liabilities by $269,977.

- The Fund experienced an approximate annualized return of 9.25% on the market value of assets during the plan year ended June 30, 2017, which compares to the expected annualized return of 5.50%. The difference in actual versus expected return produced an asset (gain)/loss of ($56,734).

- 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 ($157,113) due to these events.

Executive Summary of Valuation Results as of July 1, 2017 (Continued)

Optional Funding

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

Based on the closed group projections shown in Table 1, page II-1 and assuming that the sponsor makes the statutory required contributions, if all actuarial assumptions are realized in the future, including an investment return of 6.00%:

- The funded ratio is projected to increase from 45% at June 30, 2017, to 62% at June 30, 2027, to 76% at June 30, 2037, and to 100% at June 30, 2049.
- Employer contributions are expected to decrease steadily from $123,384 for the fiscal year end June 30, 2019, to $4,499 for fiscal year end June 30, 2048.

Please note that a funded ratio of only 45% at June 30, 2017, means that the Plan is underfunded.

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 fully funded is heavily dependent on the City contributing the minimum employer contribution calculated under the Optional 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 Plan.

Please understand that the minimum employer contribution calculated under the Optional funding policy as defined in West Virginia Code §8-22-20 (e)(1) is just that – the minimum that needs to be contributed each and every year. Because this is an underfunded Plan, we 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 Optional funding policy) are not made or the investment return is less than the assumption of 6.00%, the funded ratio will be lower and the cash flow strain will be higher. If another significant market downtown occurs while the plan's funded ratio is low, the plan may need to liquidate a large amount of assets in order to pay benefits which could have a further adverse effect on the funded status of the Plan.

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

- If the actual return on assets is *less* than the assumed return of 6.00%, then contributions will generally *increase*. Conversely, if the actual return is *greater* than the assumed return, contributions will generally *decrease*.
- If salaries *increase* by more than assumed, contributions could *increase*. If salaries *decrease* by more than assumed, contributions could *decrease.*
- If active members retire *sooner* than expected, contributions will generally *increase.* If active members retire *later* than expected, contributions will generally *decrease*.

Executive Summary of Valuation Results as of July 1, 2017 (Continued)

- If active members become disabled during the year, contributions could *increase*.
- If retired members die *later* than expected, contributions will *increase*. If retired members die *sooner* than expected, contributions will *decrease*.
- If the general inflation is *greater* than assumed, supplemental benefits will be greater than assumed and contributions will *increase*. Conversely, if general inflation is *lower* than assumed, contributions will *decrease*.

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

Schedule A: Summary of Key Valuation Results

Valuation Date		**July 1, 2016**		**July 1, 2017**
Valuation Interest Rate		5.50%		6.00%
Cost-of-Living Adjustment		2.75%		2.75%
Wage Inflation		3.75%		3.75%
Expected Payroll		$164,833		$154,122
Average Pay		$27,472		$30,824
Expected Benefit Payments		$233,392		$212,807
1. Actuarial Accrued Liability	No.		No.	
(a) Actives	6	$477,545	5	$443,358
(b) Retirees	7	$2,682,272	6	$2,274,949
(c) Survivors	2	$316,720	3	$436,082
(d) Disabled Members	2	$722,700	2	$706,402
(e) Deferred Vested Members	0	$0	0	$0
(f) Total	17	$4,199,237	16	$3,860,791
2. Present Value of Future Normal Costs		$882,987		$713,216
3. Present Value of Benefits (1(f) + 2)		$5,082,224		$4,574,007
4. Market Value of Assets		$1,650,739		$1,728,891
5. Unfunded Actuarial Accrued Liability (1(f) - 4)		$2,548,498		$2,131,900
6. Funded Ratio (4 / 1(f))		39.31%		44.78%
7. Net Employer Normal Cost				
(a) Normal Cost		$66,072		$56,255
(b) Administrative Expenses		$2,140		$1,865
(c) Gross Normal Cost (a + b)		$68,212		$58,120
(d) Employee Contribution Rate [a]		8.07%		8.21%
(e) Expected Employee Contributions		$13,296		$12,661
(f) Net Employer Normal Cost (c - e)		$54,916		$45,459
(% of Compensation)		33.32%		29.50%
8. Estimated Minimum Employer Contribution [b]		**FYE 2018**		**FYE 2019**
(a) Expected Payroll		$164,833		$154,122
(b) Estimated Employer Normal Cost		$54,916		$45,459
(c) Employer Normal Cost Rate		33.32%		29.50%
(d) Amortization of Unfunded Actuarial Liability		$163,697		$146,253
(e) State Insurance Premium Tax Allocation		$73,098		$68,328
(f) Estimated Employer Contribution[c] (b + d - e)		**$145,515**		**$123,384**

[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 Optional funding policy and is assumed to be made in plan year ending June 30, 2019. The actual Minimum Employer Contribution will be based on actual payroll for plan year ended June 30, 2018.*

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

Schedule B: (Gain)/Loss Analysis

Experience (Gain)/Loss for Plan Year Ended June 30, 2017		
1.	(a) Actuarial Accrued Liability as of 7/1/2016	$4,199,237
	(b) Normal Cost due 7/1/2016	$66,072
	(c) Interest on (a) and (b) to 6/30/2017	$232,775
	(d) Benefit Payments with interest to 6/30/2017	$210,203
	(e) Effect of Assumption Changes	($269,977)
	(f) Expected Liability at 7/1/2017 [(a) + (b) + (c) - (d) + (e)]	$4,017,904
	(g) Actual Liability at 7/1/2017	$3,860,791
	(h) Liability (Gain)/Loss [(g) - (f)]	**($157,113)**
2.	(a) Market Value of Assets as of 7/1/2016[a]	$1,546,857
	(b) Interest on (a) to 6/30/2017	$85,077
	(c) Contributions with interest to 6/30/2017	$250,426
	(d) Benefit Payments with interest to 6/30/2017	$210,203
	(e) Expected Assets at 6/30/2017 [(a) + (b) + (c) - (d)]	$1,672,157
	(f) Actual Assets at 7/1/2017	$1,728,891
	(g) Asset (Gain)/Loss [(e) - (f)]	**($56,734)**
3.	Total (Gain)/Loss [1(h) + 2(g)]	**($213,847)**

[a] *Adjusted Market Value of Assets as of 7/1/2016.*

SECTION II

ACTUARIAL PROJECTIONS

Actuarial Projections, Table 1

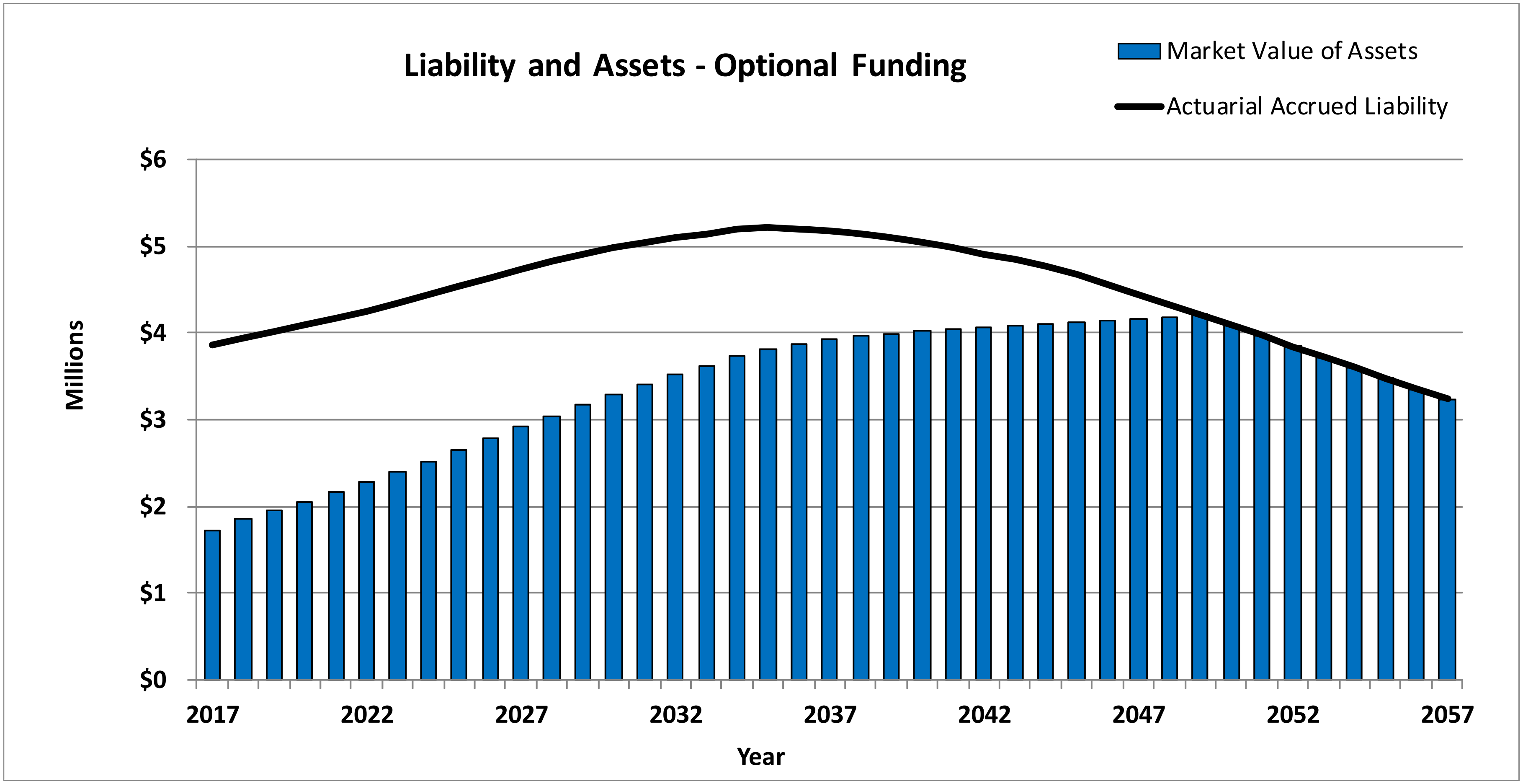
Valuation	Number		Total Assets										
Plan Year End 30-Jun	Active	Pay Status	Assets (boy)	Benefit Payments	Expenses	Employer Contributions	Member Contributions	Premium Tax Allocation Contributions	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	5	11	$1,546,857	$204,577	$0	$157,262	$15,529	$73,779	$140,041	$1,728,891	$3,860,791	$2,131,900	45%
2018	5	11	1,728,891	212,807	1,865	145,515	12,661	73,098	104,224	1,849,718	3,931,382	2,081,664	47%
2019	5	11	1,849,718	211,817	1,882	123,384	12,822	68,328	110,712	1,951,266	4,008,104	2,056,838	49%
2020	4	11	1,951,266	214,969	1,902	119,935	13,001	70,663	116,684	2,054,678	4,087,186	2,032,508	50%
2021	4	11	2,054,678	217,796	1,925	118,978	13,226	72,378	122,833	2,162,372	4,169,273	2,006,901	52%
2022	4	11	2,162,372	220,463	1,951	118,286	13,514	74,092	129,254	2,275,104	4,255,055	1,979,951	53%
2023	4	11	2,275,104	223,418	1,980	117,792	13,848	75,826	135,976	2,393,148	4,344,564	1,951,416	55%
2024	4	11	2,393,148	225,348	2,010	117,385	14,199	77,630	143,052	2,518,057	4,439,154	1,921,097	57%
2025	4	11	2,518,057	228,493	2,042	116,967	14,556	79,502	150,507	2,649,054	4,537,970	1,888,916	58%
2026	4	11	2,649,054	242,014	2,073	116,571	14,907	81,381	158,020	2,775,846	4,630,550	1,854,704	60%
2027	3	11	2,775,846	243,401	2,103	116,112	15,299	83,314	165,641	2,910,709	4,729,122	1,818,413	62%
2028	3	11	2,910,709	253,456	2,134	115,744	14,883	85,305	173,470	3,044,521	4,820,709	1,776,188	63%
2029	3	11	3,044,521	266,980	2,167	110,455	14,123	88,725	181,020	3,169,696	4,899,513	1,729,817	65%
2030	3	11	3,169,696	273,266	2,199	104,266	14,006	91,242	188,232	3,291,977	4,975,558	1,683,581	66%
2031	2	11	3,291,977	282,093	2,230	100,735	13,331	93,651	195,254	3,410,624	5,043,516	1,632,892	68%
2032	2	11	3,410,624	292,826	2,260	94,525	12,207	97,016	201,937	3,521,223	5,098,885	1,577,662	69%
2033	2	11	3,521,223	300,906	2,289	86,862	11,404	100,124	208,175	3,624,593	5,145,186	1,520,593	70%
2034	2	11	3,624,593	307,107	2,316	80,379	10,821	103,074	214,072	3,723,515	5,184,948	1,461,433	72%
2035	1	11	3,723,515	320,677	2,342	74,821	9,631	106,002	219,492	3,810,443	5,207,264	1,396,821	73%
2036	1	11	3,810,443	339,221	2,370	65,938	7,895	110,171	223,968	3,876,824	5,203,401	1,326,577	75%
2037	1	11	3,876,824	351,065	2,396	54,833	6,420	114,360	227,352	3,926,328	5,179,927	1,253,599	76%
2038	1	11	3,926,328	359,602	2,422	44,465	5,348	118,475	229,852	3,962,444	5,140,940	1,178,496	77%
2039	1	11	3,962,444	363,848	2,446	36,060	4,794	122,110	231,736	3,990,850	5,092,422	1,101,572	78%
2040	0	11	3,990,850	365,880	2,469	29,819	4,459	125,600	233,288	4,015,667	5,037,168	1,021,501	80%
2041	0	11	4,015,667	366,739	2,490	24,713	4,220	129,002	234,693	4,039,067	4,976,394	937,327	81%
2042	0	11	4,039,067	366,583	2,509	20,066	4,052	132,413	236,060	4,062,565	4,911,198	848,633	83%
2043	0	10	4,062,565	365,281	2,527	15,799	3,966	135,750	237,477	4,087,750	4,842,863	755,113	84%
2044	0	10	4,087,750	370,885	2,542	11,872	3,124	139,076	238,780	4,107,175	4,761,808	654,633	86%
2045	0	10	4,107,175	378,496	2,555	9,353	1,901	143,307	239,735	4,120,420	4,663,973	543,553	88%
2046	0	10	4,120,420	378,941	2,564	6,618	1,301	147,045	240,528	4,134,407	4,557,752	423,345	91%
2047	0	10	4,134,407	376,908	2,569	5,229	943	150,470	241,477	4,153,048	4,446,121	293,073	93%
2048	0	9	4,153,048	373,574	2,571	4,499	683	153,851	242,764	4,178,700	4,330,415	151,715	96%
2049	0	9	4,178,700	369,143	2,568	3,970	497	155,815	244,472	4,211,742	4,211,742	0	100%
2050	0	9	4,211,742	363,888	2,561	3,281	351	0	241,979	4,090,903	4,090,903	0	100%
2051	0	9	4,090,903	357,938	2,550	3,033	236	0	234,894	3,968,577	3,968,577	0	100%
2052	0	8	3,968,577	351,313	2,534	2,860	158	0	227,743	3,845,491	3,845,491	0	100%
2053	0	8	3,845,491	344,170	2,515	2,731	106	0	220,564	3,722,208	3,722,208	0	100%
2054	0	8	3,722,208	336,855	2,492	2,580	43	0	213,378	3,598,862	3,598,862	0	100%
2055	0	7	3,598,862	329,201	2,465	2,465	0	0	206,200	3,475,861	3,475,861	0	100%
2056	0	7	3,475,861	321,129	2,436	2,436	0	0	199,058	3,353,790	3,353,790	0	100%
2057	0	7	3,353,790	313,034	2,404	2,404	0	0	191,973	3,232,729	3,232,729	0	100%
2058	0	7	3,232,729	304,968	2,371	2,371	0	0	184,948	3,112,709	3,112,709	0	100%

Actuarial Projections, Table 2

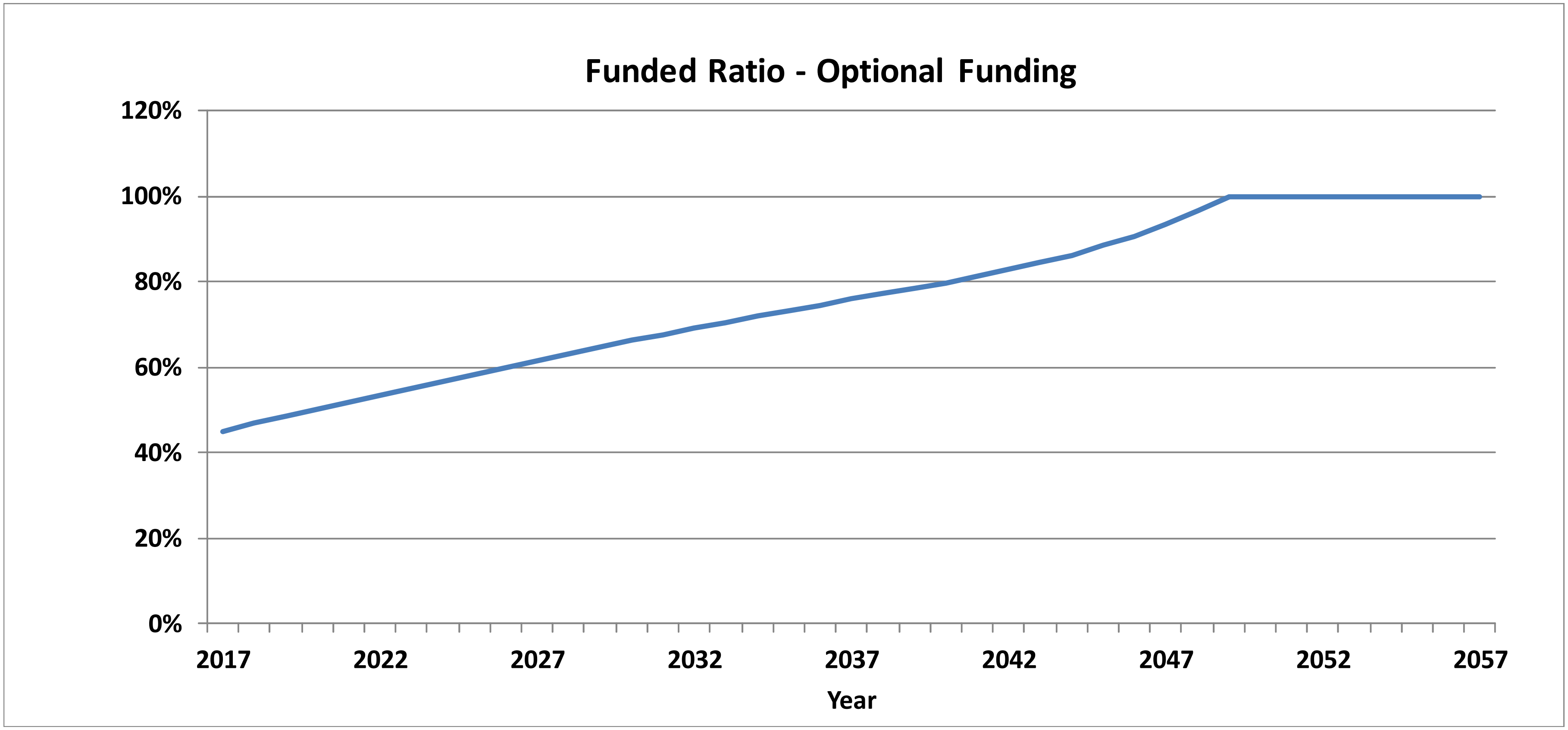
Employer Contributions

Valuation Plan Year End 30-Jun [a]	Closed Group Payroll	Active Employee Contributions	Gross Normal Cost	Net Employer Normal Cost	Amortization of UAAL	Premium Tax Allocation Contributions	Net Employer Amortization	Expenses	Employer Contribution Closed Plan	
2018	$154,122	$12,661	56,255	43,594	$146,253	$68,328	$77,925	$1,865	123,384	
2019	156,188	12,822	57,197	44,375	144,341	70,663	73,678	1,882	119,935	
2020	158,496	13,001	58,192	45,191	144,263	72,378	71,885	1,902	118,978	
2021	161,365	13,226	59,360	46,134	144,319	74,092	70,227	1,925	118,286	
2022	165,018	13,514	60,788	47,274	144,393	75,826	68,567	1,951	117,792	
2023	169,215	13,848	62,395	48,547	144,488	77,630	66,858	1,980	117,385	
2024	173,599	14,199	64,065	49,866	144,593	79,502	65,091	2,010	116,967	
2025	178,051	14,556	65,762	51,206	144,704	81,381	63,323	2,042	116,571	
2026	182,455	14,907	67,440	52,533	144,821	83,314	61,507	2,073	116,112	
2027	187,299	15,299	69,302	54,003	144,943	85,305	59,638	2,103	115,744	
2028	180,406	14,883	66,853	51,970	145,075	88,725	56,350	2,134	110,455	
2029	168,509	14,123	62,549	48,426	144,915	91,242	53,673	2,167	104,266	
2030	165,701	14,006	61,591	47,585	144,602	93,651	50,951	2,199	100,735	
2031	157,548	13,331	58,139	44,808	144,503	97,016	47,487	2,230	94,525	
2032	145,064	12,207	52,689	40,482	144,244	100,124	44,120	2,260	86,862	
2033	136,235	11,404	48,752	37,348	143,816	103,074	40,742	2,289	80,379	
2034	129,892	10,821	45,858	35,037	143,471	106,002	37,469	2,316	74,821	
2035	113,986	9,631	40,190	30,559	143,208	110,171	33,037	2,342	65,938	
2036	91,074	7,895	32,007	24,112	142,712	114,360	28,352	2,370	54,833	
2037	73,357	6,420	25,013	18,593	141,950	118,475	23,475	2,396	44,465	
2038	60,355	5,348	19,870	14,522	141,226	122,110	19,116	2,422	36,060	
2039	53,273	4,794	17,128	12,334	140,639	125,600	15,039	2,446	29,819	
2040	48,977	4,459	15,428	10,969	140,278	129,002	11,276	2,469	24,713	
2041	45,870	4,220	14,170	9,950	140,039	132,413	7,626	2,490	20,066	
2042	43,632	4,052	13,245	9,193	139,847	135,750	4,097	2,509	15,799	
2043	42,413	3,966	12,697	8,731	139,690	139,076	614	2,527	11,872	
2044	33,331	3,124	9,935	6,811	139,576	143,307	0	2,542	9,353	
2045	20,187	1,901	5,964	4,063	139,133	147,045	0	2,555	6,618	
2046	13,695	1,301	3,966	2,665	137,336	150,470	0	2,564	5,229	
2047	9,922	943	2,873	1,930	133,727	153,851	0	2,569	4,499	
2048	7,186	683	2,082	1,399	125,993	155,815	0	2,571	3,970	[b]
2049	5,227	497	1,514	1,017	0	0	0	2,568	3,281	[b]
2050	3,696	351	1,071	720	0	0	0	2,561	3,033	[b]
2051	2,481	236	719	483	0	0	0	2,550	2,860	[b]
2052	1,665	158	483	325	0	0	0	2,534	2,731	[b]
2053	1,117	106	323	217	0	0	0	2,515	2,580	[b]
2054	454	43	131	88	0	0	0	2,492	2,465	[b]
2055	0	0	0	0	0	0	0	2,465	2,436	[b]
2056	0	0	0	0	0	0	0	2,436	2,404	[b]
2057	0	0	0	0	0	0	0	2,404	2,371	[b]

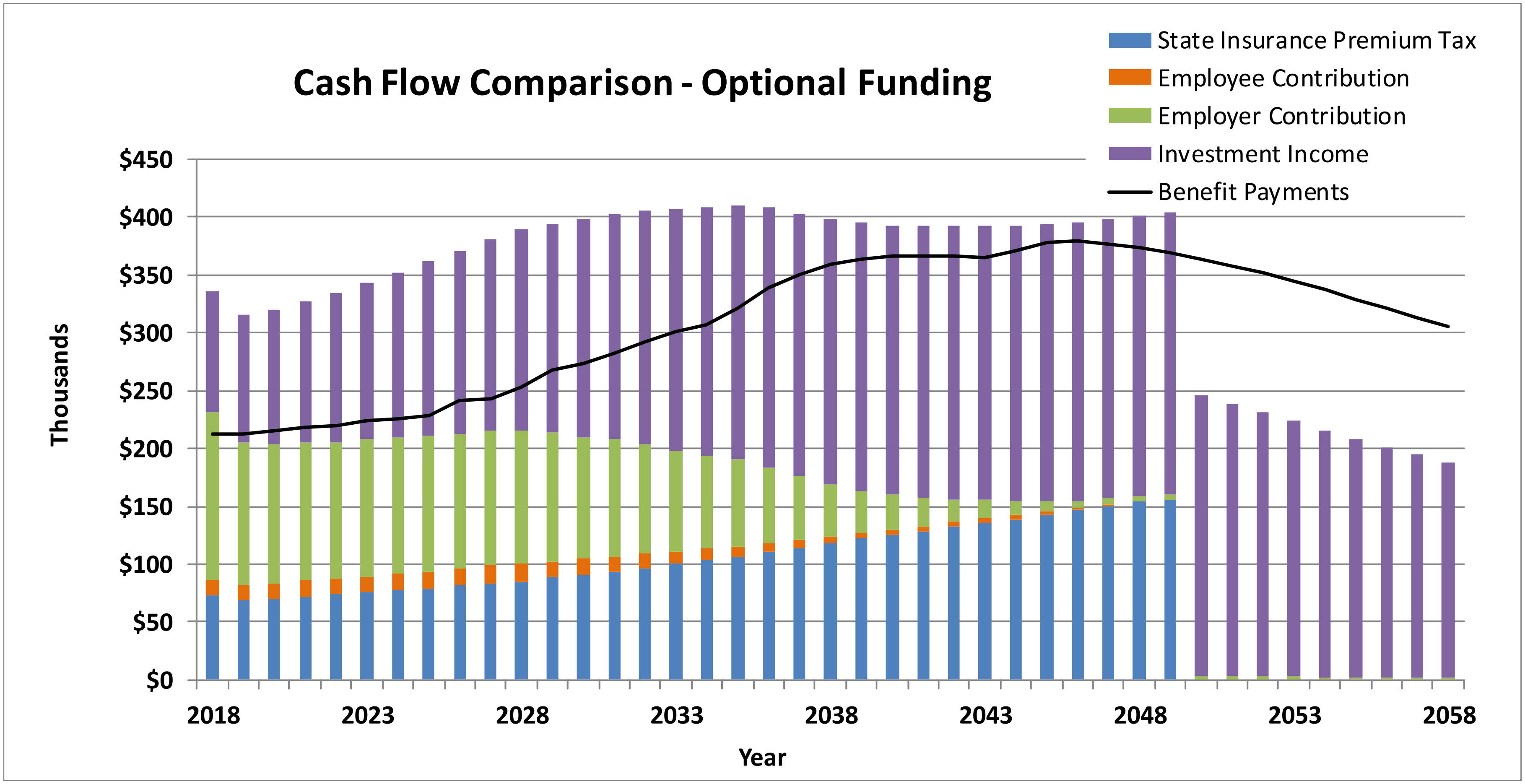
[a] *Assumes employer makes contributions for the applicable valuation plan year in the following fiscal year.*
[b] *Amount required to remain at 100% funded.*


Liability and Assets - Optional Funding
Market Value of Assets
Actuarial Accrued Liability
$6
$5
$4
$3
$2
$1
$0
Millions
2017
2022
2027
2032
2037
2042
2047
2052
2057
Year

Actuarial Projections, Graph 2



Actuarial Projections, Graph 3



SECTION III

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	5.50%	6.00%
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	$1,650,739	$1,728,891
2. Actuarial Accrued Liability	$4,199,237	$3,860,791
3. Unfunded Actuarial Accrued Liability (2 - 1)	$2,548,498	$2,131,900
4. Funded Ratio (1/2)	39%	45%
5. Expected Payroll	$164,833	$154,122
6. UAAL as Percentage of Covered Payroll (3/5)	1,546%	1,383%
Schedule of Employer Contributions [c]	**FYE 2017**	**FYE 2018**
1. Actuarially Determined Contribution		
(a) Employer Normal Cost	$54,916	$45,459
(b) Amortization of Unfunded Actuarial Accrued Liability	$127,852	$116,184
(c) Actuarially Determined Contribution (ADC) (a + b)	$182,768	$161,643
2. Employer Contribution [b]	$157,262	$145,515
3. Premium Tax Allocation	$73,779	$73,098
4. Percentage of ADC Contributed [(2 + 3)/1(c)]	126%	135%

[a] *Suggested amortization policy to comply with GASB Statement Nos. 67 and 68 Standards.*
[b] *Estimated employer contribution for fiscal year ended June 30, 2018.*
[c] *Satisfies the Actuarially Determined Contribution as defined by GASB Statement Nos. 67 and 68.*

SECTION IV

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 End of Prior Year	$1,653,426	$1,650,739
Adjustment to Market Value of Assets at Beginning of Year	$0	($103,882)
Market Value of Assets Beginning of Year	$1,653,426	$1,546,857
1. Revenue During Fiscal Year		
(a) Employee Contribution	$14,529	$15,529
(b) Governmental Contribution		
(i) From Local Government	$153,163	$50,910
(ii) From State Government	$98,636	$73,779
(iii) Reallocation from State Government	$0	$0
(iv) Total	$251,799	$124,689
(c) Earnings on Investments		
(i) Net Appreciation/(Depreciation)	($58,606)	$112,196
(ii) Bond Interest	$10,739	$9,897
(iii) Dividends	$24,314	$17,754
(iv) Net Realized Gain (Loss) on Sale/Exchange	($1,484)	$12,630
(v) Other	$0	$0
(vi) Less Investment Expense	$0	($12,436)
(vii) Total	($25,037)	$140,041
(d) Other Revenue	$0	$0
(e) Receivable Investment Income/(Expense)	$0	$0
(f) Receivable Contribution [a]		
(i) From Employee Contributions	$0	$0
(ii) From Local Government	$0	$106,352
(iii) From State Government	$0	$0
(iv) Total	$0	$106,352
(g) Total Revenue (sum of (a) through (f))	$241,291	$386,611
2. Expenditures During Fiscal Year		
(a) Benefits Paid	$229,709	$204,577
(b) Withdrawals	$0	$0
(c) Administrative Expenses	$14,269	$0
(d) Payable Benefits and Withdrawals	$0	$0
(e) Payable Administrative Expenses	$0	$0
(f) Total Expenditures (sum of (a) through (e))	$243,978	$204,577
B. Market Value of Assets End of Year [A + 1(g) - 2(f)]	$1,650,739	$1,728,891
C. Approximate Return on Assets	(2.36)%	9.25%

[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	$231,972	14%	$203,730	12%
2. Government Securities				
(a) US Treasury Bills, Notes and Bonds	$142,443		$106,272	
(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))	$142,443	8%	$106,272	6%
3. Corporate Fixed Income				
(a) US Bonds	$163,237		$161,454	
(b) US Mortgage or other Asset Backed Securities	$0		$0	
(c) US Mutual Fund Shares (Bonds)	$0		$100,656	
(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))	$163,237	10%	$262,110	15%
4. Corporate Equity				
(a) US Equity	$176,104		$45,167	
(b) US Mutual Fund Shares (Equity)	$0		$0	
(c) US Exchange Traded Funds (Equity)	$388,767		$444,293	
(d) International Equity	$318,731		$306,580	
(e) International Mutual Fund Shares (Equity)	$0		$0	
(f) International Exchange Traded Funds (Equity)	$0		$6,781	
(g) Total Corporate Equity (sum of (a) through (f))	$883,602	54%	$802,821	46%
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	$229,485		$247,606	
(e) Total Alternative Investments (sum of (a) through (d))	$229,485	14%	$247,606	15%
6. Other	$0	0%	$0	0%
7. Receivable Contributions				
(a) From Employee Contributions	$0		$0	
(b) From Local Government	$0		$106,352	
(c) From State Government	$0		$0	
(d) Total Receivable Contributions (sum of (a) through (c))	$0	0%	$106,352	6%
8. Accruals				
(a) Receivable (other than State and Local Contributions)	$0		$0	
(b) Less Payable	$0		$0	
(c) Total	$0	0%	$0	0%
Market Value of Assets End of Year [sum of (1) through (8)]	**$1,650,739**		**$1,728,891**	

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:	**6**	**7**	**2**	**0**	**2**	**17**
New Actives:						**0**
Returned to Actives Status:	1					**1**
Data Corrections/Other Changes:						**0**
Vested Terminations:						**0**
Non-Vested Terminations:	(1)					**(1)**
Disabled:						**0**
Retirements:						**0**
Deaths with Beneficiary:	(1)				1	**0**
Deaths w/o Beneficiary:		(1)				**(1)**
Expired Annuity or Stop Payment:						**0**
Net Changes:	(1)	(1)	0	0	1	**(1)**
Total Participants June 30, 2017:	**5**	**6**	**2**	**0**	**3**	**16**

Actuarial Valuation Data as of July 1, 2017

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

Attained Age	Less than 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 35	Totals	Valuation Payroll[a]
	Years of Service to Valuation Date										
Under 20											$ 0
20-24		1								1	$ 27,938
25-29											$ 0
30-34		1	1							2	$ 52,105
35-39				1						1	$ 41,539
40-44			1							1	$ 31,461
45-49											$ 0
50-54											$ 0
55-59											$ 0
60-64											$ 0
65-69											$ 0
Over 70											$ 0
Totals	0	2	2	1	0	0	0	0	0	5	$ 153,043

Averages

Age:	33.6	years
Service:	6.2	years
Annual Pay:	$30,609	[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	6	5
Total Annual Pay	$164,168	$153,043
Average Age	31.3	33.6
Average Service	5.8	6.2

Inactive Participants	July 1, 2016		July 1, 2017[a]	
Type	No.	Annual Benefit	No.	Annual Benefit
Retirees	7	$172,559	6	$146,856
Survivors	2	$24,647	3	$36,578
Disabled Members	2	$33,979	2	$34,379
Deferred Vested Members	0	$0	0	$0

[a]Data provided includes 1 non-vested member with an accumulated contributions balance of $4,293.

SECTION V

ACTUARIAL ASSUMPTIONS AND METHODS

Discount Rate

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

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

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

As of June 30, 2017	
Assets	$1,728,891
Liabilities using a 6.00% Discount Rate	$3,860,791
Funded Ratio	45%
Expected Benefit Payments	$212,807
Liquidity Ratio	8.12
Equity Exposure	46%
Projected Funded Ratio after 15 years	69%

Discount Rate	6.00%

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

The premium tax allocation is projected using the following methodology:

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

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

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

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

(5) For the plan year ending June 30, 2018, all Pension and Relief Funds reported a total of 1,717 eligible active members and 2,165 eligible retired members. The City of Williamson Firemen's Pension and Relief Fund reported 5 eligible active members and 12 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 $68,328 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 Service-based Increase:	General Inflation: 2.75% *plus* Wage Inflation Increment: 1.00% *plus* Years of Service — Increase 1 — 20.00% 2 — 6.50% 3 — 3.50% 4 — 2.75% 5-9 — 2.50% 10-29 — 2.00% 30-34 — 1.25% after 34 years of service — 0.00%
Post-retirement COLA	2.75% on first $15,000 of Annual Benefit and on the accumulated supplemental pension amounts for prior years. Assumed to be payable to all members receiving payments.
Increase in State Insurance Premium Tax Allocation	2.75% on and after year 1
Cost Method	Entry-Age-Normal, Level-Percentage-of-Pay
Amortization Policies: Alternative Plans and former Alternative Plans that selected the Conservation Policy	For GASB 67/68 Accounting: 30 – Year Closed Level-Percentage-of-Pay Amortization (from July 1, 2010 – 23 years remaining as of July 1, 2017).
Standard Plans and former Standard Plans that selected the Optional Policy	For funding and GASB 67/68 Accounting: 40-Year Closed Level-Dollar Amortization (from July 1, 1991 – 14 years remaining as of July 1, 2017)
Former Alternative Plans that selected the Optional Policy	For funding: 40-Year Closed Level-Dollar Amortization (from January 1, 2010 – 32.5 years remaining as of July 1, 2017). For GASB 67/68 Accounting: 30-Year Closed Level-Percentage-of-Pay Amortization (from July 1, 2010 – 23 years remaining as of July 1, 2017)

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

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

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

Administrative Expenses	The sponsor did not appear to provide separate investment and administrative expenses. Plan year 2018 administrative expenses assumed to be equal to 15% of all reported 2017 expenses. Future expenses assumed to increase by the general inflation assumption.
Refunds Paid	Assumes non-vested inactive members as of July 1, 2017, with accumulated member contribution balances will receive a refund of their contributions during plan year end June 30, 2018.
Data Adjustments and Assumptions	Annualized pay for one new active member based on Compensation for plan year end June 30, 2017 and Date of Hire.
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	Closed group projections assume: (i) Salaries will increase and members will decrement as specified in the actuarial assumption section. (ii) Assets grow at the assumed rate of return. (iii) The sponsor makes the statutory required contribution on a timely bases. (iv) Non-vested members with accumulated plan balances as of July 1, 2017, will receive a refund during plan year end June 30, 2018.
Decrement Timing	Mid-Year

SECTION VI

SUMMARY OF PRINCIPAL PLAN PROVISIONS

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

Employee Eligibility — All compensated employees of the Fire Department hired before January 1, 2016 are eligible to participate in the City of Williamson Firemen's Pension and Relief Fund.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Refunds — Any member who terminates from their department without receiving a retirement pension shall be refunded all deductions made from his salary, without interest.