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

Actuarial Valuation Report for the Year Beginning July 1, 2017





September 28, 2018

Ms. Meredith L. Anderson City Clerk 142 East 4th Avenue Williamson, WV 25661 Police Officer Jarrod L. Marcum Pension Board Secretary City of Williamson Policemen's Pension and Relief Fund

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

Dear Ms. Anderson and Police Officer Marcum:

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 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
- 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 5.00%. 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, FSA, EA, MAAA, FCA

alex Rivera

Senior Consultant

Lance Weiss, EA, MAAA, FCA

Laney win

Senior Consultant



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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 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 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;
 - o 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 40year 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.



The following table provides the Plan's funded status:

Funded Status as of:	July 1, 2017
Assets	\$1,289,817
Actuarial Accrued Liability	\$2,726,619
Unfunded Actuarial Accrued Liability	\$1,436,802
Funded Ratio	47.30%

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	\$177,175
Employer Normal Cost for PYE 06/30/2017	\$68,288
Employer Normal Cost Rate for PYE 06/30/2017	38.5%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2017	\$106,555
State Insurance Premium Tax Allocation for FYE 06/30/2018	\$76,084
Estimated Employer Contribution for FYE 06/30/2018	\$98,759

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	\$112,483
Employer Normal Cost for Active Members for PYE 06/30/2018	\$46,820
Employer Normal Cost Rate for PYE 06/30/2018	41.6%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2018	\$88,166
State Insurance Premium Tax Allocation for FYE 06/30/2019	\$58,021
Estimated Employer Contribution for FYE 06/30/2019 ^a	\$76,965

^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.



Commentary on Premium Tax Allocation

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

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

Commentary on Solvency Projections and Supplemental Benefits

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

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



The City of 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 remained the same for the July 1, 2016 and July 1, 2017 actuarial valuations.
 - o 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 54% (using a testing interest rate of 6.00% for all plans using the Optional funding policy), ratio of assets to benefits of 10.03, equity allocation of 0%, and 15-year projected funded ratio of 79%, resulted in a discount rate assumption of 5.00%.
 - We understand that the Plan trustees and Plan sponsor have agreed to transfer Fund assets to the West Virginia Investment Management Board. We also understand Fund assets were being held in cash as of June 30, 2017 in order to execute the asset transfer, which is expected to occur during Plan Year End June 30, 2018. We recommend maintaining the same interest rate assumption of 5.00% for the July 1, 2016 and July 1, 2017 actuarial valuations. We will evaluate adjusting the interest rate for the July 1, 2018 actuarial valuation after the asset transfer occurs.
- The Fund experienced an approximate annualized return of 0.14% 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 \$58,420.
- 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 (\$359,902) due to these events.



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 5.00%:

- The funded ratio is projected to increase from 47% at June 30, 2017, to 65% at June 30, 2026, to 78% at June 30, 2036, and 100% at June 30, 2046.
- Employer contributions are expected to decrease steadily from \$76,965 for the fiscal year end June 30, 2019, to \$1,845 for fiscal year end June 30, 2045.

Please note that a funded ratio of only 47% 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 5.00%, 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 5.00%, 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*.



- 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		5.00%		5.00%
Cost-of-Living Adjustment		2.75%		2.75%
Wage Inflation		3.75%		3.75%
Expected Payroll		\$177,175		\$112,483
Average Pay		\$29,529		\$28,121
Expected Benefit Payments		\$123,418		\$128,654
1. Actuarial Accrued Liability	No.		No.	
(a) Actives	6	\$948,033	4	\$888,855
(b) Retirees	2	\$862,556	2	\$855,257
(c) Survivors	4	\$807,175	3	\$643,114
(d) Disabled Members	2	\$347,140	2	\$339,393
(e) Deferred Vested Members	0	\$0	0	\$0
(f) Total	14	\$2,964,904	11	\$2,726,619
2. Present Value of Future Normal Costs		\$934,344		\$561,914
3. Present Value of Benefits (1(f) + 2)		\$3,899,248		\$3,288,533
4. Market Value of Assets		\$1,207,124		\$1,289,817
5. Unfunded Actuarial Accrued Liability (1(f) - 4)		\$1,757,780		\$1,436,802
6. Funded Ratio (4 / 1(f))		40.71%		47.30%
7. Net Employer Normal Cost				
(a) Normal Cost		\$81,668		\$54,828
(b) Administrative Expenses		\$991		\$603
(c) Gross Normal Cost (a + b)		\$82,659		\$55,431
(d) Employee Contribution Rate ^a		8.11%		7.66%
(e) Expected Employee Contributions		\$14,371		\$8,611
(f) Net Employer Normal Cost (c - e)		\$68,288		\$46,820
(% of Compensation)		38.54%		41.62%
8. Estimated Minimum Employer Contribution ^b		FYE 2018		FYE 2019
(a) Expected Payroll	_	\$177,175		\$112,483
(b) Estimated Employer Normal Cost		\$68,288		\$46,820
(c) Employer Normal Cost Rate		38.54%		41.62%
(d) Amortization of Unfunded Actuarial Liability		\$106,555		\$88,166
(e) State Insurance Premium Tax Allocation	_	\$76,084	_	\$58,021
(f) Estimated Employer Contribution ^c (b + d - e)		\$98,759		\$76,965

^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	\$2,964,904
(b) Normal Cost due 7/1/2016	\$81,668
(c) Interest on (a) and (b) to 6/30/2017	\$150,287
(d) Benefit Payments with interest to 6/30/2017	\$110,338
(e) Effect of Assumption Changes	\$0
(f) Expected Liability at $7/1/2017$ [(a) + (b) + (c) - (d) + (e)]	\$3,086,521
(g) Actual Liability at 7/1/2017	\$2,726,619
(h) Liability (Gain)/Loss [(g) - (f)]	(\$359,902)
2. (a) Market Value of Assets as of 7/1/2016	\$1,207,124
(b) Interest on (a) to 6/30/2017	\$60,356
(c) Contributions with interest to 6/30/2017	\$191,095
(d) Benefit Payments with interest to 6/30/2017	\$110,338
(e) Expected Assets at 6/30/2017 [(a) + (b) + (c) - (d)]	\$1,348,237
(f) Actual Assets at 7/1/2017	\$1,289,817
(g) Asset (Gain)/Loss [(e) - (f)]	\$58,420
3. Total (Gain)/Loss [1(h) + 2(g)]	(\$301,482)





ACTUARIAL PROJECTIONS

Actuarial Projections, Table 1

Valuation			Total Assets										
Plan	Nu	mber	_					Premium Tax			Actuarial		
Year End		Pay	Assets	Benefit		Employer	Member	Allocation	Investment	Assets	Accrued	Unfunded	Funded
30-Jun	Active	Status	(boy)	Payments	Expenses	Contributions	Contributions	Contributions	Income	(eoy)	Liability	Liability	Ratio
2017	4	7	\$1,207,124	\$107,647	\$0	\$113,047	\$12,700	\$62,926	\$1,667	\$1,289,817	\$2,726,619	\$1,436,802	47%
2018	3	7	1,289,817	128,654	603	98,759	8,611	76,084	65,830	1,409,843	2,787,678	1,377,835	51%
2019	3	8	1,409,843	120,218	611	76,965	8,211	58,021	71,044	1,503,255	2,857,000	1,353,745	53%
2020	3	8	1,503,255	123,759	619	68,593	8,108	61,304	75,499	1,592,380	2,925,302	1,332,922	54%
2021	3	8	1,592,380	127,363	626	66,009	8,094	62,844	79,840	1,681,178	2,993,177	1,311,999	56%
2022	3	8	1,681,178	129,139	634	64,381	8,162	64,269	84,233	1,772,451	3,063,090	1,290,639	58%
2023	3	8	1,772,451	131,021	642	63,331	8,295	65,681	88,762	1,866,857	3,135,458	1,268,601	60%
2024	2	7	1,866,857	132,583	651	62,690	8,486	67,078	93,467	1,965,345	3,211,023	1,245,678	61%
2025	2	7	1,965,345	134,191	659	62,393	8,715	68,445	98,383	2,068,431	3,290,223	1,221,792	63%
2026	2	8	2,068,431	138,624	666	62,359	8,573	69,769	103,457	2,173,299	3,367,225	1,193,926	65%
2027	2	8	2,173,299	145,573	673	58,799	8,082	72,010	108,483	2,274,427	3,436,488	1,162,061	66%
2028	2	8	2,274,427	151,344	680	52,669	7,721	74,163	113,289	2,370,245	3,499,873	1,129,628	68%
2029	1	8	2,370,245	164,546	686	47,429	6,804	76,134	117,651	2,453,031	3,546,100	1,093,069	69%
2030	1	8	2,453,031	179,220	691	38,484	5,715	79,128	121,254	2,517,700	3,571,889	1,054,189	70%
2031	1	8	2,517,700	186,579	696	29,459	5,081	81,253	124,120	2,570,337	3,586,611	1,016,274	72%
2032	1	8	2,570,337	192,599	702	22,497	4,656	83,567	126,477	2,614,232	3,592,571	978,339	73%
2033	1	8	2,614,232	195,708	708	19,450	4,528	85,458	128,564	2,655,815	3,594,612	938,797	74%
2034	1	8	2,655,815	198,074	714	18,583	4,468	87,302	130,607	2,697,987	3,593,765	895,778	75%
2035	1	8	2,697,987	199,977	720	18,086	4,447	89,271	132,704	2,741,799	3,590,590	848,791	76%
2036	1	7	2,741,799	201,503	726	17,795	4,456	91,263	134,899	2,787,982	3,585,560	797,578	78%
2037	0	8	2,787,982	210,910	732	17,660	3,532	93,257	136,999	2,827,788	3,566,050	738,262	79%
2038	0	7	2,827,788	222,543	738	14,115	2,226	96,604	138,665	2,856,116	3,527,245	671,129	81%
2039	0	7	2,856,116	227,749	744	9,180	1,593	99,366	139,883	2,877,644	3,478,005	600,361	83%
2040	0	7	2,877,644	231,442	750	6,734	1,133	102,173	140,866	2,896,358	3,420,225	523,867	85%
2041	0	7	2,896,358	233,697	755	4,964	824	104,896	141,762	2,914,351	3,355,754	441,403	87%
2042	0	7	2,914,351	235,072	760	3,819	599	107,609	142,660	2,933,206	3,285,558	352,352	89%
2043	0	7	2,933,206	235,800	765	2,988	425	110,259	143,625	2,953,939	3,210,275	256,336	92%
2044	0	7	2,953,939	235,937	769	2,349	289	112,978	144,706	2,977,555	3,130,420	152,865	95%
2045	0	7	2,977,555	235,413	772	1,845	196	115,875	145,957	3,005,243	3,046,665	41,422	99%
2046	0	6	3,005,243	234,304	775	1,503	133	42,209	145,540	2,959,549	2,959,549	0	100%
2047	0	6	2,959,549	232,914	776	976	54	0	142,232	2,869,121	2,869,121	0	100%
2048	0	6	2,869,121	230,915	776	776	0	0	137,754	2,775,960	2,775,960	0	100%
2049	0	6	2,775,960	228,104	774	774	0	0	133,165	2,681,021	2,681,021	0	100%
2050	0	6	2,681,021	224,888	771	771	0	0	128,497	2,584,630	2,584,630	0	100%
2051	0	6	2,584,630	221,279	767	767	0	0	123,767	2,487,118	2,487,118	0	100%
2052	0	5	2,487,118	217,299	761	761	0	0	118,990	2,388,809	2,388,809	0	100%
2053	0	5	2,388,809	212,970	753	753	0	0	114,181	2,290,020	2,290,020	0	100%
2054	0	5	2,290,020	208,313	744	744	0	0	109,357	2,191,064	2,191,064	0	100%
2055	0	5	2,191,064	203,355	733	733	0	0	104,531	2,092,240	2,092,240	0	100%
2056	0	4	2,092,240	198,120	722	722	0	0	99,719	1,993,839	1,993,839	0	100%
2057	0	4	1,993,839	192,641	708	709	0	0	94,935	1,896,133	1,896,133	0	100%
2058	0	4	1,896,133	186,939	694	694	0	0		1,799,384	1,799,384	0	100%



Actuarial Projections, Table 2

Employer Contributions

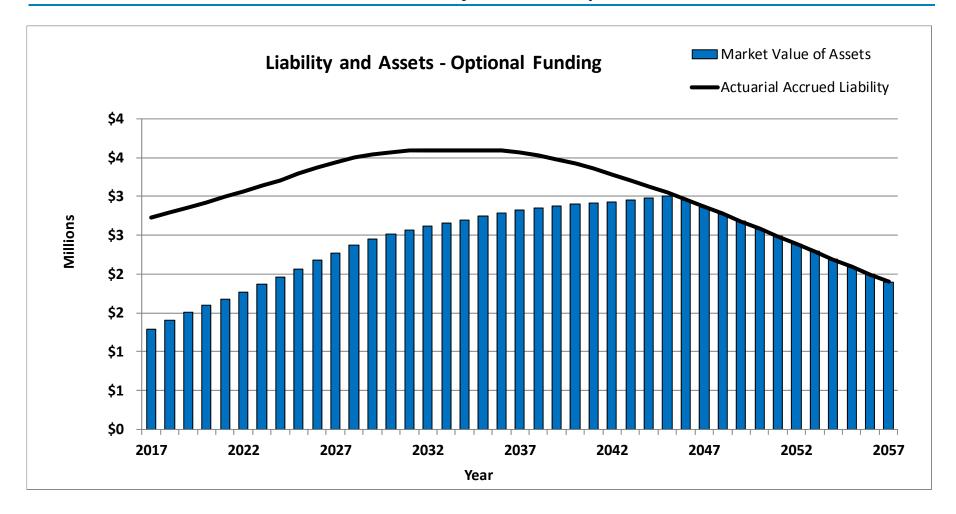
Valuation Plan	Closed	Active				Premium Tax			Employer
Year End	Group	Employee	Gross	Net Employer	Amortization	Allocation	Net Employer		Contribution
30-Jun ^a	Payroll	Contributions	Normal Cost	Normal Cost	of UAAL	Contributions	Amortization	Expenses	Closed Plan
2018	\$112,483	\$8,611	54,828	46,217	\$88,166	\$58,021	\$30,145	\$603	76,965
2019	106,707	8,211	51,845	43,634	85,651	61,304	24,347	611	68,593
2020	105,170	8,108	51,020	42,912	85,322	62,844	22,478	619	66,009
2021	104,908	8,094	50,866	42,772	85,253	64,269	20,984	626	64,381
2022	105,786	8,162	51,301	43,139	85,239	65,681	19,558	634	63,331
2023	107,516	8,295	52,157	43,862	85,264	67,078	18,186	642	62,690
2024	109,953	8,486	53,355	44,869	85,318	68,445	16,873	651	62,393
2025	112,865	8,715	54,794	46,079	85,391	69,769	15,622	659	62,359
2026	110,478	8,573	53,231	44,658	85,485	72,010	13,475	666	58,799
2027	103,096	8,082	48,853	40,771	85,387	74,163	11,224	673	52,669
2028	97,570	7,721	45,514	37,793	85,090	76,134	8,956	680	47,429
2029	84,092	6,804	38,892	32,088	84,838	79,128	5,710	686	38,484
2030	68,143	5,715	31,369	25,654	84,367	81,253	3,114	691	29,459
2031	58,690	5,081	26,644	21,563	83,804	83,567	237	696	22,497
2032	52,223	4,656	23,404	18,748	83,414	85,458	0	702	19,450
2033	49,985	4,528	22,403	17,875	83,136	87,302	0	708	18,583
2034	48,720	4,468	21,840	17,372	82,847	89,271	0	714	18,086
2035	48,014	4,447	21,522	17,075	82,381	91,263	0	720	17,795
2036	47,716	4,456	21,390	16,934	81,673	93,257	0	726	17,660
2037	37,735	3,532	16,915	13,383	80,665	96,604	0	732	14,115
2038	23,798	2,226	10,668	8,442	78,898	99,366	0	738	9,180
2039	16,913	1,593	7,583	5,990	76,262	102,173	0	744	6,734
2040	11,924	1,133	5,347	4,214	73,075	104,896	0	750	4,964
2041	8,670	824	3,888	3,064	68,914	107,609	0	755	3,819
2042	6,306	599	2,827	2,228	63,446	110,259	0	760	2,988
2043	4,478	425	2,009	1,584	56,105	112,978	0	765	2,349
2044	3,042	289	1,365	1,076	46,024	115,875	0	769	1,845
2045	2,066	196	927	731	31,693	42,209	0	772	1,503
2046	1,395	133	626	493	0	0	0	775	976
2047	565	54	252	198	0	0	0	776	776
2048	0	0	0	0	0	0	0	776	774
2049	0	0	0	0	0	0	0	774	771
2050	0	0	0	0	0	0	0	771	767
2051	0	0	0	0	0	0	0	767	761
2052	0	0	0	0	0	0	0	761	753
2053	0	0	0	0	0	0	0	753	744
2054	0	0	0	0	0	0	0	744	733
2055	0	0	0	0	0	0	0	733	722
2056	0	0	0	0	0	0	0	722	709
2057	0	0	0	0	0	0	0	708	694

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



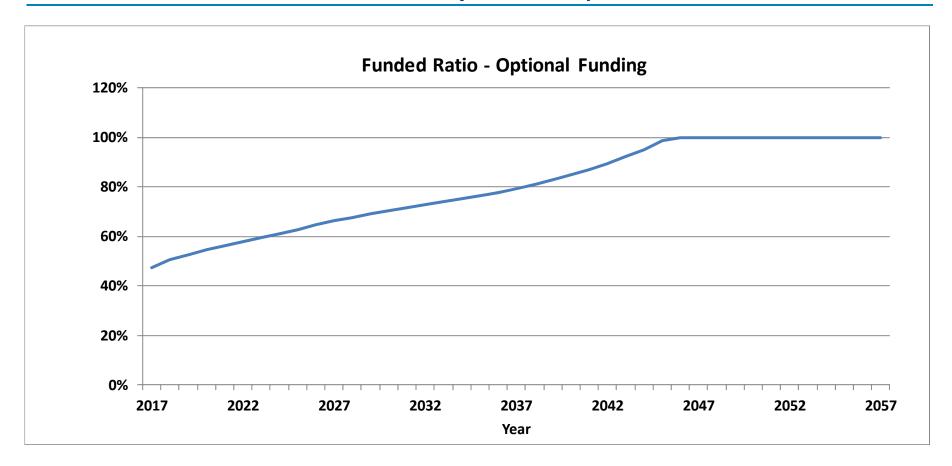
^b Amount required to remain at 100% funded.

Actuarial Projections, Graph 1



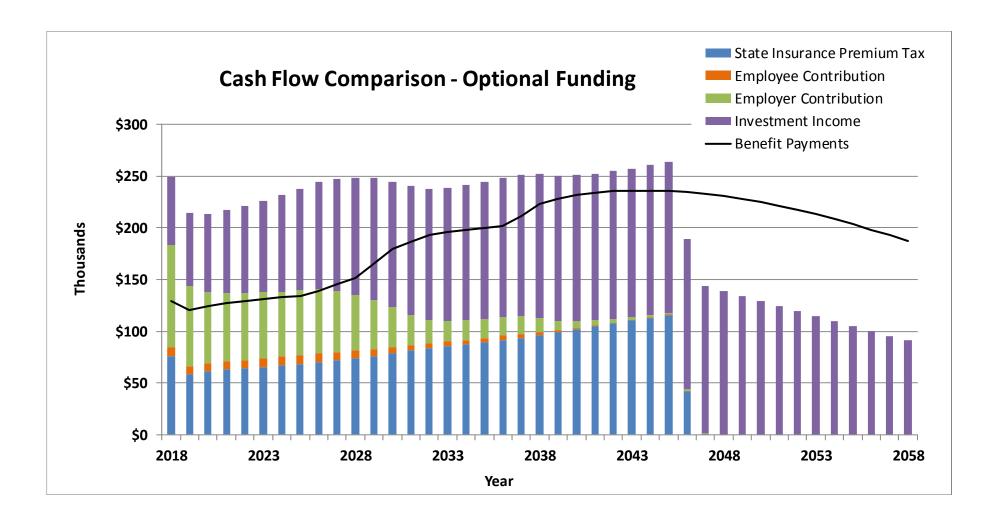


Actuarial Projections, Graph 2





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	5.00%	5.00%
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	\$1,207,124	\$1,289,817
2. Actuarial Accrued Liability	\$2,964,904	\$2,726,619
3. Unfunded Actuarial Accrued Liability (2 - 1)	\$1,757,780	\$1,436,802
4. Funded Ratio (1/2)	41%	47%
5. Expected Payroll	\$177,175	\$112,483
6. UAAL as Percentage of Covered Payroll (3/5)	992%	1,277%
Schedule of Employer Contributions ^c	FYE 2017	FYE 2018
Actuarially Determined Contribution		
(a) Employer Normal Cost	\$68,288	\$46,820
(b) Amortization of Unfunded Actuarial Accrued Liability	\$83,768	\$71,042
(c) Actuarially Determined Contribution (ADC) (a + b)	\$152,056	\$117,862
2. Employer Contribution ^b	\$113,047	\$98,759
3. Premium Tax Allocation	\$62,926	\$76,084
4. Percentage of ADC Contributed [(2 + 3)/1(c)]	116%	148%

^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 Beginning of Year Adjustment to Market Value of Assets at Beginning of Year Market Value of Assets Beginning of Year	\$1,140,291 \$0 \$1,140,291	\$1,207,124 \$0 \$1,207,124
1. Revenue During Fiscal Year		
(a) Employee Contribution (b) Governmental Contribution	\$13,142	\$12,700
(i) From Local Government (ii) From State Government (iii) Reallocation from State Government (iv) Total (c) Earnings on Investments	\$103,331 \$74,123 \$0 \$177,454	\$21,250 \$62,926 \$0 \$84,176
 (i) Net Appreciation/(Depreciation) (ii) Bond Interest (iii) Dividends (iv) Net Realized Gain (Loss) on Sale/Exchange (v) Other (vi) Less Investment Expense 	\$0 \$0 \$0 \$0 \$1,669 \$0	\$0 \$0 \$0 \$0 \$1,667 \$0
(vii) Total (d) Other Revenue (e) Receivable Investment Income/(Expense)	\$1,669 \$0 \$0	\$1,667 \$0 \$0
 (f) Receivable Contribution ^a (i) From Employee Contributions (ii) From Local Government (iii) From State Government (iv) Total (g) Total Revenue (sum of (a) through (f)) 	\$0 \$0 \$0 \$0 \$192,265	\$0 \$91,797 \$0 \$91,797 \$190,340
2. Expenditures During Fiscal Year		
 (a) Benefits Paid (b) Withdrawals (c) Administrative Expenses (d) Payable Benefits and Withdrawals (e) Payable Administrative Expenses (f) Total Expenditures (sum of (a) through (e)) 	\$122,898 \$1,570 \$964 \$0 \$0 \$125,432	\$107,647 \$0 \$0 \$0 \$0 \$0 \$107,647
B. Market Value of Assets End of Year [A + 1(g) - 2(f)]	\$1,207,124	\$1,289,817
C. Approximate Return on Assets	0.06%	0.14%

^a Receivable contributions for each respective plan year ending.



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

2. Government Securities (a) US Treasury Bills, Notes and Bonds (b) US State and Local Governmental Debt Securities (c) Foreign Governmental Debt Securities (d) Other (e) Total Governmental Debt Securities (sum of (a) through (d)) 3. Corporate Fixed Income (a) US Bonds (b) US Mortgage or other Asset Backed Securities (c) US Mutual Fund Shares (Bonds) (d) US Exchange Traded Funds (Bonds) (e) International Bonds (f) International Mutual Fund Shares (Bonds) (g) International Exchange Traded Funds (Bonds) (g) International Exchange Traded Funds (Bonds) (g) US Equity (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Mutual Fund Shares (Equity) (d) US Exchange Traded Funds (Bonds) (e) International Mutual Fund Shares (Bonds) (g) International Mutual Fund Shares (Equity) (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Exchange Traded Funds (Equity) (d) International Exchange Traded Funds (Bonds) (e) International Exchange Traded Funds (Funds) (e) International Exchange Traded Funds (Funds) (g) Total Corporate Equity (sum of (a) through (f)) (e) International Exchange Traded Funds (Equity) (f) International Exchange Traded Funds (Equity) (g) Total Corporate Equity (sum of (a) through (f)) (e) Hother Equity Fund (f) International Exchange Traded Funds (Equity) (g) Total Corporate Equity (sum of (a) through (f)) (f) Private Equity Fund (g) Total Alternative Investments (g) Real Estate Investments (g) Real Estate Investments (g) Total Alternative Investments (g) Total Alternative Investments (g) Total Alternative Investments (g) Total Corporate Equity Involves (g) Total Sounds (g) Sounds	Dian Voor Ending	lune 20, 2016		luno 20 2017	
2. Government Securities (a) US Treasury Bills, Notes and Bonds (b) US State and Local Governmental Debt Securities (c) Foreign Governmental Debt Securities (d) Other (e) Total Government Debt Securities (e) Total Government Securities (sum of (a) through (d)) (e) Total Government Securities (sum of (a) through (d)) (b) US Mortgage or other Asset Backed Securities (c) US Mutual Fund Shares (Bonds) (d) US Exchange Traded Funds (Bonds) (e) International Bonds (f) International Bonds (g) International Bonds (g) International Exchange Traded Funds (Bonds) (g) International Exchange Traded Funds (Bonds) (g) US Sechange Traded Funds (Bonds) (g) US Exchange Traded Funds (Bonds) (g) US Exchange Traded Funds (Bonds) (g) International Exchange Traded Funds (Bonds) (g) International Exchange Traded Funds (Bonds) (g) US Exchange Traded Funds (Equity) (g) US Mutual Fund Shares (Equity) (g) US Exchange Traded Funds (Equity) (g) International Exchange Traded Funds (Equity) (g) International Exchange Traded Funds (Equity) (g) Total Corporate Equity (sum of (a) through (f)) (g) Total Corporate Equity (sum of (a) through (f)) (g) Total Corporate Equity (sum of (a) through (f)) (g) Private Equity Fund (g) Exchange Traded Funds (Equity) (g) Total Alternative Investments (g) Real Estate Investments (g) Real Estate Investments (sum of (a) through (d)) (g) From Exchange Traded Funds (Equity) (g) Total Alternative Investments (sum of (a) through (c)) (g) Total Alternative Investments (g) Total Alternative Investments (g) Total Alternative Investments (g) Receivable Contributions (g) From State Government (g) Total Alternative Investments (g) Receivable (other than State and Local Contributions) (g) Exchange Traded Funds (Equity (s) (g) Total Local Government (g) Total Exchange Traded Funds (g) Total Exchange Traded F	Plan Year Ending	June 30, 2016			
(a) US Treasury Bills, Notes and Bonds (b) US State and Local Governmental Debt Securities (c) Foreign Governmental Debt Securities (d) Other (e) Total Governmental Debt Securities (d) Other (e) Total Government Securities (sum of (a) through (d)) 3. Corporate Fixed Income (a) US Bonds (b) US Mortgage or other Asset Backed Securities (c) US Mutual Fund Shares (Bonds) (d) US Exchange Traded Funds (Bonds) (e) International Bonds (f) International Bonds (g) International Mutual Fund Shares (Bonds) (g) International Exchange Traded Funds (Bonds) (g) International Exchange Traded Funds (Bonds) (g) US Exchange Traded Funds (Bonds) (g) US Exchange Traded Funds (Bonds) (g) International Mutual Fund Shares (Bonds) (g) International Exchange Traded Funds (Bonds) (h) Total Corporate Fixed Income (sum of (a) through (g)) 4. Corporate Equity (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Exchange Traded Funds (Equity) (d) International Equity (e) International Equity (e) International Equity (f) International Equity (g) Total Corporate Equity (sum of (a) through (f)) 5. Alternative Investments (a) Real Estate Investment Trust (b) Private Equity Fund (c) Hedge Funds (d) Other Alternative Investments (a) Other Alternative Investments (a) Other Alternative Investments (b) Private Equity Fund (c) Other Alternative Investments (a) Other Alternative Investments (b) From Local Government (c) Total Alternative Investments (sum of (a) through (c)) 5. Accurals (a) Receivable Contributions (sum of (a) through (c)) (b) Less Payable (c) Total (c) Ess Payable (d) Total Receivable Contributions (sum of (a) through (c)) (e) International Security States and Local Contributions (b) Less Payable (c) Total (c) Hessels End of Year Market Value of Assets End of Year	1. Cash and Short-term Investments	\$1,207,124	100%	\$1,198,020	93%
(b) US State and Local Governmental Debt Securities (c) Foreign Governmental Debt Securities (d) Other (d) Other (e) Total Government Securities (sum of (a) through (d)) 3. Corporate Fixed Income (a) US Bonds (b) US Mortgage or other Asset Backed Securities (c) US Mutual Fund Shares (Bonds) (d) US Exchange Traded Funds (Bonds) (e) International Buntual Fund Shares (Bonds) (g) International Buntual Fund Shares (Bonds) (g) International Exchange Traded Funds (Bonds) (h) Total Corporate Fixed income (sum of (a) through (g)) 4. Corporate Equity (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Exchange Traded Funds (Equity) (d) International Equity (e) International Equity (f) International Equity (g) So (g) Total Corporate Equity (sum of (a) through (f)) 5. Alternative Investments (a) Real Estate Investment Trust (b) Private Equity Fund (c) Hedge Funds (d) Other Alternative Investments (e) Total Alternative Investments (a) From Local Government (b) Private Equity Fund (c) Hedge Funds (d) Other Alternative Investments (a) From Local Government (b) From Local Government (c) Total Alternative Investment (a) From Local Government (b) From Local Government (c) Total Receivable Contributions (sum of (a) through (c)) 8. Accruals (a) Receivable (other than State and Local Contributions) (b) Less Payable (c) Total (d) Other Assets End of Year Market Value of Assets End of Year	2. Government Securities				
(c) Foreign Governmental Debt Securities (d) Other (e) Total Government Securities (sum of (a) through (d)) 50 0%	(a) US Treasury Bills, Notes and Bonds	\$0		\$0	
(d) Other (e) Total Government Securities (sum of (a) through (d)) 3. Corporate Fixed Income (a) US Bonds (b) US Mortgage or other Asset Backed Securities (c) US Mutual Fund Shares (Bonds) (d) US Exchange Traded Funds (Bonds) (f) International Bonds (g) International Mutual Fund Shares (Bonds) (g) International Exchange Traded Funds (Bonds) (h) Total Corporate Fixed Income (sum of (a) through (g)) (a) US Equity (a) US Equity (a) US Equity (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Exchange Traded Funds (Equity) (d) International Exchange Traded Funds (Equity) (e) US Exchange Traded Funds (Equity) (f) International Equity (g) US Exchange Traded Funds (Equity) (g) Total Corporate Equity (g) US Exchange Traded Funds (Equity) (g) Total Corporate Equity (g) US Exchange Traded Funds (Equity) (g) Total Corporate Equity (g) US Exchange Traded Funds (Equity) (g) Total Corporate Equity (sum of (a) through (f)) (g) Total Corporate Equity (sum of (a) through (f)) (g) Total Corporate Equity (sum of (a) through (f)) (g) Total Corporate Equity Fund (g) Real Estate Investment (g) Real Estate Investments (g) Real Estate Investments (g) Real Estate Investments (g) Total Alternative Investments (g) Total Alternative Investments (g) Total Alternative Investments (g) From Local Government (g) Total Receivable Contributions (a) From Exployee Contributions (sum of (a) through (c)) (b) Less Payable (c) Total (c) Less Payable (c) Total (d) Market Value of Assets End of Year	(b) US State and Local Governmental Debt Securities	\$0		\$0	
(e) Total Government Securities (sum of (a) through (d)) \$0 0% \$0 0% 3. Corporate Fixed Income (a) US Bonds \$0 \$0 \$0 (b) US Mortgage or other Asset Backed Securities \$0 \$0 \$0 (c) US Mutual Fund Shares (Bonds) \$0 \$0 \$0 (d) US Exchange Traded Funds (Bonds) \$0 \$0 \$0 (e) International Mutual Fund Shares (Bonds) \$0 \$0 \$0 (g) International Exchange Traded Funds (Bonds) \$0 \$0 \$0 (g) International Exchange Traded Funds (Bonds) \$0 \$0 \$0 (h) Total Corporate Equity \$0 \$0 \$0 (a) US Equity \$0 \$0 \$0 (b) US Mutual Fund Shares (Equity) \$0 \$0 \$0 (c) US Exchange Traded Funds (Equity) \$0 \$0 \$0 (d) International Equity \$0 \$0 \$0 (e) International Equity \$0 \$0 \$0 (e) International Equity (sum of (a) through (f)) \$0 \$0 \$0 </td <td>(c) Foreign Governmental Debt Securities</td> <td>\$0</td> <td></td> <td>\$0</td> <td></td>	(c) Foreign Governmental Debt Securities	\$0		\$0	
3. Corporate Fixed Income (a) US Bonds (b) US Mortgage or other Asset Backed Securities (c) US Mutual Fund Shares (Bonds) (d) US Exchange Traded Funds (Bonds) (e) International Bonds (f) International Mutual Fund Shares (Bonds) (g) International Mutual Fund Shares (Bonds) (g) International Exchange Traded Funds (Bonds) (g) International Exchange Traded Funds (Bonds) (h) Total Corporate Fixed Income (sum of (a) through (g)) 4. Corporate Equity (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Exchange Traded Funds (Equity) (d) International Equity (e) International Equity (f) International Equity (g) So (g) International Equity (h) International Equity (h) International Equity (h) International Equity (g) So (g) Total Corporate Equity (sum of (a) through (f)) 5. Alternative Investments (a) Real Estate Investment Trust (a) Real Estate Investment Trust (a) Real Estate Investment Trust (b) Private Equity Fund (c) Hedge Funds (d) Other Alternative Investments (a) Total Alternative Investments (a) From Employee Contributions (a) From Employee Contributions (a) From Employee Contributions (s) From Local Government (c) Total Receivable Contributions (sum of (a) through (c)) (b) Less Payable (c) Total (c) Total (d) Ods So (d) So	(d) Other	\$0		\$0	
(a) US Bonds (b) US Mortgage or other Asset Backed Securities (c) US Mutual Fund Shares (Bonds) (d) US Exchange Traded Funds (Bonds) (e) International Bonds (f) International Bonds (g) International Butual Fund Shares (Bonds) (g) International Mutual Fund Shares (Bonds) (g) International Exchange Traded Funds (Bonds) (h) Total Corporate Fixed Income (sum of (a) through (g)) 4. Corporate Equity (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Exchange Traded Funds (Equity) (d) International Equity (e) International Equity (f) International Equity (g) So (g) International Equity (h) International Exchange Traded Funds (Equity) (g) Total Corporate Equity (sum of (a) through (f)) 5. Alternative Investments (a) Real Estate Investment Trust (b) Private Equity Fund (c) Hedge Funds (d) Other Alternative Investments (e) Total Alternative Investments (sum of (a) through (d)) (e) Total Alternative Investments (s) Fon So (d) Other So (o) So (o	(e) Total Government Securities (sum of (a) through (d))	\$0	0%	\$0	0%
(b) US Mortgage or other Asset Backed Securities	3. Corporate Fixed Income				
(c) US Mutual Fund Shares (Bonds) (d) US Exchange Traded Funds (Bonds) (e) International Bonds (f) International Mutual Fund Shares (Bonds) (g) International Mutual Fund Shares (Bonds) (g) International Exchange Traded Funds (Bonds) (g) International Exchange Traded Funds (Bonds) (h) Total Corporate Fixed Income (sum of (a) through (g)) 4. Corporate Equity (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Exchange Traded Funds (Equity) (d) International Equity (e) INS Mutual Fund Shares (Equity) (f) International Equity (g) Total Corporate Equity (sum of (a) through (f)) (g) Total Corporate Equity (sum of (a) through (f)) 5. Alternative Investments (a) Real Estate Investment Trust (b) Private Equity Fund (c) Hedge Funds (d) Other Alternative Investments (a) Real Estate Investments (sum of (a) through (d)) (e) Total Alternative Investments (sum of (a) through (d)) 6. Other 7. Receivable Contributions (a) From Employee Contributions (b) From State Government (c) From State Government (d) Total Receivable Contributions (sum of (a) through (c)) (e) Receivable (other than State and Local Contributions) (a) Receivable (other than State and Local Contributions) (b) Less Payable (c) Total Market Value of Assets End of Year \$1,207,124 \$1,289,817	(a) US Bonds	\$0		\$0	
(d) US Exchange Traded Funds (Bonds) \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	(b) US Mortgage or other Asset Backed Securities	\$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)) \$0 \$0 4. Corporate Equity \$0 \$0 (a) US Equity \$0 \$0 (b) US Mutual Fund Shares (Equity) \$0 \$0 (c) US Exchange Traded Funds (Equity) \$0 \$0 (d) International Equity \$0 \$0 (e) International Mutual Fund Shares (Equity) \$0 \$0 (d) International Equity \$0 \$0 (e) International Equity (sum of (a) through (f)) \$0 \$0 (f) International Exchange Traded Funds (Equity) \$0 \$0 (g) Total Corporate Equity (sum of (a) through (f)) \$0 \$0 (g) Total Equity (sum of (a) through (f)) \$0 \$0 (a) Real Estate Investments \$0 \$0 (a) Real Estate Investment Trust \$0 \$0 (b) Private Equity Fund \$0 \$0 (c) Hedge Funds \$0 \$0 (d) Other Alt	(c) US Mutual Fund Shares (Bonds)	\$0		\$0	
(f) International Mutual Fund Shares (Bonds) \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	(d) US Exchange Traded Funds (Bonds)	\$0		\$0	
(g) International Exchange Traded Funds (Bonds) \$0 0%	(e) International Bonds	\$0		\$0	
(h) Total Corporate Fixed Income (sum of (a) through (g)) \$0 0% \$	(f) International Mutual Fund Shares (Bonds)	\$0		\$0	
4. Corporate Equity (a) US Equity (b) US Mutual Fund Shares (Equity) (c) US Exchange Traded Funds (Equity) (d) International Equity (e) International Exchange Traded Funds (Equity) (f) International Exchange Traded Funds (Equity) (g) Total Corporate Equity (sum of (a) through (f)) 5. Alternative Investments (a) Real Estate Investment Trust (b) Private Equity Fund (c) Hedge Funds (d) Other Alternative Investments (sum of (a) through (d)) 6. Other 7. Receivable Contributions (a) From Employee Contributions (b) From Local Government (c) From State Government (d) Total Receivable Contributions (sum of (a) through (c)) 8. Accruals (a) Receivable (other than State and Local Contributions) (b) Less Payable (c) Total Market Value of Assets End of Year	(g) International Exchange Traded Funds (Bonds)	\$0		\$0	
(a) US Equity \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	(h) Total Corporate Fixed Income (sum of (a) through (g))	\$0	0%	\$0	0%
(b) US Mutual Fund Shares (Equity) \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	4. Corporate Equity				
(c) US Exchange Traded Funds (Equity) \$0 \$0 (d) International Equity \$0 \$0 (e) International Mutual Fund Shares (Equity) \$0 \$0 (f) International Exchange Traded Funds (Equity) \$0 \$0 (g) Total Corporate Equity (sum of (a) through (f)) \$0 \$0 5. Alternative Investments \$0 \$0 (a) Real Estate Investment Trust \$0 \$0 (b) Private Equity Fund \$0 \$0 (c) Hedge Funds \$0 \$0 (d) Other Alternative Investments \$0 \$0 (e) Total Alternative Investments (sum of (a) through (d)) \$0 \$0 (e) Total Alternative Investments (sum of (a) through (d)) \$0 \$0 (e) Total Alternative Investments \$0 \$0 \$0 (e) Total Alternative Investments (sum of (a) through (d)) \$0 \$0 \$0 6. Other \$0 \$0 \$0 \$0 7. Receivable Contributions \$0 \$0 \$0 (b) From Local Government \$0 \$0 \$0 (c) From State Government \$0 \$0 \$0	(a) US Equity	\$0		\$0	
(d) International Equity \$0 \$0 (e) International Mutual Fund Shares (Equity) \$0 \$0 (f) International Exchange Traded Funds (Equity) \$0 \$0 (g) Total Corporate Equity (sum of (a) through (f)) \$0 \$0 5. Alternative Investments \$0 \$0 (a) Real Estate Investment Trust \$0 \$0 (b) Private Equity Fund \$0 \$0 (c) Hedge Funds \$0 \$0 (d) Other Alternative Investments \$0 \$0 (e) Total Alternative Investments (sum of (a) through (d)) \$0 \$0 6. Other \$0 \$0 \$0 7. Receivable Contributions \$0 \$0 \$0 (a) From Employee Contributions \$0 \$91,797 \$0 (c) From State Government \$0 \$91,797 \$0 (c) From State Government \$0 \$0 \$91,797 7% 8. Accruals (a) Receivable Contributions (sum of (a) through (c)) \$0 \$0 \$91,797 7% 8. Accruals (a) Receivable (other than State and Local Contributions) \$0 \$0 \$0 \$0	(b) US Mutual Fund Shares (Equity)	\$0		\$0	
(e) International Mutual Fund Shares (Equity) \$0 \$0 (f) International Exchange Traded Funds (Equity) \$0 \$0 (g) Total Corporate Equity (sum of (a) through (f)) \$0 0% \$0 0% 5. Alternative Investments \$0	(c) US Exchange Traded Funds (Equity)	\$0		\$0	
(f) International Exchange Traded Funds (Equity) \$0 \$0 (g) Total Corporate Equity (sum of (a) through (f)) \$0 \$0 0% 5. Alternative Investments \$0 \$0 \$0 (a) Real Estate Investment Trust \$0 \$0 \$0 (b) Private Equity Fund \$0 \$0 \$0 (c) Hedge Funds \$0 \$0 \$0 (d) Other Alternative Investments \$0 \$0 \$0 (e) Total Alternative Investments (sum of (a) through (d)) \$0 \$0 \$0 6. Other \$0 \$0 \$0 \$0 7. Receivable Contributions \$0 \$0 \$0 \$0 (a) From Employee Contributions \$0 \$0 \$0 \$0 (b) From Local Government \$0 \$0 \$0 \$0 (c) From State Government \$0 \$0 \$91,797 7% 8. Accruals \$0 \$0 \$91,797 7% 8. Accruals \$0 \$0 \$0 \$0 (b) Less Payable \$0 \$0 \$0 \$0 (c) Total	(d) International Equity	\$0		\$0	
(g) Total Corporate Equity (sum of (a) through (f)) \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 0% \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	(e) International Mutual Fund Shares (Equity)	\$0		\$0	
5. Alternative Investments (a) Real Estate Investment Trust (b) Private Equity Fund (c) Hedge Funds (d) Other Alternative Investments (e) Total Alternative Investments (sum of (a) through (d)) 6. Other 7. Receivable Contributions (a) From Employee Contributions (b) From Local Government (c) From State Government (d) Total Receivable Contributions (sum of (a) through (c)) 8. Accruals (a) Receivable (other than State and Local Contributions) (b) Less Payable (c) Total So 0% \$0 0%	(f) International Exchange Traded Funds (Equity)	\$0		\$0	
(a) Real Estate Investment Trust \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	(g) Total Corporate Equity (sum of (a) through (f))	\$0	0%	\$0	0%
(b) Private Equity Fund \$0 \$0 (c) Hedge Funds \$0 \$0 (d) Other Alternative Investments \$0 \$0 (e) Total Alternative Investments (sum of (a) through (d)) \$0 0% \$0 0% 6. Other \$0 0% \$0 0% 7. Receivable Contributions \$0 \$0 \$0 0% (a) From Employee Contributions \$0 \$91,797 \$0 \$91,797 \$0 \$0 \$91,797 \$0	5. Alternative Investments				
(c) Hedge Funds \$0 \$0 (d) Other Alternative Investments \$0 \$0 (e) Total Alternative Investments (sum of (a) through (d)) \$0 0% \$0 0% 6. Other \$0 0% \$0 0% 7. Receivable Contributions \$0 \$0 \$0 \$0 (a) From Employee Contributions \$0 \$91,797 \$0 \$91,797 \$0 </td <td>(a) Real Estate Investment Trust</td> <td>\$0</td> <td></td> <td>\$0</td> <td></td>	(a) Real Estate Investment Trust	\$0		\$0	
(d) Other Alternative Investments (e) Total Alternative Investments (sum of (a) through (d)) 6. Other 7. Receivable Contributions (a) From Employee Contributions (b) From Local Government (c) From State Government (d) Total Receivable Contributions (sum of (a) through (c)) 8. Accruals (a) Receivable (other than State and Local Contributions) (b) Less Payable (c) Total 90 90 \$0 \$0 \$0 \$91,797 7% 8. Accruals (a) Receivable (other than State and Local Contributions) (b) Less Payable (c) Total \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	(b) Private Equity Fund	\$0		\$0	
(e) Total Alternative Investments (sum of (a) through (d)) \$0 0%	(c) Hedge Funds	\$0		\$0	
6. Other \$0 0% \$0 0% 7. Receivable Contributions (a) From Employee Contributions \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	(d) Other Alternative Investments	\$0		\$0	
7. Receivable Contributions (a) From Employee Contributions (b) From Local Government (c) From State Government (d) Total Receivable Contributions (sum of (a) through (c)) 8. Accruals (a) Receivable (other than State and Local Contributions) (b) Less Payable (c) Total Market Value of Assets End of Year \$0 \$0 \$91,797 7% 90 \$91,797 7% \$91,797 7% \$90 \$90 \$90 \$90 \$90 \$90 \$90 \$90 \$90 \$90	(e) Total Alternative Investments (sum of (a) through (d))	\$0	0%	\$0	0%
(a) From Employee Contributions \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	6. Other	\$0	0%	\$0	0%
(b) From Local Government \$0 \$91,797 (c) From State Government \$0 \$0 (d) Total Receivable Contributions (sum of (a) through (c)) \$0 \$91,797 7% 8. Accruals (a) Receivable (other than State and Local Contributions) \$0 \$0 \$0 (b) Less Payable \$0 \$0 \$0 (c) Total \$0 \$0 \$0 Market Value of Assets End of Year \$1,207,124 \$1,289,817	7. Receivable Contributions				
(b) From Local Government \$0 \$91,797 (c) From State Government \$0 \$0 (d) Total Receivable Contributions (sum of (a) through (c)) \$0 \$91,797 7% 8. Accruals (a) Receivable (other than State and Local Contributions) \$0 \$0 \$0 (b) Less Payable \$0 \$0 \$0 (c) Total \$0 \$0 \$0 Market Value of Assets End of Year \$1,207,124 \$1,289,817	(a) From Employee Contributions	\$0		\$0	
(c) From State Government \$0 \$0 (d) Total Receivable Contributions (sum of (a) through (c)) \$0 0% \$91,797 7% 8. Accruals (a) Receivable (other than State and Local Contributions) \$0 \$0 \$0 (b) Less Payable \$0 \$0 \$0 (c) Total \$0 0% \$0 Market Value of Assets End of Year \$1,207,124 \$1,289,817	• • •				
(d) Total Receivable Contributions (sum of (a) through (c)) \$0 \$91,797 7% 8. Accruals (a) Receivable (other than State and Local Contributions) \$0 \$0 \$0 (b) Less Payable \$0 \$0 \$0 (c) Total \$0 0% \$0 Market Value of Assets End of Year \$1,207,124 \$1,289,817	• •				
(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 \$1,207,124 \$1,289,817	• •		0%		7%
(b) Less Payable \$0 \$0 (c) Total \$0 0% \$0 0% Market Value of Assets End of Year \$1,207,124 \$1,289,817	8. Accruals				
(c) Total \$0 0% \$0 0% Market Value of Assets End of Year \$1,207,124 \$1,289,817	(a) Receivable (other than State and Local Contributions)	\$0		\$0	
Market Value of Assets End of Year \$1,207,124 \$1,289,817	(b) Less Payable	\$0		\$0	
	(c) Total	\$0	0%	\$0	0%
	Market Value of Assets End of Year	\$1,207,124		\$1,289,817	
[sum of (1) through (8)]	[sum of (1) through (8)]				



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

	Actives	Retirees	Disabled	Deferred Vested	Spouses and Beneficiaries	Totals
Total Participants July 1, 2016:	6	2	2	0	4	14
New Actives:						0
Returned to Actives Status:						0
Data Corrections/Other Changes:						0
Vested Terminations:						0
Non-Vested Terminations:	(2)					(2)
Disabled:						0
Retirements:						0
Deaths with Beneficiary:						0
Deaths w/o Beneficiary:					(1)	(1)
Expired Annuity or Stop Payment:						0
Net Changes:	(2)	0	0	0	(1)	(3)
Total Participants June 30, 2017:	4	2	2	0	3	11



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

Attained			<u>Ye</u>	ars of Servic	e to Valua	tion Date					٧	aluation
Age	Less than 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 35	Totals		Payroll ^a
Under 20											\$	0
20-24											\$	0
25-29											\$	0
30-34			1							1	\$	29,368
35-39					1					1	\$	34,014
40-44											\$	0
45-49				1			1			2	\$	53,690
50-54											\$	0
55-59											\$	0
60-64											\$	0
65-69											\$	0
Over 70											\$	0
Totals	0	0	1	1	1	0	1	0	0	4	\$	117,072
		Averages										
		Age:		41.3	years							
		Service:		14.7	years							
		Annual Pa	y:	\$29,268								
				· .								

^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	4
Total Annual Pay	\$176,265	\$117,072
Average Age	35.2	41.3
Average Service	9.8	14.7

Inactive Participants	Jı	uly 1, 2016	July 1, 2017 ^a		
Туре	No.	Annual Benefit	No.	Annual Benefit	
Retirees	2	\$43,227	2	\$43,640	
Survivors	4	\$47,316	3	\$33,587	
Disabled Members	2	\$30,733	2	\$31,132	
Deferred Vested Members	0	\$0	0	\$0	

 $[^]a$ Data provided includes 2 non-vested members with accumulated contributions balances of \$14,923.





ACTUARIAL ASSUMPTIONS AND METHODS

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

Discount Rate

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

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

¹Funded ratios based on a 6.0% investment return assumption for plans using an actuarially sound policy (standard or optional) and a 5.5% investment return assumption for other plans (alternative or conservation).

³Based on investment policy.

As of June 30, 2017				
Assets	\$1,289,817			
Liabilities using a 6.00% Discount Rate	\$2,369,172			
Funded Ratio	54%			
Expected Benefit Payments	\$128,654			
Liquidity Ratio	10.03			
Equity Exposure ^a	0%			
Projected Funded Ratio after 15 years	79%			

Discount Rate	5.00%
Discount Rate	5.00%

^a Plan trustees and Plan sponsor are in the process of transferring assets to the West Virginia Investment Management Board.



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

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 Policemen's Pension and Relief Fund reported 5 eligible active members and 7 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 \$58,021 for the fiscal year ending June 30, 2019.
- (6) The total premium tax allocation was assumed to increase by 2.75% in calendar years ending on and after 2019.



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



	<u> </u>
Administrative Expenses	The sponsor did not appear to provide
	separate investment and administrative
	expenses. Administrative expenses used are
	equal to 0.25% of expected pay plus 0.25% of
	expected benefits. 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	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
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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 hired before January 1, 2016 are eligible to participate in the City of Williamson Policemen's Pension and Relief Fund.

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

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

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

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

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

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

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

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

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



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, 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.

