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

Actuarial Valuation Report
for the Year Beginning July 1, 2017

September 14, 2018

Mr. Eric S. Jiles	Sgt. Beniah J. Depue
City Treasurer/Finance Director	Pension Board Secretary
#1 Government Square	City of Parkersburg Policemen's Pension and Relief Fund
Parkersburg, WV 26101	

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

Dear Mr. Jiles and Sgt. Depue:

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

Lance J. Weiss

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

Lance Weiss, EA, MAAA, FCA
Senior Consultant

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 Parkersburg, 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 October 24, 2017.

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.

The sponsor made a contribution of $3,337,536 for the fiscal year end June 30, 2018, based on the Optional funding policy contribution amount provided in the actuarial valuation report as of July 1, 2016, which assumed that the sponsor closed the pension fund as of July 1, 2017. The sponsor's minimum statutory contribution for fiscal year 2018 is based on a proration of the Alternative funding contribution before the pension fund close date and the Optional funding contribution after the pension fund close date. Since the sponsor closed the pension fund on October 24, 2017, and the fiscal year 2018 Alternative contribution is less than the fiscal year 2018 Optional contribution, the sponsor made contributions which exceeded the statutory minimum. The additional contributions in excess of the statutory minimum will help improve the funded status of the pension fund and reduce future contributions. The additional excess contributions are reflected in the actuarial projections contained in this report.

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	$11,335,200
Actuarial Accrued Liability	$53,653,663
Unfunded Actuarial Accrued Liability	$42,318,463
Funded Ratio	21.13%

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	$3,105,892
Employer Normal Cost for PYE 06/30/2017	$1,366,846
Employer Normal Cost Rate for PYE 06/30/2017	44.0%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2017	$2,684,428
State Insurance Premium Tax Allocation for FYE 06/30/2018	$713,738
Employer Contribution for FYE 06/30/2018	$3,337,536

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	$3,266,299
Employer Normal Cost for Active Members for PYE 06/30/2018	$1,228,126
Employer Normal Cost Rate for PYE 06/30/2018	37.6%
Amortization of Unfunded Actuarial Liability for PYE 06/30/2018	$2,596,770
State Insurance Premium Tax Allocation for FYE 06/30/2019	$730,381
Estimated Employer Contribution for FYE 06/30/2019 [a]	$3,094,515

[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. _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._

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

The City of Parkersburg 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 4.50% for the July 1, 2016 actuarial valuation to 5.00% 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 24% (using a testing interest rate of 6.00% for all plans using the Optional funding policy), ratio of assets to benefits of 4.94, equity allocation of 49%, and 15-year projected funded ratio of 60%, resulted in a discount rate assumption of 5.00%.
    - The change in interest rate used to discount liabilities from 4.50% as of July 1, 2016, to 5.00% as of July 1, 2017, decreased liabilities by $3,986,892.

- The Fund experienced an approximate annualized return of 9.37% on the market value of assets during the plan year ended June 30, 2017, which compares to the expected annualized return of 4.50%. The difference in actual versus expected return produced an asset (gain)/loss of ($500,193).

- 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 ($1,459,178) 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 5.00%:

- The funded ratio is projected to increase from 21% at June 30, 2017, to 55% at June 30, 2030, to 75% at June 30, 2040, and 100% at June 30, 2050.
- Employer contributions are expected to decrease steadily from $3,094,515 for the fiscal year end June 30, 2019, to $721,474 for fiscal year end June 30, 2049.

Please note that a funded ratio of only 21% at June 30, 2017, means that the Plan is underfunded. Although the Plan is projected to be 100% funded by 2050, the funded ratio is only projected to reach 50% in 2028 and 70% in 2038.

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		4.50%		5.00%
Cost-of-Living Adjustment		2.75%		2.75%
Wage Inflation		3.75%		3.75%
Expected Payroll		$3,105,892		$3,266,299
Average Pay		$46,357		$46,004
Expected Benefit Payments		$2,302,215		$2,296,740
1. Actuarial Accrued Liability	No.		No.	
(a) Actives	67	$18,670,503	71	$17,428,710
(b) Retirees	48	$29,224,259	47	$26,757,736
(c) Survivors	14	$2,355,425	16	$2,804,920
(d) Disabled Members	13	$6,307,441	12	$5,991,852
(e) Deferred Vested Members	1	$678,297	1	$670,445
(f) Total	143	$57,235,925	147	$53,653,663
2. Present Value of Future Normal Costs		$18,340,919		$16,112,570
3. Present Value of Benefits (1(f) + 2)		$75,576,844		$69,766,233
4. Market Value of Assets		$10,211,825		$11,335,200
5. Unfunded Actuarial Accrued Liability (1(f) - 4)		$47,024,100		$42,318,463
6. Funded Ratio (4 / 1(f))		17.84%		21.13%
7. Net Employer Normal Cost				
(a) Normal Cost		$1,598,128		$1,477,801
(b) Administrative Expenses		$11,437		$10,771
(c) Gross Normal Cost (a + b)		$1,609,565		$1,488,572
(d) Employee Contribution Rate [a]		7.81%		7.97%
(e) Expected Employee Contributions		$242,719		$260,446
(f) Net Employer Normal Cost (c - e)		$1,366,846		$1,228,126
(% of Compensation)		44.01%		37.60%
8. Estimated Minimum Employer Contribution [b]		**FYE 2018**		**FYE 2019**
(a) Expected Payroll		$3,105,892		$3,266,299
(b) Estimated Employer Normal Cost		$1,366,846		$1,228,126
(c) Employer Normal Cost Rate		44.01%		37.60%
(d) Amortization of Unfunded Actuarial Liability		$2,684,428		$2,596,770
(e) State Insurance Premium Tax Allocation		$713,738		$730,381
(f) Estimated Employer Contribution[c] (b + d - e)		**$3,337,536**		**$3,094,515**

[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	$57,235,925
	(b)	Normal Cost due 7/1/2016	$1,598,128
	(c)	Interest on (a) and (b) to 6/30/2017	$2,611,575
	(d)	Benefit Payments with interest to 6/30/2017	$2,345,895
	(e)	Effect of Assumption Changes	($3,986,892)
	(f)	Expected Liability at 7/1/2017 [(a) + (b) + (c) - (d) + (e)]	$55,112,841
	(g)	Actual Liability at 7/1/2017	$53,653,663
	(h)	Liability (Gain)/Loss [(g) - (f)]	**($1,459,178)**
2.	(a)	Market Value of Assets as of 7/1/2016	$10,211,825
	(b)	Interest on (a) to 6/30/2017	$458,823
	(c)	Contributions with interest to 6/30/2017	$2,510,254
	(d)	Benefit Payments with interest to 6/30/2017	$2,345,895
	(e)	Expected Assets at 6/30/2017 [(a) + (b) + (c) - (d)]	$10,835,007
	(f)	Actual Assets at 7/1/2017	$11,335,200
	(g)	Asset (Gain)/Loss [(e) - (f)]	**($500,193)**
3.		Total (Gain)/Loss [1(h) + 2(g)]	**($1,959,371)**

SECTION II

ACTUARIAL PROJECTIONS

Actuarial Projections, Table 1

Valuation Plan Year End 30-Jun	Number Active	Number Pay Status	Total Assets: Assets (boy)	Benefit Payments	Expenses	Employer Contributions	Employee Contributions	Premium Tax Allocation Contributions	Investment Income	Assets (eoy)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2017	71	76	$10,211,825	$2,294,353	$96	$1,514,337	$257,318	$683,470	$962,699	$11,335,200	$53,653,663	$42,318,463	21%
2018	67	77	11,335,200	2,296,740	10,771	3,337,536	260,446	713,738	616,254	13,955,663	55,497,053	41,541,390	25%
2019	62	78	13,955,663	2,394,988	10,789	3,094,515	259,289	730,381	739,231	16,373,303	57,317,800	40,944,497	29%
2020	57	81	16,373,303	2,503,698	10,837	3,039,045	253,404	758,538	856,608	18,766,364	59,073,077	40,306,713	32%
2021	52	83	18,766,364	2,620,141	10,910	2,976,747	246,470	781,097	972,231	21,111,858	60,742,890	39,631,032	35%
2022	47	85	21,111,858	2,753,852	11,004	2,905,809	238,378	803,815	1,084,811	23,379,815	62,295,813	38,915,998	38%
2023	44	86	23,379,815	2,884,745	11,111	2,824,649	230,781	828,141	1,193,382	25,560,912	63,733,305	38,172,393	40%
2024	40	88	25,560,912	2,996,492	11,227	2,748,148	225,473	850,984	1,298,219	27,676,017	65,085,679	37,409,662	43%
2025	36	90	27,676,017	3,123,970	11,349	2,684,896	218,027	874,393	1,399,655	29,717,669	66,316,538	36,598,869	45%
2026	34	90	29,717,669	3,244,277	11,482	2,605,713	211,594	901,477	1,497,318	31,678,012	67,434,462	35,756,450	47%
2027	32	91	31,678,012	3,334,840	11,619	2,534,899	208,227	924,966	1,591,843	33,591,489	68,485,306	34,893,817	49%
2028	29	91	33,591,489	3,418,482	11,757	2,481,128	205,207	949,468	1,684,650	35,481,703	69,475,035	33,993,332	51%
2029	27	91	35,481,703	3,497,062	11,899	2,430,073	202,578	974,081	1,776,500	37,355,974	70,407,591	33,051,617	53%
2030	26	91	37,355,974	3,561,162	12,049	2,380,250	201,355	999,228	1,867,987	39,231,584	71,302,417	32,070,833	55%
2031	24	91	39,231,584	3,611,802	12,201	2,337,557	201,599	1,023,226	1,960,058	41,130,020	72,180,730	31,050,710	57%
2032	23	91	41,130,020	3,664,615	12,353	2,301,299	201,968	1,048,410	2,053,407	43,058,137	73,039,950	29,981,813	59%
2033	22	90	43,058,137	3,705,507	12,499	2,265,553	202,897	1,074,515	2,148,585	45,031,681	73,896,937	28,865,256	61%
2034	19	91	45,031,681	3,785,625	12,638	2,235,025	196,803	1,100,163	2,245,008	47,010,418	74,675,744	27,665,326	63%
2035	17	91	47,010,418	3,911,254	12,780	2,167,615	184,812	1,135,396	2,339,749	48,913,955	75,293,669	26,379,714	65%
2036	15	91	48,913,955	4,029,962	12,916	2,073,370	173,864	1,169,370	2,430,232	50,717,913	75,755,053	25,037,140	67%
2037	13	91	50,717,913	4,144,743	13,046	1,979,732	163,625	1,203,890	2,515,879	52,423,251	76,061,300	23,638,049	69%
2038	11	91	52,423,251	4,253,242	13,171	1,889,889	152,886	1,238,950	2,596,846	54,035,408	76,211,413	22,176,005	71%
2039	9	91	54,035,408	4,376,201	13,285	1,798,638	138,004	1,276,146	2,672,711	55,531,422	76,165,759	20,634,337	73%
2040	8	91	55,531,422	4,489,566	13,386	1,691,517	122,675	1,316,563	2,742,684	56,901,909	75,924,162	19,022,253	75%
2041	7	90	56,901,909	4,576,823	13,475	1,582,967	109,948	1,356,665	2,807,047	58,168,238	75,519,226	17,350,988	77%
2042	5	89	58,168,238	4,686,974	13,550	1,484,909	94,031	1,397,887	2,865,845	59,310,386	74,907,113	15,596,727	79%
2043	4	88	59,310,386	4,795,211	13,614	1,374,498	76,860	1,443,643	2,918,257	60,314,820	74,074,265	13,759,445	81%
2044	3	87	60,314,820	4,910,772	13,665	1,258,330	58,163	1,489,227	2,963,419	61,159,521	72,998,484	11,838,963	84%
2045	2	86	61,159,521	5,003,537	13,705	1,133,027	40,755	1,539,386	3,001,077	61,856,524	71,697,707	9,841,183	86%
2046	1	84	61,856,524	5,034,257	13,733	1,012,284	29,515	1,587,328	3,033,092	62,470,753	70,251,272	7,780,519	89%
2047	1	82	62,470,753	5,041,982	13,750	907,943	20,616	1,636,481	3,062,029	63,042,090	68,686,031	5,643,941	92%
2048	1	80	63,042,090	5,021,671	13,758	812,015	14,470	1,686,118	3,089,803	63,609,067	67,036,676	3,427,609	95%
2049	0	78	63,609,067	4,985,821	13,757	721,474	9,857	1,736,632	3,117,935	64,195,387	65,321,583	1,126,196	98%
2050	0	76	64,195,387	4,936,984	13,746	44,916	6,553	1,143,406	3,117,018	63,556,549	63,556,549	0	100%
2051	0	74	63,556,549	4,877,759	13,728	27,129	4,279	0	3,057,807	61,754,277	61,754,277	0	100%
2052	0	72	61,754,277	4,811,963	13,703	21,678	2,569	0	2,969,142	59,922,001	59,922,001	0	100%
2053	0	70	59,922,001	4,740,018	13,669	17,923	1,393	0	2,879,184	58,066,814	58,066,814	0	100%
2054	0	68	58,066,814	4,663,305	13,628	15,419	594	0	2,788,239	56,194,133	56,194,133	0	100%
2055	0	66	56,194,133	4,581,986	13,578	13,995	144	0	2,696,568	54,309,276	54,309,276	0	100%
2056	0	64	54,309,276	4,496,003	13,520	13,689	58	0	2,604,440	52,417,941	52,417,941	0	100%
2057	0	62	52,417,941	4,407,762	13,451	13,451	0	0	2,512,047	50,522,226	50,522,226	0	100%
2058	0	60	50,522,226	4,316,914	13,370	13,370	0	0	2,419,505	48,624,817	48,624,817	0	100%

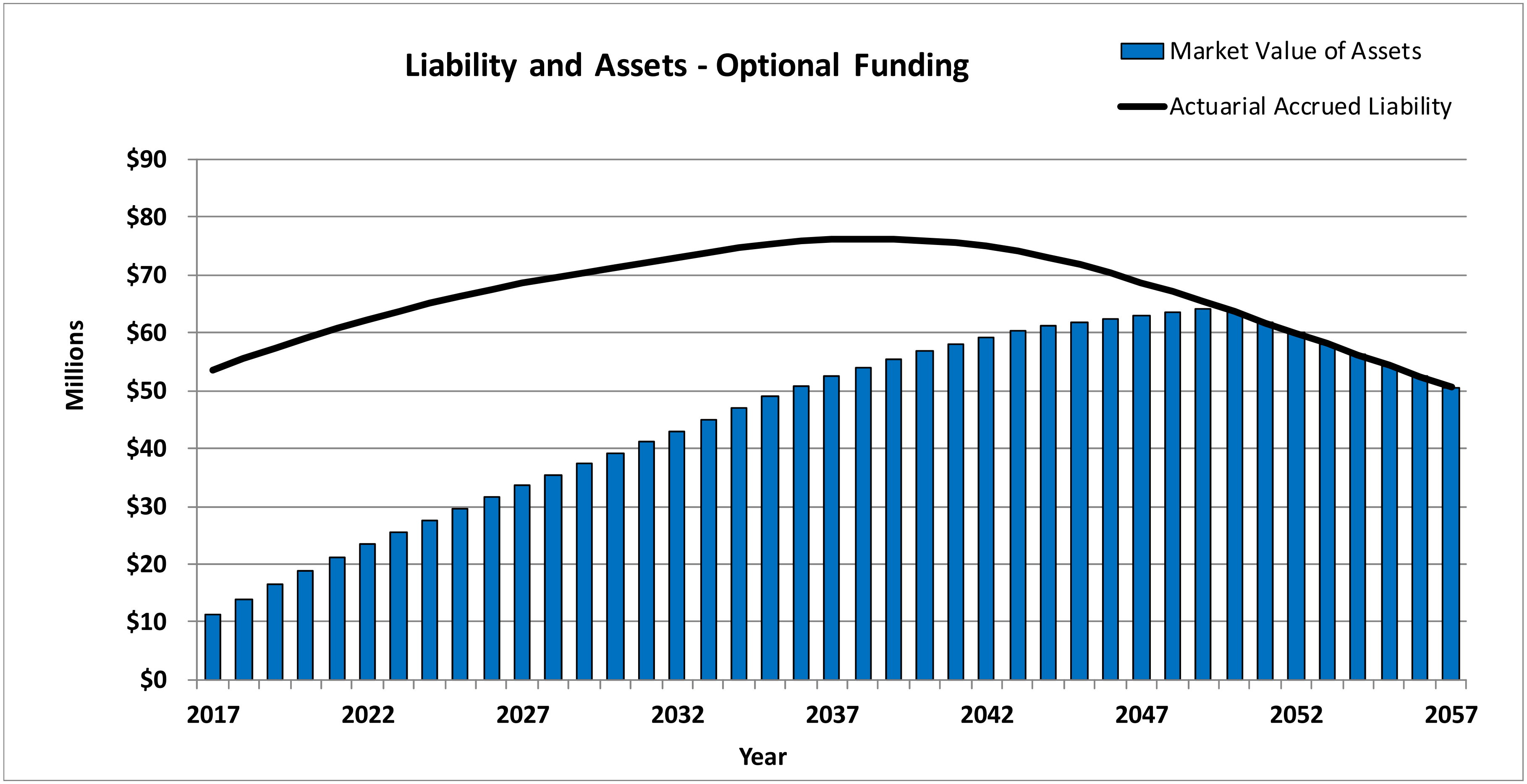
Actuarial Projections, Table 2

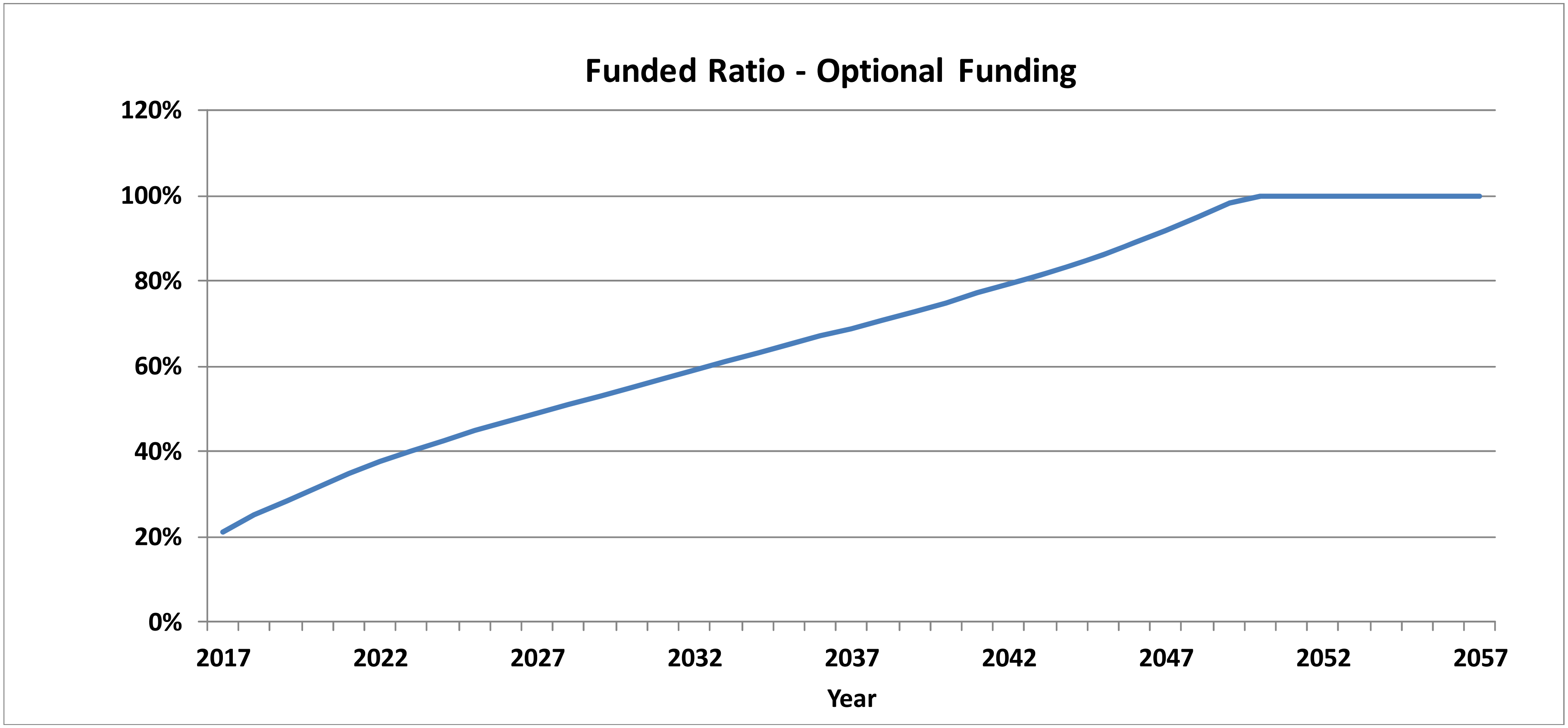
				Employer Contributions					
Valuation Plan Year End 30-Jun[a]	Closed Group Payroll	Active Employee Contributions	Gross Normal Cost	Net Employer Normal Cost	Amortization of UAAL	Premium Tax Allocation Contributions	Net Employer Amortization	Expenses	Employer Contribution Closed Plan
2018	$3,266,299	$260,446	1,477,801	1,217,355	$2,596,770	$730,381	$1,866,389	$10,771	3,094,515
2019	3,244,830	259,289	1,463,742	1,204,453	2,582,342	758,538	1,823,804	10,789	3,039,045
2020	3,159,181	253,404	1,419,824	1,166,420	2,580,587	781,097	1,799,490	10,837	2,976,747
2021	3,057,808	246,470	1,367,200	1,120,730	2,577,984	803,815	1,774,169	10,910	2,905,809
2022	2,938,261	238,378	1,305,388	1,067,010	2,574,776	828,141	1,746,635	11,004	2,824,649
2023	2,824,581	230,781	1,247,872	1,017,091	2,570,930	850,984	1,719,946	11,111	2,748,148
2024	2,742,757	225,473	1,206,303	980,830	2,567,232	874,393	1,692,839	11,227	2,684,896
2025	2,629,165	218,027	1,149,428	931,401	2,564,440	901,477	1,662,963	11,349	2,605,713
2026	2,528,748	211,594	1,099,281	887,687	2,560,697	924,966	1,635,731	11,482	2,534,899
2027	2,471,057	208,227	1,069,971	861,744	2,557,233	949,468	1,607,765	11,619	2,481,128
2028	2,416,988	205,207	1,042,573	837,366	2,555,031	974,081	1,580,950	11,757	2,430,073
2029	2,366,616	202,578	1,017,157	814,579	2,553,000	999,228	1,553,772	11,899	2,380,250
2030	2,334,336	201,355	999,045	797,690	2,551,044	1,023,226	1,527,818	12,049	2,337,557
2031	2,321,449	201,599	989,599	788,000	2,549,508	1,048,410	1,501,098	12,201	2,301,299
2032	2,309,313	201,968	981,093	779,125	2,548,590	1,074,515	1,474,075	12,353	2,265,553
2033	2,308,171	202,897	977,839	774,942	2,547,748	1,100,163	1,447,585	12,499	2,235,025
2034	2,229,970	196,803	939,868	743,065	2,547,308	1,135,396	1,411,912	12,638	2,167,615
2035	2,083,426	184,812	870,497	685,685	2,544,275	1,169,370	1,374,905	12,780	2,073,370
2036	1,941,623	173,864	806,239	632,375	2,538,331	1,203,890	1,334,441	12,916	1,979,732
2037	1,800,809	163,625	747,210	583,585	2,532,208	1,238,950	1,293,258	13,046	1,889,889
2038	1,663,051	152,886	688,298	535,412	2,526,201	1,276,146	1,250,055	13,171	1,798,638
2039	1,491,233	138,004	612,889	474,885	2,519,910	1,316,563	1,203,347	13,285	1,691,517
2040	1,318,891	122,675	537,328	414,653	2,511,593	1,356,665	1,154,928	13,386	1,582,967
2041	1,176,909	109,948	476,909	366,961	2,502,361	1,397,887	1,104,474	13,475	1,484,909
2042	1,003,352	94,031	404,630	310,599	2,493,992	1,443,643	1,050,349	13,550	1,374,498
2043	818,232	76,860	327,356	250,496	2,483,447	1,489,227	994,220	13,614	1,258,330
2044	618,113	58,163	246,454	188,291	2,470,457	1,539,386	931,071	13,665	1,133,027
2045	432,483	40,755	172,166	131,411	2,454,496	1,587,328	867,168	13,705	1,012,284
2046	312,420	29,515	124,180	94,665	2,436,026	1,636,481	799,545	13,733	907,943
2047	217,433	20,616	86,548	65,932	2,418,451	1,686,118	732,333	13,750	812,015
2048	152,316	14,470	60,521	46,051	2,398,297	1,736,632	661,665	13,758	721,474
2049	103,757	9,857	41,016	31,159	2,369,945	1,143,406	581,546	13,757	44,916 [b]
2050	68,978	6,553	27,116	20,563	0	0	0	13,746	27,129 [b]
2051	45,041	4,279	17,672	13,393	0	0	0	13,728	21,678 [b]
2052	27,043	2,569	10,552	7,983	0	0	0	13,703	17,923 [b]
2053	14,659	1,393	5,646	4,253	0	0	0	13,669	15,419 [b]
2054	6,251	594	2,385	1,791	0	0	0	13,628	13,995 [b]
2055	1,516	144	561	417	0	0	0	13,578	13,689 [b]
2056	614	58	227	169	0	0	0	13,520	13,451 [b]
2057	0	0	0	0	0	0	0	13,451	13,370 [b]

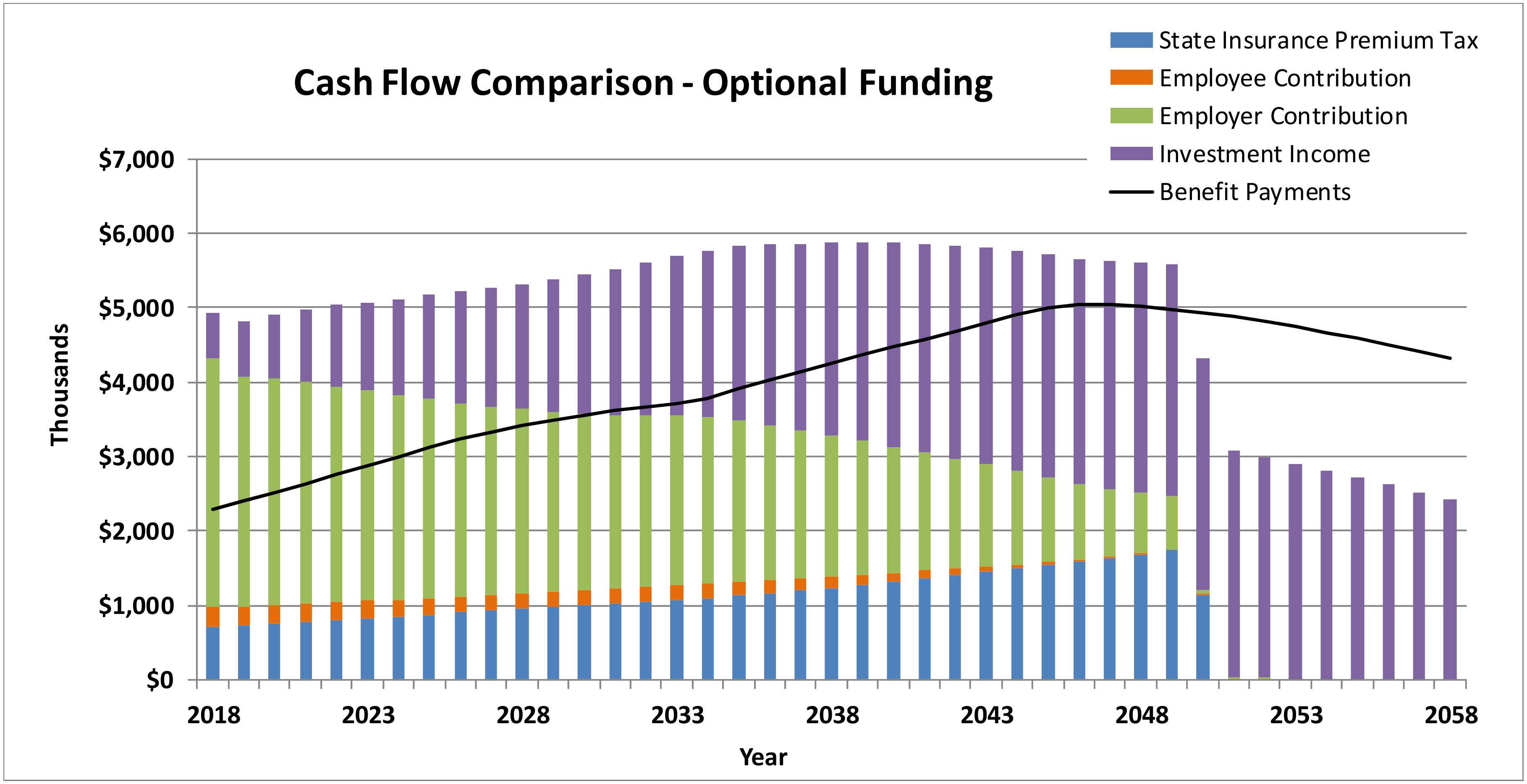
[a] *Assumes employer makes contributions for the applicable valuation plan year in the following fiscal year.*

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

Actuarial Projections, Graph 1




Funded Ratio - Optional Funding
120%
100%
80%
60%
40%
20%
0%
2017
2022
2027
2032
2037
2042
2047
2052
2057
Year


Cash Flow Comparison - Optional Funding
State Insurance Premium Tax
Employee Contribution
Employer Contribution
Investment Income
Benefit Payments
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
Thousands
2018
2023
2028
2033
2038
2043
2048
2053
2058
Year

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	4.50%	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	$10,211,825	$11,335,200
2. Actuarial Accrued Liability	$57,235,925	$53,653,663
3. Unfunded Actuarial Accrued Liability (2 - 1)	$47,024,100	$42,318,463
4. Funded Ratio (1/2)	18%	21%
5. Expected Payroll	$3,105,892	$3,266,299
6. UAAL as Percentage of Covered Payroll (3/5)	1,514%	1,296%
Schedule of Employer Contributions [c]	**FYE 2017**	**FYE 2018**
1. Actuarially Determined Contribution		
(a) Employer Normal Cost	$1,366,846	$1,228,126
(b) Amortization of Unfunded Actuarial Accrued Liability	$2,125,904	$2,092,405
(c) Actuarially Determined Contribution (ADC) (a + b)	$3,492,750	$3,320,531
2. Employer Contribution [b]	$1,514,337	$3,337,536
3. Premium Tax Allocation	$683,470	$713,738
4. Percentage of ADC Contributed [(2 + 3)/1(c)]	63%	122%

[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	$10,313,547	$10,211,825
Adjustment to Market Value of Assets at Beginning of Year	($1)	$0
Market Value of Assets Beginning of Year	$10,313,546	$10,211,825
1. Revenue During Fiscal Year		
(a) Employee Contribution	$251,761	$247,387
(b) Governmental Contribution		
(i) From Local Government	$1,415,268	$1,514,337
(ii) From State Government	$634,723	$683,470
(iii) Reallocation from State Government	$0	$0
(iv) Total	$2,049,991	$2,197,807
(c) Earnings on Investments		
(i) Net Appreciation/(Depreciation)	($384,096)	$723,986
(ii) Bond Interest	$53,798	$52,176
(iii) Dividends	$155,610	$122,194
(iv) Net Realized Gain (Loss) on Sale/Exchange	$3,777	$97,600
(v) Other	$0	$0
(vi) Less Investment Expense	($76,244)	($71,712)
(vii) Total	($247,155)	$924,244
(d) Other Revenue	$2	$24,098
(e) Receivable Investment Income/(Expense)	$7,171	$14,357
(f) Receivable Contribution [a]		
(i) From Employee Contributions	$8,577	$9,931
(ii) From Local Government	$0	$0
(iii) From State Government	$0	$0
(iv) Total	$8,577	$9,931
(g) Total Revenue (sum of (a) through (f))	$2,070,347	$3,417,824
2. Expenditures During Fiscal Year		
(a) Benefits Paid	$2,172,068	$2,242,348
(b) Withdrawals	$0	$48,408
(c) Administrative Expenses	$0	$96
(d) Payable Benefits and Withdrawals	$0	$3,597
(e) Payable Administrative Expenses	$0	$0
(f) Total Expenditures (sum of (a) through (e))	$2,172,068	$2,294,449
B. Market Value of Assets End of Year [A + 1(g) - 2(f)]	$10,211,825	$11,335,200
C. Approximate Return on Assets	(2.31)%	9.37%

[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	$1,069,566	10%	$1,656,358	15%
2. Government Securities				
(a) US Treasury Bills, Notes and Bonds	$892,955		$691,173	
(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))	$892,955	9%	$691,173	6%
3. Corporate Fixed Income				
(a) US Bonds	$1,025,651		$1,075,082	
(b) US Mortgage or other Asset Backed Securities	$0		$0	
(c) US Mutual Fund Shares (Bonds)	$0		$703,362	
(d) US Exchange Traded Funds (Bonds)	$0		$0	
(e) International Bonds	$0		$0	
(f) International Mutual Fund Shares (Bonds)	$0		$0	
(g) International Exchange Traded Funds (Bonds)	$0		$0	
(h) Total Corporate Fixed Income (sum of (a) through (g))	$1,025,651	10%	$1,778,444	16%
4. Corporate Equity				
(a) US Equity	$1,059,506		$326,449	
(b) US Mutual Fund Shares (Equity)	$0		$0	
(c) US Exchange Traded Funds (Equity)	$2,573,758		$2,952,619	
(d) International Equity	$2,090,083		$2,276,827	
(e) International Mutual Fund Shares (Equity)	$0		$0	
(f) International Exchange Traded Funds (Equity)	$0		$30,854	
(g) Total Corporate Equity (sum of (a) through (f))	$5,723,347	56%	$5,586,749	49%
5. Alternative Investments				
(a) Real Estate Investment Trust	$0		$0	
(b) Private Equity Fund	$0		$0	
(c) Hedge Funds	$0		$0	
(d) Other Alternative Investments	$1,484,558		$1,601,785	
(e) Total Alternative Investments (sum of (a) through (d))	$1,484,558	15%	$1,601,785	14%
6. Other	$0	0%	$0	0%
7. Receivable Contributions	$0			
(a) From Employee Contributions	$8,577		$9,931	
(b) From Local Government	$0		$0	
(c) From State Government	$0		$0	
(d) Total Receivable Contributions (sum of (a) through (c))	$8,577	0%	$9,931	0%
8. Accruals				
(a) Receivable (other than State and Local Contributions)	$7,171		$14,357	
(b) Less Payable	$0		($3,597)	
(c) Total	$7,171	0%	$10,760	0%
Market Value of Assets End of Year [sum of (1) through (8)]	**$10,211,825**		**$11,335,200**	

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:	**67**	**48**	**13**	**1**	**14**	**143**
New Actives:	10					**10**
Returned to Actives Status:						**0**
Data Corrections/Other Changes:						**0**
Vested Terminations:						**0**
Non-Vested Terminations:	(5)					**(5)**
Disabled:						**0**
Retirements:	(1)	1				**0**
Deaths with Beneficiary:		(1)	(1)		2	**0**
Deaths w/o Beneficiary:		(1)				**(1)**
Expired Annuity or Stop Payment:						**0**
Net Changes:	4	(1)	(1)	0	2	**4**
Total Participants June 30, 2017:	**71**	**47**	**12**	**1**	**16**	**147**

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	7	2								**9**	**$ 332,388**
25-29	1	14	1							**16**	**$ 650,071**
30-34		2	8	2						**12**	**$ 530,568**
35-39		3	1	2	1					**7**	**$ 298,592**
40-44			1	2	5	1				**9**	**$ 443,470**
45-49					7	6	1			**14**	**$ 786,463**
50-54						3				**3**	**$ 169,799**
55-59				1						**1**	**$ 43,388**
60-64											**$ 0**
65-69											**$ 0**
Over 70											**$ 0**
Totals	**8**	**21**	**11**	**7**	**13**	**10**	**1**	**0**	**0**	**71**	**$ 3,254,738**

Averages

Age:	36.0	years
Service:	10.1	years
Annual Pay:	$45,841	[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	67	71
Total Annual Pay	$3,111,266	$3,254,738
Average Age	36.6	36.0
Average Service	10.3	10.1

Inactive Participants	**July 1, 2016**		**July 1, 2017[a]**	
Type	No.	Annual Benefit	No.	Annual Benefit
Retirees	48	$1,681,452	47	$1,655,257
Survivors	14	$188,313	16	$230,914
Disabled Members	13	$353,463	12	$341,817
Deferred Vested Members	1	$32,187	1	$34,333

[a]Data provided includes 1 non-vested member with an accumulated contributions balance of $155.

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	$11,335,200
Liabilities using a 6.00% Discount Rate	$46,892,740
Funded Ratio	24%
Expected Benefit Payments	$2,296,740
Liquidity Ratio	4.94
Equity Exposure	49%
Projected Funded Ratio after 15 years	60%

Discount Rate	5.00%

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 Parkersburg Policemen’s Pension and Relief Fund reported 71 eligible active members and 77 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 $730,381 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 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)

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

Administrative Expenses	Plan year 2018 administrative expenses assumed to be equal to 15% of all reported 2017 expenses. Future expenses assumed to increase by the general inflation assumption.
Refunds Paid	Assumes non-vested inactive members as of July 1, 2017, with accumulated member contribution balances will receive a refund of their contributions during plan year end June 30, 2018.
Data Adjustments and Assumptions	None
Child Beneficiaries	Future survivor widow benefits are loaded by 12% to estimate impact of benefits provided to survivor children. The load assumes 90% of members are married with two children at time of death, and benefits for each child are paid for approximately 8 years.
General Projection Methodology	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 Police Department hired before October 24, 2017 are eligible to participate in the City of Parkersburg 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.