



**Municipal Pensions
Oversight Board**

**City of Bluefield, West Virginia
Firemen's Pension and Relief Fund**

GASB68 Actuarial Information for the
Measurement Period Ending
06/30/2019

Bolton

Submitted by:

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October 21, 2019

Ms. Kelly Davis
City Treasurer
City of Bluefield
680 Mt. Olive Road
Rock, WV 24747

Mr. Ricky Taylor
Pension Board Secretary
City of Bluefield, West Virginia
Firemen's Pension and Relief Fund

Re: City of Bluefield, West Virginia Firemen's Pension and Relief Fund - GASB68 Actuarial Information for the Measurement Period Ending June 30, 2019

Dear Kelly

The following report contains the GASB 67 and GASB 68 actuarial information for the City of Bluefield Firemen's Pension and Relief Fund to be included in the City's financial statements for FY2019. The GASB67 information has been provided as of the June 30, 2019 (the GASB 68 measurement date for FY2019).

Methodology, Reliance and Certification

This report is prepared for the City. The report contains the actuarial information to be included with the City's financial statements for the year ending June 30, 2019 (the City's fiscal year end date) as required by GASB68. This information has been prepared for use in the financial statements of the City. This information is not intended for, nor should it be used for, any additional purposes.

The total pension liability is based on the July 1, 2018 actuarial valuation rolled forward to June 30, 2019. The methods, assumptions, and participant data used are detailed in the July 1, 2018 actuarial valuation report with the exception of the actuarial cost method. These calculations are based on the Entry Age Normal cost method as required by GASB67. The calculation of the Actuarially Determined Contribution for the fiscal year ended June 30, 2019 is contained in the July 1, 2018 actuarial valuation report.

The included calculations are based on a blended discount rate of 5.00%. The plan's expected gross rate of investment return of 5.0% has been blended with the 3.13% yield corresponding to the 20-year maturity on a municipal general obligation AA bond yield curve published on Fidelity's Fixed Income Market Data webpage as of June 30, 2019. The development of the blended discount rate is included within this report.

The included calculations assume that the members and the City will continue to make all required contributions in accordance with the City's funding policy.

The long-term nominal expected rate of return on pension plan investments was determined using a methodology approved by the Municipal Pensions Oversight Board (MPOB.) The long-term nominal expected rate of return is based on the fund's current funding ratio, liquidity ratio, equity exposure and expected funded status in 15 years.

Methodology, Reliance and Certification (cont.)

These calculations and comparisons with assets are applicable for the valuation date only. The future is uncertain, and the plan may become better funded or more poorly funded in the future. This valuation does not provide any guarantee that the plan will be able to provide the promised benefits in the future.

This is a deterministic valuation in that it is based on a single set of assumptions. This set of assumptions is one possible basis for our calculations. Other assumptions may be equally valid. The future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material because these results are very sensitive to the assumptions made and, in some cases, to the interaction between the assumptions. We may consider that some factors are not material to the valuation of the plan and may not provide a specific assumption for those factors. We may have used other assumptions in the past. We will likely consider changes in assumptions at a future date.

The City is responsible for selecting the plan's funding policy based on four methods allowed for under state law. The actuarial valuation methods are chosen by the actuary in accordance with actuarial standards of practice promulgated by the actuarial standards board of the American Academy of Actuaries and as required by GASB 67 & 68. The MPOB selects the asset valuation methods and assumptions; these selections are reviewed by a qualified actuary no less than every five years. The actuary shall provide a report to the oversight board with recommendations on any changes to the actuarial process. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in this report. The City and MPOB are solely responsible for communicating to Bolton Partners, Inc. any changes required thereto.

The City could reasonably ask how the valuation would change if we used a different assumption set or if plan experience exhibited variations from our assumptions. This report does not contain such an analysis. This type of analysis would be a separate assignment.

The cost of this plan is determined by the benefits promised by the plan, the plan's participant population, the investment experience of the plan and many other factors. An actuarial valuation is a budgeting tool for the City or in this case a measure of accounting expense. It does not affect the cost of the plan. As the experience of the plan evolves, it is normal for the level of contributions and expense of the plan to change.

We make every effort to ensure that our calculations are accurately performed. These calculations are complex. Despite our best efforts, we may make a mistake. We reserve the right to correct any potential errors by amending the results of this report or by including the corrections in a future valuation report.

Because modeling all aspects of a situation is not possible or practical, we may use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events in an efficient and cost-effective manner. We may also exclude factors or data that are immaterial in our judgment. Use of such simplifying techniques does not, in our judgment, affect the reasonableness of valuation results for the plan.



Methodology, Reliance and Certification (cont.)

This report is based on plan provisions, census data, and asset data submitted by the City. We have relied on this information for purposes of preparing this report, but have not performed an audit. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information. The plan sponsor is solely responsible for the validity and completeness of this information.

The City is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Bolton Partners, Inc.'s actuaries have not provided any investment advice to the City.

The information in this report was prepared for the internal use of the City, the plan and their auditors in connection with our actuarial valuations of the pension plan as required by GASB68. This report may not be used for any other purpose; Bolton Partners, Inc. is not responsible for the consequences of any unauthorized use or the reliance on this information by any other party.

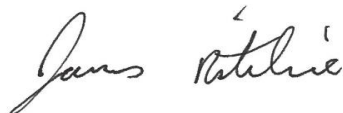
The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption, the lower the estimated liability will be. For purposes of estimating the liabilities (future and accrued) in this report, an assumption based on the expected long-term rate of return on plan investments is used. If the plan is expected to become insolvent, the return assumption is blended with a long-term municipal bond rate. Using a lower discount rate assumption, such as a rate solely based on long-term bond yields, could substantially increase the estimated present value of future and accrued liabilities.

This report provides certain financial calculations for use by the auditor. These values have been computed in accordance with our understanding of generally accepted actuarial principles and practices and fairly reflect the actuarial position of the Plan. The various actuarial assumptions and methods which have been used are, in our opinion, appropriate for the purposes of this report.

The report is conditioned on the assumption of an ongoing plan and is not meant to present the actuarial position of the Plan in the case of Plan termination. 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.

The undersigned enrolled actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The July 1, 2018 actuarial valuation report contains information that is integral to the results contained herein and a copy may be provided upon request.

Sincerely,



James Ritchie, ASA, EA, FCA, MAAA



Jordan McClane, FSA, EA, MAAA



City of Bluefield, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2019 Measurement Date



Net Pension Liability of the Employer

The components of the net pension liability of the Employer at June 30, 2019, were as follows:

Total pension liability	\$ 18,517,975
Plan fiduciary net position	(4,405,173)
Employer's net pension liability	<u>\$ 14,112,802</u>
Plan fiduciary net position as a percentage of the total pension liability	23.79%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of July 1, 2018 rolled forward to June 30, 2019 using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75 percent
Salary increases	Rates vary by years of service
Single discount rate (BOY)	5.0000%
Single discount rate (EOY)	5.0000%
Investment rate of return	5.00 percent, net of pension plan investment expense, including inflation
Long-term municipal bond rate (BOY)	3.62%
Long-term municipal bond rate (EOY)	3.13%
Mortality	RP-2014 Blue Collar Mortality Table with generational projection using Scale MP-2014
Year Fund is projected to be fully funded	2046
Year assets are expected to be depleted for a closed plan	#N/A

The above is a summary of key actuarial assumptions. Full descriptions of the actuarial assumptions are available in the July 1, 2018 actuarial valuation report.

Sensitivity of the net pension liability to changes in the discount rate

	1% Decrease 4.00%	Current Discount Rate 5.00%	1% Increase 6.00%
Employer's net pension liability	\$ 17,072,911	\$ 14,112,802	\$ 11,772,426

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2019 Measurement Date



Changes in the Net Pension Liability

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at 6/30/18	\$ 17,975,426	\$ 4,404,012	\$ 13,571,414
Changes for the year:			
Service cost	305,409		305,409
Interest	875,828		875,828
Changes of benefit terms	-		-
Differences between expected and actual experience	279,024		279,024
Changes of assumptions	-		-
Contributions - employer (including Premium Tax Allocation)		667,271	(667,271)
Contributions - member		65,199	(65,199)
Net investment income		187,030	(187,030)
Benefit payments, including refunds of member contributions	(917,712)	(917,712)	-
Administrative expense		-	-
Other		(627)	627
Net Changes	<u>542,549</u>	<u>1,161</u>	<u>541,388</u>
Balances at 6/30/19	<u>\$ 18,517,975</u>	<u>\$ 4,405,173</u>	<u>\$ 14,112,802</u>
Return on Investments		4.3%	

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
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Components of Employer's Pension Expense for the Fiscal Year Ended June 30, 2019

Note	Description	Amount
A	Service Cost	\$ 305,409
B	Interest on the total pension liability	875,828
A	Changes of benefit terms	-
C	Differences between expected and actual experience	109,005
C	Changes of assumptions	(59,598)
A	Employee contributions	(65,199)
D	Projected earnings on pension plan investments	(215,554)
C	Differences between expected and actual earnings on plan investments	(7,220)
A	Pension plan administrative expense	-
A	Other changes in fiduciary net position	627
Total Pension Expense		\$ 943,298

Notes:

A Provided in the Changes in Net Pension Liability exhibit.

B Based on the following calculation:

	Amount for Period (a)	Portion of Period (b)	Projected Rate of Return (c)	Projected Earnings (a) x (b) x (c)
Beginning total pension liability	\$ 17,975,426	100%	5.00%	\$ 898,771
Service Cost (End of Year)	305,409	0%	5.00%	-
Benefit payments, including refunds of employee contributions	(917,712)	50%	5.00%	(22,943)
Total interest on the total pension liability				\$ 875,828

C Provided in the Schedules of Deferrals.

D Based on the following calculation:

	Amount for Period (a)	Portion of Period (b)	Projected Rate of Return (c)	Projected Earnings (a) x (b) x (c)
Beginning plan fiduciary net position	\$ 4,404,012	100%	5.00%	\$ 220,201
Employer contributions	667,271	50%	5.00%	16,682
Employee contributions	65,199	50%	5.00%	1,630
Benefit payments, including refunds of employee contributions	(917,712)	50%	5.00%	(22,943)
Administrative expense and other	(627)	50%	5.00%	(16)
Total Projected Earnings				\$ 215,554

City of Bluefield, West Virginia Firemen’s Pension and Relief Fund
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Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At June 30, 2019, the Employer reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 276,897	\$ 144,038
Changes of assumptions	-	547,039
Net difference between projected and actual earnings on pension plan investments	-	99,731
Total	\$ 276,897	\$ 790,808

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended June 30:	
2020	\$ (380,381)
2021	(190,852)
2022	51,618
2023	5,704
2024	-
Thereafter	-

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
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Changes in the Employer's Net Pension Liability and Related Ratios
 Last 10 Fiscal Years

Total pension liability	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Service cost	\$ 305,409	\$ 334,513	\$ 343,894	\$ 198,351	\$ 261,956	\$ 248,401	\$ -	\$ -	\$ -	\$ -
Interest	875,828	841,226	840,313	809,292	780,962	763,367	-	-	-	-
Changes of benefit terms	-	-	-	-	-	-	-	-	-	-
Differences between expected and actual experience	279,024	(347,114)	526,188	(117,054)	152,857	-	-	-	-	-
Changes of assumptions	-	(1,318,293)	-	3,162,943	(1,026,161)	-	-	-	-	-
Benefit payments, including refunds of member contributions	(917,712)	(817,337)	(806,910)	(813,741)	(731,716)	(658,888)	-	-	-	-
Net change in total pension liability	542,549	(1,307,005)	903,485	3,239,791	(562,102)	352,880	-	-	-	-
Total pension liability - beginning	17,975,426	19,282,431	18,378,946	15,139,155	15,701,257	15,348,377	-	-	-	-
Total pension liability - ending (a)	\$ 18,517,975	\$ 17,975,426	\$ 19,282,431	\$ 18,378,946	\$ 15,139,155	\$ 15,701,257	\$ -	\$ -	\$ -	\$ -
Plan fiduciary net position	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Contributions - employer (including Premium Tax Allocation)	\$ 667,271	\$ 630,721	\$ 622,496	\$ 568,649	\$ 730,967	\$ 524,943	\$ -	\$ -	\$ -	\$ -
Contributions - member	65,199	57,693	54,175	54,875	55,668	55,381	-	-	-	-
Net investment income	187,030	306,364	368,996	88,757	81,671	515,010	-	-	-	-
Benefit payments, including refunds of member contributions	(917,712)	(817,337)	(806,910)	(813,741)	(731,716)	(658,888)	-	-	-	-
Administrative expense	-	(86)	-	(150)	(670)	-	-	-	-	-
Other	(627)	6,746	836	1,342	-	-	-	-	-	-
Net change in plan fiduciary net position	\$ 1,161	\$ 184,101	\$ 239,593	\$ (100,268)	\$ 135,920	\$ 436,446	\$ -	\$ -	\$ -	\$ -
Plan fiduciary net position - beginning	4,404,012	4,219,912	3,980,319	4,080,587	3,944,667	3,503,157	-	-	-	-
Plan fiduciary net position - ending (b)	\$ 4,405,173	\$ 4,404,012	\$ 4,219,912	\$ 3,980,319	\$ 4,080,587	\$ 3,939,603	\$ -	\$ -	\$ -	\$ -
Employer's net pension liability - ending (a)-(b)	\$ 14,112,802	\$ 13,571,414	\$ 15,062,519	\$ 14,398,627	\$ 11,058,568	\$ 11,761,654	\$ -	\$ -	\$ -	\$ -
Plan fiduciary net position as a percentage of the total pension liability	23.79%	24.50%	21.88%	21.66%	26.95%	25.09%	0.00%	0.00%	0.00%	0.00%
Covered payroll	\$ 688,341	\$ 657,549	\$ 684,729	\$ 597,873	\$ 707,540	\$ 672,836	\$ -	\$ -	\$ -	\$ -
Employer's net pension liability as a percentage of covered payroll	2050.26%	2063.94%	2199.78%	2408.31%	1562.96%	1748.07%	0.00%	0.00%	0.00%	0.00%
Expected average remaining service years of all participants	4.00	3.42	3.44	3.34	3.69	-	-	-	-	-

Notes to Schedule:

Benefit changes: There were no changes for FY2019.

Changes of assumptions: The discount rate changed from 5.0000% to 5.0000%.

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2019 Measurement Date



Schedule of Employer Contributions
 Last 10 Fiscal Years

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially determined contribution	\$ 1,064,522	\$ 904,672	\$ 965,489	\$ 865,329	\$ 683,027	\$ 702,186	\$ 716,841	\$ -	\$ -	\$ -
Contributions in relation to the actuarially determined contribution										
Employer provided	445,211	416,086	419,150	333,140	366,101	315,699	296,663	-	-	-
State provided	222,060	214,635	203,346	235,509	364,866	209,244	210,734	-	-	-
Contribution deficiency (excess)	<u>\$ 397,251</u>	<u>\$ 273,951</u>	<u>\$ 342,993</u>	<u>\$ 296,680</u>	<u>\$ (47,940)</u>	<u>\$ 177,243</u>	<u>\$ 209,444</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered payroll	\$ 688,341	\$ 657,549	\$ 684,729	\$ 597,873	\$ 707,540	\$ 672,836	\$ 719,372	\$ -	\$ -	\$ -
Contributions as a percentage of covered employee payroll	96.94%	96.00%	91.00%	95.00%	103.00%	78.00%	71.00%	0.00%	0.00%	0.00%

Notes to Schedule

Valuation date:

Actuarially determined contribution amounts are calculated as of the beginning of the fiscal year (July 1) for the year immediately following the fiscal year. Actuarial valuations are performed every year.

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry Age Normal
Amortization method	Level Dollar
Remaining amortization period	32.5 years
Asset valuation method	Market Value
Inflation	2.75 percent
Salary increases	Rates vary by years of service
Investment rate of return	5.00 percent, net of pension plan investment expense, including inflation
Retirement age	Rates vary by age
Mortality	RP-2014 Blue Collar Mortality Table with generational projection using Scale MP-2014

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
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Schedule of Differences between Projected and Actual Earnings on Pension Plan Investments

In conformity with paragraph 33b of Statement 68, the effects of differences between projected and actual earnings on pension plan investments are recognized in pension expense using a systematic and rational method over a closed five-year period, beginning in the current reporting period. The following table illustrates the application of this requirement.

Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Projected and Actual Earnings on Plan Investments											
Year	Differences between Projected and Actual Earnings on Pension Plan Investments	Recognition Period (Years)	2015	2016	2017	2018	2019	2020	2021	2022	2023
2015	\$ 116,919	5	\$ 23,384	23,384	23,384	23,384	23,383				
2016	130,477	5		\$ 26,095	26,095	26,095	26,095	26,097			
2017	(192,793)	5			\$ (38,559)	(38,559)	(38,559)	(38,559)	(38,557)		
2018	(119,219)	5				\$ (23,844)	(23,844)	(23,844)	(23,844)	(23,843)	
2019	28,524	5					\$ 5,705	5,705	5,705	5,705	5,704
Net increase (decrease) in pension expense							\$ (7,220)	\$ (30,601)	\$ (56,696)	\$ (18,138)	\$ 5,704

Deferred Outflows of Resources and Deferred Inflows of Resources Arising from Differences between Projected and Actual Earnings on Pension Plan Investments

Year	Investment Earnings Less than Projected (a)	Investment Earnings Greater Than Projected (b)	Amounts Recognized in Pension Expense Through June 30, 2019 (c)	Balances at June 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2015	\$ 116,919	\$ -	\$ 116,919	\$ -	\$ -
2016	130,477	-	104,380	26,097	-
2017	-	192,793	115,677	-	77,116
2018	-	119,219	47,688	-	71,531
2019	28,524	-	5,705	22,819	-
				\$ 48,916	\$ 148,647

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
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Schedule of Differences between Expected and Actual Experience

In conformity with paragraph 33a of Statement 68, the effects of differences between expected and actual experience are recognized in pension expense, beginning in the current reporting period, using a systematic and rational method over a closed period equal to the average of the remaining service lives of all employees that are provided with pensions through the pension plan (active and inactive employees), determined as of the beginning of the measurement period. The following table illustrates the application of this requirement.

Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Expected and Actual Experience																
Year	Differences between Expected and Actual Experience	Recognition Period (Years)	Prior	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Thereafter	
Prior	\$ -		\$ -													
2014	-	1		\$ -												
2015	152,857	3.688682			\$ 41,439	41,439	41,439	28,540								
2016	(117,054)	3.344772				\$ (34,996)	(34,996)	(34,996)	(12,066)							
2017	526,188	3.442455					\$ 152,853	152,853	152,853	67,629						
2018	(347,114)	3.418569						\$ (101,538)	(101,538)	(101,538)	(42,500)					
2019	279,024	4						\$ 69,756	69,756	69,756	69,756	69,756				
Net increase (decrease) in pension expense									\$ 109,005	\$ 35,847	\$ 27,256	\$ 69,756	\$ -	\$ -	\$ -	

Deferred Outflows of Resources and Deferred Inflows of Resources Arising from Differences between Expected and Actual Experience

Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in Pension Expense Through June 30, 2019 (c)	Balances at June 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	\$ -	\$ -	\$ -	\$ -	\$ -
2014	-	-	-	-	-
2015	152,857	-	152,857	-	-
2016	-	117,054	117,054	-	-
2017	526,188	-	458,559	67,629	-
2018	-	347,114	203,076	-	144,038
2019	279,024	-	69,756	209,268	-
				\$ 276,897	\$ 144,038

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
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Schedule of Changes of Assumptions

In conformity with paragraph 33a of Statement 68, the effects of changes of assumptions should be recognized in pension expense, beginning in the current reporting period, using a systematic and rational method over a closed period equal to the average of the remaining service lives of all employees that are provided with pensions through the pension plan (active and inactive employees), determined as of the beginning of the measurement period. The following table illustrates the application of this requirement.

Increase (Decrease) in Pension Expense Arising from the Effects of Changes of Assumptions															
Year	Changes of Assumptions	Recognition Period (Years)	Prior	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Thereafter
Prior	\$ -		\$ -	-	-	-	-	-	-	-	-	-	-	-	-
2014	-	1		\$ -											
2015	(1,026,161)	3.688682			\$ (278,192)	(278,192)	(278,192)	(191,585)							
2016	3,162,943	3.344772				\$ 945,638	945,638	945,638	326,029						
2017	-	3.442455					\$ -	-	-	-					
2018	(1,318,293)	3.418569						\$ (385,627)	(385,627)	(385,627)	(161,412)				
2019	-	4							\$ -	-	-	-	-	-	-
Net increase (decrease) in pension expense									\$ (59,598)	\$ (385,627)	\$ (161,412)	\$ -	\$ -	\$ -	\$ -

Deferred Outflows of Resources and Deferred Inflows of Resources Arising from Changes of Assumptions

Year	Increases in the Total Pension Liability (a)	Decreases in the Total Pension Liability (b)	Amounts Recognized in Pension Expense Through June 30, 2019 (c)	Balances at June 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	\$ -	\$ -	\$ -	\$ -	\$ -
2014	-	-	-	-	-
2015	-	1,026,161	1,026,161	-	-
2016	3,162,943	-	3,162,943	-	-
2017	-	-	-	-	-
2018	-	1,318,293	771,254	-	547,039
2019	-	-	-	-	-
				\$ -	\$ 547,039

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
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Projection of Pension Plan's Fiduciary Net Position (Dollar amounts in thousands)

Fiscal Year	Gross Normal Cost (BOY)			Employee Contributions (BOY)			Employer Normal Cost (BOY)			Expenses (MOY)			Employer Contributions (MOY)			Premium Tax Allocation (MOY)		
	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total
2019	\$ 290,866	\$ -	\$ 290,866	\$ 56,836	\$ -	\$ 56,836	\$ 234,030	\$ -	\$ 234,030	\$ 3,757	\$ -	\$ 3,757	\$ 445,213	\$ -	\$ 445,213	\$ 222,060	\$ -	\$ 222,060
2020	\$ 290,461	\$ 20,143	\$ 310,604	\$ 56,945	\$ 4,264	\$ 61,209	\$ 233,516	\$ 15,879	\$ 249,395	\$ 3,966	\$ -	\$ 3,966	\$ 460,107	\$ 16,271	\$ 476,378	\$ 240,729	\$ -	\$ 240,729
2021	\$ 284,470	\$ 41,132	\$ 325,602	\$ 56,069	\$ 8,712	\$ 64,781	\$ 228,401	\$ 32,420	\$ 260,821	\$ 4,002	\$ 73	\$ 4,075	\$ 476,430	\$ 33,294	\$ 509,724	\$ 246,595	\$ -	\$ 246,595
2022	\$ 277,193	\$ 69,465	\$ 346,658	\$ 54,968	\$ 14,723	\$ 69,691	\$ 222,225	\$ 54,742	\$ 276,967	\$ 4,037	\$ 150	\$ 4,187	\$ 489,161	\$ 56,244	\$ 545,405	\$ 254,592	\$ -	\$ 254,592
2023	\$ 275,628	\$ 93,627	\$ 369,255	\$ 54,813	\$ 19,854	\$ 74,667	\$ 220,815	\$ 73,773	\$ 294,588	\$ 4,071	\$ 231	\$ 4,302	\$ 507,757	\$ 75,826	\$ 583,583	\$ 262,808	\$ -	\$ 262,808
2024	\$ 276,372	\$ 116,393	\$ 392,765	\$ 55,069	\$ 24,694	\$ 79,763	\$ 221,303	\$ 91,699	\$ 313,002	\$ 4,104	\$ 316	\$ 4,420	\$ 530,154	\$ 94,280	\$ 624,434	\$ 271,251	\$ -	\$ 271,251
2025	\$ 279,368	\$ 137,784	\$ 417,152	\$ 55,746	\$ 29,246	\$ 84,992	\$ 223,622	\$ 108,538	\$ 332,160	\$ 4,136	\$ 326	\$ 4,462	\$ 556,600	\$ 111,544	\$ 668,144	\$ 282,791	\$ -	\$ 282,791
2026	\$ 284,427	\$ 158,060	\$ 442,487	\$ 56,816	\$ 33,565	\$ 90,381	\$ 227,611	\$ 124,495	\$ 352,106	\$ 4,166	\$ 419	\$ 4,585	\$ 586,926	\$ 127,988	\$ 714,914	\$ 291,788	\$ -	\$ 291,788
2027	\$ 289,447	\$ 177,931	\$ 467,378	\$ 57,911	\$ 37,800	\$ 95,711	\$ 231,536	\$ 140,131	\$ 371,667	\$ 4,195	\$ 432	\$ 4,627	\$ 620,934	\$ 144,024	\$ 764,958	\$ 301,032	\$ -	\$ 301,032
2028	\$ 296,896	\$ 198,590	\$ 495,486	\$ 59,431	\$ 42,205	\$ 101,636	\$ 237,465	\$ 156,385	\$ 393,850	\$ 4,310	\$ 444	\$ 4,754	\$ 657,814	\$ 160,691	\$ 818,505	\$ 310,531	\$ -	\$ 310,531
2029	\$ 304,802	\$ 219,236	\$ 524,038	\$ 61,031	\$ 46,611	\$ 107,642	\$ 243,771	\$ 172,625	\$ 416,396	\$ 4,248	\$ 548	\$ 4,796	\$ 698,364	\$ 177,436	\$ 875,800	\$ 321,411	\$ -	\$ 321,411
2030	\$ 313,016	\$ 240,752	\$ 553,768	\$ 62,686	\$ 51,204	\$ 113,890	\$ 250,330	\$ 189,548	\$ 439,878	\$ 4,365	\$ 563	\$ 4,928	\$ 742,314	\$ 194,792	\$ 937,106	\$ 331,473	\$ -	\$ 331,473
2031	\$ 315,547	\$ 263,340	\$ 578,887	\$ 63,553	\$ 56,028	\$ 119,581	\$ 251,994	\$ 207,312	\$ 459,306	\$ 4,390	\$ 580	\$ 4,970	\$ 789,691	\$ 213,012	\$ 1,002,703	\$ 341,811	\$ -	\$ 341,811
2032	\$ 316,596	\$ 295,736	\$ 612,332	\$ 64,223	\$ 62,955	\$ 127,178	\$ 252,373	\$ 232,781	\$ 485,154	\$ 4,413	\$ 694	\$ 5,107	\$ 833,668	\$ 239,224	\$ 1,072,892	\$ 352,434	\$ -	\$ 352,434
2033	\$ 316,156	\$ 325,306	\$ 641,462	\$ 64,429	\$ 69,278	\$ 133,707	\$ 251,727	\$ 256,028	\$ 507,755	\$ 4,434	\$ 813	\$ 5,247	\$ 884,830	\$ 263,164	\$ 1,147,994	\$ 363,349	\$ -	\$ 363,349
2034	\$ 308,678	\$ 363,421	\$ 672,099	\$ 63,443	\$ 77,437	\$ 140,880	\$ 245,235	\$ 285,984	\$ 531,219	\$ 4,452	\$ 939	\$ 5,391	\$ 934,369	\$ 293,985	\$ 1,228,354	\$ 386,157	\$ -	\$ 386,157
2035	\$ 300,135	\$ 406,378	\$ 706,513	\$ 62,328	\$ 86,638	\$ 148,966	\$ 237,807	\$ 319,740	\$ 557,547	\$ 4,574	\$ 861	\$ 5,435	\$ 985,842	\$ 328,497	\$ 1,314,339	\$ 398,020	\$ -	\$ 398,020
2036	\$ 287,505	\$ 450,866	\$ 738,371	\$ 60,285	\$ 96,171	\$ 156,456	\$ 227,220	\$ 354,695	\$ 581,915	\$ 4,594	\$ 994	\$ 5,584	\$ 1,041,895	\$ 364,448	\$ 1,406,343	\$ 410,208	\$ -	\$ 410,208
2037	\$ 269,712	\$ 502,127	\$ 771,839	\$ 57,164	\$ 107,161	\$ 164,325	\$ 212,548	\$ 394,966	\$ 607,514	\$ 4,716	\$ 1,022	\$ 5,738	\$ 1,099,045	\$ 405,742	\$ 1,504,787	\$ 422,732	\$ -	\$ 422,732
2038	\$ 236,303	\$ 554,993	\$ 791,296	\$ 50,538	\$ 118,499	\$ 169,037	\$ 185,765	\$ 436,494	\$ 622,259	\$ 4,615	\$ 1,281	\$ 5,896	\$ 1,161,568	\$ 448,554	\$ 1,610,122	\$ 435,600	\$ -	\$ 435,600
2039	\$ 194,323	\$ 629,709	\$ 824,032	\$ 41,890	\$ 134,539	\$ 176,429	\$ 152,433	\$ 495,170	\$ 647,603	\$ 4,742	\$ 1,316	\$ 6,058	\$ 1,214,117	\$ 508,714	\$ 1,722,831	\$ 453,948	\$ -	\$ 453,948
2040	\$ 154,230	\$ 700,295	\$ 854,525	\$ 33,598	\$ 149,693	\$ 183,291	\$ 120,632	\$ 550,602	\$ 671,234	\$ 4,629	\$ 1,596	\$ 6,225	\$ 1,277,634	\$ 565,795	\$ 1,843,429	\$ 467,684	\$ -	\$ 467,684
2041	\$ 111,975	\$ 776,908	\$ 888,883	\$ 24,614	\$ 166,166	\$ 190,780	\$ 87,361	\$ 610,742	\$ 698,103	\$ 4,631	\$ 1,765	\$ 6,396	\$ 1,344,880	\$ 627,589	\$ 1,972,469	\$ 481,798	\$ -	\$ 481,798
2042	\$ 82,489	\$ 846,702	\$ 929,191	\$ 18,251	\$ 181,208	\$ 199,459	\$ 64,238	\$ 665,494	\$ 729,732	\$ 4,630	\$ 1,942	\$ 6,572	\$ 1,426,672	\$ 683,870	\$ 2,110,542	\$ 496,300	\$ -	\$ 496,300
2043	\$ 62,738	\$ 903,558	\$ 966,296	\$ 14,045	\$ 193,503	\$ 207,548	\$ 48,693	\$ 710,055	\$ 758,748	\$ 4,757	\$ 1,996	\$ 6,753	\$ 1,528,694	\$ 729,586	\$ 2,258,280	\$ 523,324	\$ -	\$ 523,324
2044	\$ 47,462	\$ 954,964	\$ 1,002,426	\$ 10,832	\$ 204,646	\$ 215,478	\$ 36,630	\$ 750,318	\$ 786,948	\$ 4,752	\$ 2,187	\$ 6,939	\$ 1,645,326	\$ 771,034	\$ 2,416,360	\$ 538,991	\$ -	\$ 538,991
2045	\$ 35,990	\$ 1,004,376	\$ 1,040,366	\$ 8,391	\$ 215,367	\$ 223,758	\$ 27,599	\$ 789,009	\$ 816,608	\$ 4,743	\$ 2,250	\$ 6,993	\$ 1,774,761	\$ 810,744	\$ 2,585,505	\$ 555,088	\$ -	\$ 555,088
2046	\$ 29,129	\$ 1,053,651	\$ 1,082,780	\$ 6,919	\$ 226,057	\$ 232,976	\$ 22,210	\$ 827,594	\$ 849,804	\$ 4,587	\$ 2,598	\$ 7,185	\$ 1,507,662	\$ 850,629	\$ 2,358,291	\$ -	\$ -	\$ -
2047	\$ 21,652	\$ 1,103,128	\$ 1,124,780	\$ 5,183	\$ 236,788	\$ 241,971	\$ 16,469	\$ 866,340	\$ 882,809	\$ 4,566	\$ 2,817	\$ 7,383	\$ 21,443	\$ 890,551	\$ 911,994	\$ -	\$ -	\$ -
2048	\$ 12,372	\$ 1,158,543	\$ 1,170,915	\$ 2,986	\$ 248,797	\$ 251,783	\$ 9,386	\$ 909,746	\$ 919,132	\$ 4,692	\$ 2,745	\$ 7,437	\$ 14,309	\$ 934,957	\$ 949,266	\$ -	\$ -	\$ -
2049	\$ 8,156	\$ 1,214,058	\$ 1,222,214	\$ 1,994	\$ 260,821	\$ 262,815	\$ 6,162	\$ 953,237	\$ 959,399	\$ 4,666	\$ 2,976	\$ 7,642	\$ 10,981	\$ 979,753	\$ 990,734	\$ -	\$ -	\$ -
2050	\$ 4,527	\$ 1,270,056	\$ 1,274,583	\$ 1,140	\$ 272,946	\$ 274,086	\$ 3,387	\$ 997,110	\$ 1,000,497	\$ 4,635	\$ 3,060	\$ 7,695	\$ 8,105	\$ 1,024,794	\$ 1,032,899	\$ -	\$ -	\$ -
2051	\$ 2,715	\$ 1,327,683	\$ 1,330,398	\$ 694	\$ 285,419	\$ 286,113	\$ 2,021	\$ 1,042,264	\$ 1,044,285	\$ 4,598	\$ 3,309	\$ 7,907	\$ 6,669	\$ 1,071,312	\$ 1,077,981	\$ -	\$ -	\$ -
2052	\$ 1,975	\$ 1,386,912	\$ 1,388,887	\$ 505	\$ 298,232	\$ 298,737	\$ 1,470	\$ 1,088,680	\$ 1,090,150	\$ 4,556	\$ 3,568	\$ 8,124	\$ 6,062	\$ 1,119,133	\$ 1,125,195	\$ -	\$ -	\$ -
2053	\$ 1,404	\$ 1,447,315	\$ 1,448,719	\$ 359	\$ 311,301	\$ 311,660	\$ 1,045	\$ 1,136,014	\$ 1,137,059	\$ 4,508	\$ 3,669	\$ 8,177	\$ 5,579	\$ 1,167,737	\$ 1,173,316	\$ -	\$ -	\$ -
2054	\$ 943	\$ 1,509,054	\$ 1,509,997	\$ 241	\$ 324,660	\$ 324,901	\$ 702	\$ 1,184,394	\$ 1,185,096	\$ 4,454	\$ 3,948	\$ 8,402	\$ 5,174	\$ 1,217,591	\$ 1,222,765	\$ -	\$ -	\$ -
2055	\$ 633	\$ 1,571,923	\$ 1,572,556	\$ 162	\$ 338,261	\$ 338,423	\$ 471	\$ 1,233,662	\$ 1,234,133	\$ 4,576	\$ 3,877	\$ 8,453	\$ 5,060	\$ 1,268,004	\$ 1,273,064	\$ -	\$ -	\$ -
2056	\$ 425	\$ 1,636,329	\$ 1,636,754	\$ 108	\$ 352,197	\$ 352,305	\$ 317	\$ 1,284,132	\$ 1,284,449	\$ 4,514	\$ 4,171	\$ 8,685	\$ 4,839	\$ 1,320,015	\$ 1,324,854	\$ -	\$ -	\$ -
2057	\$ -	\$ 1,701,164	\$ 1,701,164	\$ -	\$ 366,228	\$ 366,228	\$ -	\$ 1,334,936	\$ 1,334,936	\$ 4,445	\$ 4,479	\$ 8,924	\$ 4,446	\$ 1,372,381	\$ 1,376,827	\$ -	\$ -	\$ -
2058	\$ -	\$ 1,767,373	\$ 1,767,373	\$ -	\$ 380,552	\$ 380,552	\$ -	\$ 1,386,821	\$ 1,386,821	\$ 4,369	\$ 4,605	\$ 8,974	\$ 4,368	\$ 1,425,674	\$ 1,430,042	\$ -	\$ -	\$ -
2059	\$ -	\$ 1,834,761	\$ 1,834,761	\$ -	\$ 395,130	\$ 395,130	\$ -	\$ 1,439,631	\$ 1,439,631	\$ 4,285	\$ 4,936	\$ 9,221	\$ 4,285	\$ 1,480,119	\$ 1,484,404	\$ -	\$ -	\$ -

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2019 Measurement Date



Projection of Pension Plan's Fiduciary Net Position (Dollar amounts in thousands)

Fiscal Year	Actuarial Accrued Liability (BOY)			Closed Group Asset Projection						
	Current Members	Future Members	Total	Fiduciary Net Position (boy)	Funded Ratio (boy)	Projected EEC Contributions (moy)	Projected ER Contrib + Premium Tax (moy)	Projected BP (moy)	Projected Admin Expenses (moy)	Projected Investment Earnings
2019	\$ 18,241,162	\$ -	\$ 18,241,162	\$ 4,405,173	24.15%	\$ 58,240	\$ 667,273	\$ 872,317	\$ 3,757	\$ 216,541
2020	\$ 18,564,263	\$ -	\$ 18,564,263	\$ 4,471,153	24.08%	\$ 58,351	\$ 700,836	\$ 883,047	\$ 3,966	\$ 220,401
2021	\$ 18,892,606	\$ 21,027	\$ 18,913,633	\$ 4,563,728	24.16%	\$ 57,454	\$ 723,025	\$ 941,513	\$ 4,002	\$ 224,111
2022	\$ 19,171,166	\$ 64,819	\$ 19,235,985	\$ 4,622,803	24.11%	\$ 56,325	\$ 743,753	\$ 969,922	\$ 4,037	\$ 226,846
2023	\$ 19,426,903	\$ 139,989	\$ 19,566,892	\$ 4,675,768	24.07%	\$ 56,167	\$ 770,565	\$ 989,635	\$ 4,071	\$ 229,665
2024	\$ 19,673,583	\$ 243,472	\$ 19,917,055	\$ 4,738,460	24.09%	\$ 56,429	\$ 801,405	\$ 1,005,474	\$ 4,104	\$ 233,176
2025	\$ 19,917,148	\$ 374,958	\$ 20,292,106	\$ 4,819,892	24.20%	\$ 57,123	\$ 839,391	\$ 1,017,661	\$ 4,136	\$ 237,901
2026	\$ 20,163,550	\$ 534,175	\$ 20,697,725	\$ 4,932,510	24.46%	\$ 58,219	\$ 878,714	\$ 1,028,003	\$ 4,166	\$ 244,274
2027	\$ 20,416,986	\$ 721,118	\$ 21,138,104	\$ 5,081,547	24.89%	\$ 59,341	\$ 921,966	\$ 1,038,564	\$ 4,195	\$ 252,560
2028	\$ 20,677,543	\$ 936,665	\$ 21,614,208	\$ 5,272,656	25.50%	\$ 60,899	\$ 968,345	\$ 1,043,347	\$ 4,310	\$ 263,178
2029	\$ 20,954,048	\$ 1,183,104	\$ 22,137,152	\$ 5,517,421	26.33%	\$ 62,538	\$ 1,019,775	\$ 1,049,356	\$ 4,248	\$ 276,580
2030	\$ 21,246,523	\$ 1,462,027	\$ 22,708,550	\$ 5,822,710	27.41%	\$ 64,234	\$ 1,073,787	\$ 1,052,305	\$ 4,365	\$ 293,144
2031	\$ 21,559,224	\$ 1,775,945	\$ 23,335,169	\$ 6,197,205	28.75%	\$ 65,122	\$ 1,131,502	\$ 1,062,752	\$ 4,390	\$ 313,058
2032	\$ 21,879,513	\$ 2,127,515	\$ 24,007,028	\$ 6,639,745	30.35%	\$ 65,809	\$ 1,186,102	\$ 1,072,945	\$ 4,413	\$ 336,298
2033	\$ 22,206,473	\$ 2,528,540	\$ 24,735,013	\$ 7,150,597	32.20%	\$ 66,020	\$ 1,248,179	\$ 1,086,160	\$ 4,434	\$ 363,052
2034	\$ 22,535,778	\$ 2,978,157	\$ 25,513,935	\$ 7,737,254	34.33%	\$ 65,010	\$ 1,320,526	\$ 1,108,196	\$ 4,452	\$ 393,602
2035	\$ 22,851,116	\$ 3,487,343	\$ 26,338,459	\$ 8,403,744	36.78%	\$ 63,867	\$ 1,383,862	\$ 1,128,084	\$ 4,574	\$ 427,968
2036	\$ 23,152,871	\$ 4,063,642	\$ 27,216,513	\$ 9,146,783	39.51%	\$ 61,774	\$ 1,452,103	\$ 1,166,227	\$ 4,590	\$ 465,811
2037	\$ 23,417,368	\$ 4,711,496	\$ 28,128,864	\$ 9,955,654	42.51%	\$ 58,576	\$ 1,521,777	\$ 1,200,895	\$ 4,716	\$ 507,037
2038	\$ 23,640,883	\$ 5,440,977	\$ 29,081,860	\$ 10,837,433	45.84%	\$ 51,786	\$ 1,597,168	\$ 1,266,368	\$ 4,615	\$ 551,206
2039	\$ 23,773,404	\$ 6,257,224	\$ 30,030,628	\$ 11,766,610	49.49%	\$ 42,924	\$ 1,668,065	\$ 1,333,314	\$ 4,742	\$ 597,540
2040	\$ 23,799,873	\$ 7,186,841	\$ 30,986,714	\$ 12,737,082	53.52%	\$ 34,428	\$ 1,745,318	\$ 1,398,700	\$ 4,629	\$ 646,150
2041	\$ 23,718,567	\$ 8,232,317	\$ 31,950,884	\$ 13,759,649	58.01%	\$ 25,222	\$ 1,826,678	\$ 1,463,882	\$ 4,631	\$ 697,450
2042	\$ 23,522,036	\$ 9,401,945	\$ 32,923,981	\$ 14,840,486	63.09%	\$ 18,702	\$ 1,922,972	\$ 1,503,250	\$ 4,630	\$ 752,737
2043	\$ 23,244,378	\$ 10,685,042	\$ 33,929,420	\$ 16,027,016	68.95%	\$ 14,392	\$ 2,052,018	\$ 1,524,705	\$ 4,757	\$ 814,611
2044	\$ 22,910,114	\$ 12,057,808	\$ 34,967,922	\$ 17,378,576	75.86%	\$ 11,099	\$ 2,184,317	\$ 1,536,838	\$ 4,752	\$ 885,075
2045	\$ 22,530,664	\$ 13,506,201	\$ 36,036,865	\$ 18,917,476	83.96%	\$ 8,598	\$ 2,329,849	\$ 1,540,863	\$ 4,743	\$ 965,453
2046	\$ 22,116,072	\$ 15,023,495	\$ 37,139,567	\$ 20,675,771	93.49%	\$ 7,090	\$ 1,507,662	\$ 1,536,588	\$ 4,587	\$ 1,033,136
2047	\$ 21,677,927	\$ 16,609,082	\$ 38,287,009	\$ 21,682,483	100.02%	\$ 5,311	\$ 21,443	\$ 1,536,247	\$ 4,566	\$ 1,046,734
2048	\$ 21,210,373	\$ 18,265,170	\$ 39,475,543	\$ 21,215,158	100.02%	\$ 3,060	\$ 14,309	\$ 1,534,414	\$ 4,692	\$ 1,023,178
2049	\$ 20,711,576	\$ 20,000,829	\$ 40,712,405	\$ 20,716,599	100.02%	\$ 2,043	\$ 10,981	\$ 1,522,392	\$ 4,666	\$ 998,441
2050	\$ 20,195,731	\$ 21,819,664	\$ 42,015,395	\$ 20,201,005	100.03%	\$ 1,168	\$ 8,105	\$ 1,508,477	\$ 4,635	\$ 972,913
2051	\$ 19,664,542	\$ 23,725,814	\$ 43,390,356	\$ 19,670,080	100.03%	\$ 711	\$ 6,669	\$ 1,490,738	\$ 4,598	\$ 946,759
2052	\$ 19,123,068	\$ 25,724,505	\$ 44,847,573	\$ 19,128,883	100.03%	\$ 517	\$ 6,062	\$ 1,470,283	\$ 4,556	\$ 920,185
2053	\$ 18,574,703	\$ 27,822,094	\$ 46,396,797	\$ 18,580,808	100.03%	\$ 368	\$ 5,579	\$ 1,448,832	\$ 4,508	\$ 893,297
2054	\$ 18,020,301	\$ 30,022,239	\$ 48,042,540	\$ 18,026,712	100.04%	\$ 247	\$ 5,174	\$ 1,426,205	\$ 4,454	\$ 866,139
2055	\$ 17,460,881	\$ 32,328,019	\$ 49,788,900	\$ 17,467,613	100.04%	\$ 166	\$ 5,060	\$ 1,402,398	\$ 4,576	\$ 838,764
2056	\$ 16,897,559	\$ 34,740,383	\$ 51,637,942	\$ 16,904,629	100.04%	\$ 111	\$ 4,839	\$ 1,377,325	\$ 4,514	\$ 811,229
2057	\$ 16,331,545	\$ 37,259,948	\$ 53,591,493	\$ 16,338,969	100.05%	\$ -	\$ 4,446	\$ 1,351,503	\$ 4,445	\$ 783,573
2058	\$ 15,763,244	\$ 39,884,607	\$ 55,647,851	\$ 15,771,040	100.05%	\$ -	\$ 4,368	\$ 1,323,683	\$ 4,369	\$ 755,864
2059	\$ 15,195,035	\$ 42,612,070	\$ 57,807,105	\$ 15,203,220	100.05%	\$ -	\$ 4,285	\$ 1,294,726	\$ 4,285	\$ 728,188

City of Bluefield, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2019 Measurement Date



Projection of Pension Plan's Fiduciary Net Position (Dollar amounts in thousands)

Calculation of Single Equivalent Rate					
Fiscal Year	"Funded" Portion of BP	"Unfunded" Portion of BP	PV of "Funded" BP	PV of "Unfunded" BP	PV of BP Using a Single DR
2019	\$ 872,317	\$ -	\$ 851,294	\$ -	\$ 851,294
2020	\$ 883,047	\$ -	\$ 820,729	\$ -	\$ 820,729
2021	\$ 941,513	\$ -	\$ 833,399	\$ -	\$ 833,399
2022	\$ 969,922	\$ -	\$ 817,663	\$ -	\$ 817,663
2023	\$ 989,635	\$ -	\$ 794,554	\$ -	\$ 794,554
2024	\$ 1,005,474	\$ -	\$ 768,829	\$ -	\$ 768,829
2025	\$ 1,017,661	\$ -	\$ 741,093	\$ -	\$ 741,093
2026	\$ 1,028,003	\$ -	\$ 712,976	\$ -	\$ 712,976
2027	\$ 1,038,564	\$ -	\$ 686,000	\$ -	\$ 686,000
2028	\$ 1,043,347	\$ -	\$ 656,342	\$ -	\$ 656,342
2029	\$ 1,049,356	\$ -	\$ 628,688	\$ -	\$ 628,688
2030	\$ 1,052,305	\$ -	\$ 600,433	\$ -	\$ 600,433
2031	\$ 1,062,752	\$ -	\$ 577,518	\$ -	\$ 577,518
2032	\$ 1,072,945	\$ -	\$ 555,293	\$ -	\$ 555,293
2033	\$ 1,086,160	\$ -	\$ 535,364	\$ -	\$ 535,364
2034	\$ 1,108,196	\$ -	\$ 520,214	\$ -	\$ 520,214
2035	\$ 1,128,084	\$ -	\$ 504,334	\$ -	\$ 504,334
2036	\$ 1,166,227	\$ -	\$ 496,558	\$ -	\$ 496,558
2037	\$ 1,200,895	\$ -	\$ 486,971	\$ -	\$ 486,971
2038	\$ 1,266,368	\$ -	\$ 489,067	\$ -	\$ 489,067
2039	\$ 1,333,314	\$ -	\$ 490,402	\$ -	\$ 490,402
2040	\$ 1,398,700	\$ -	\$ 489,953	\$ -	\$ 489,953
2041	\$ 1,463,882	\$ -	\$ 488,368	\$ -	\$ 488,368
2042	\$ 1,503,250	\$ -	\$ 477,620	\$ -	\$ 477,620
2043	\$ 1,524,705	\$ -	\$ 461,369	\$ -	\$ 461,369
2044	\$ 1,536,838	\$ -	\$ 442,895	\$ -	\$ 442,895
2045	\$ 1,540,863	\$ -	\$ 422,910	\$ -	\$ 422,910
2046	\$ 1,536,588	\$ -	\$ 401,654	\$ -	\$ 401,654
2047	\$ 1,536,247	\$ -	\$ 382,442	\$ -	\$ 382,442
2048	\$ 1,534,414	\$ -	\$ 363,796	\$ -	\$ 363,796
2049	\$ 1,522,392	\$ -	\$ 343,758	\$ -	\$ 343,758
2050	\$ 1,508,477	\$ -	\$ 324,396	\$ -	\$ 324,396
2051	\$ 1,490,738	\$ -	\$ 305,316	\$ -	\$ 305,316
2052	\$ 1,470,283	\$ -	\$ 286,787	\$ -	\$ 286,787
2053	\$ 1,448,832	\$ -	\$ 269,146	\$ -	\$ 269,146
2054	\$ 1,426,205	\$ -	\$ 252,326	\$ -	\$ 252,326
2055	\$ 1,402,398	\$ -	\$ 236,299	\$ -	\$ 236,299
2056	\$ 1,377,325	\$ -	\$ 221,023	\$ -	\$ 221,023
2057	\$ 1,351,503	\$ -	\$ 206,552	\$ -	\$ 206,552
2058	\$ 1,323,683	\$ -	\$ 192,667	\$ -	\$ 192,667
2059	\$ 1,294,726	\$ -	\$ 179,478	\$ -	\$ 179,478
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
#N/A	#N/A	#N/A	#N/A	#N/A	#N/A