

GASB 68 Actuarial Information for the Measurement Period Ending June 30, 2022



Submitted by:

James Ritchie, ASA, EA, FCA, MAAA President of Bolton Retirement 443.573.3924 jritchie@boltonusa.com Jordan McClane, FSA, EA, FCA, MAAA Consulting Actuary 667.218.6935 jmcclane@boltonusa.com



November 29, 2022

Mr. Danny Dillow City Treasurer City of Bluefield 200 Rogers Street Bluefield, WV 24701 Captain Matthew Pettrey
Pension Board Secretary
City of Bluefield
Firemen's Pension and Relief Fund

Re: City of Bluefield Firemen's Pension and Relief Fund
GASB 68 Actuarial Information for the Measurement Period Ending June 30, 2022

Dear Danny,

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 FY 2022. The GASB 67 information has been provided as of June 30, 2022 (the GASB 68 measurement date for FY 2022).

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, 2022 (the City's fiscal year end date) as required by GASB 68. 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, 2021 actuarial valuation rolled forward to June 30, 2022. The methods, assumptions, and participant data used are detailed in the July 1, 2021 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 GASB 67. The calculation of the Actuarially Determined Contribution (ADC) for the fiscal year ending June 30, 2022 is contained in the July 1, 2020 actuarial valuation report. The discount rate assumption may have changed if a blended rate was used for GASB purposes.

The included calculations are based on the valuation discount rate of 5.00%. The plan's expected gross rate of investment return of 5.00% has been blended with the 3.69% 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, 2022. The development of the blended discount rate is included within this report. Since the plan assets are estimated to be sufficient to cover benefit payments throughout the projection period, the liability discount rate used for this June 30, 2022 measurement date is equal to the plan's expected rate of investment return.

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) and is based on the funded status (current and projected), equity exposure, and funding policy.

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.

Mr. Danny Dillow November 29, 2022 Page 2

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 the assumptions; the differences may be significant or material because the 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 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. That 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. 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.

The valuation was completed using both proprietary and third-party models (including software and tools). We have tested these models to ensure they are used for their intended purposes, within their known limitations, and without any known material inconsistencies unless otherwise stated.



Mr. Danny Dillow November 29, 2022 Page 3

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 GASB 68. 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, 2021 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

Jans Pateline

Jordan McClane, FSA, EA, FCA, MAAA

ful Mile



Actuarial Information to Include in the Financial Statements for the June 30, 2022 Measurement Date



Net Pension Liability of the Employer

The components of the net pension liability of the Employer at June 30, 2022, were as follows:

Total pension liability	\$ 16,907,514
Plan fiduciary net position	 (4,553,550)
Employer's net pension liability	\$ 12,353,964
Plan fiduciary net position as a percentage of the total pension liability	26.93%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of July 1, 2021 rolled forward to June 30, 2022 using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation 2.50 percent

Salary increases Rates vary by years of service

Single discount rate (BOY) 5.00% Single discount rate (EOY) 5.00%

Investment rate of return (BOY) 5.00%, net of pension plan investment expense, including inflation Investment rate of return (EOY) 5.00%, net of pension plan investment expense, including inflation

Long-term municpal bond rate (BOY) 1.92% Long-term municpal bond rate (EOY) 3.69%

Mortality SOA PubS-2010(B) with generational projection using Scale MP-2019

Year Fund is projected to be fully funded
Year assets are expected to be depleted
N/A

for a closed plan

The above is a summary of key actuarial assumptions. Full descriptions of the actuarial assumptions are available in the July 1, 2021 actuarial valuation report.

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

		Current	
	1% Decrease 4.00%	Discount Rate 5.00%	1% Increase 6.00%
Employer's net pension liability	\$ 14,768,848	\$ 12,353,964	\$ 10,410,276

City of Bluefield, West Virginia Firemen's Pension and Relief Fund Actuarial Information to Include in the Financial Statements

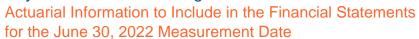
for the June 30, 2022 Measurement Date



Changes in the Net Pension Liability

	lı Total Pension Liability (a)	ncrease (Decrease) Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at 6/30/21	\$ 17,458,436	\$ 5,483,214	\$ 11,975,222
Changes for the year:			
Service cost	242,361		242,361
Interest	849,290		849,290
Changes of benefit terms	-		-
Differences between expected and actual experience	(697,311)		(697,311)
Changes of assumptions	-		-
Contributions - employer (including Premium Tax Allocation)		757,948	(757,948)
Contributions - member		54,388	(54,388)
Net investment income*		(796,593)	796,593
Benefit payments, including refunds of member contributions	(945,262)	(945,262)	-
Administrative expense		(145)	145
Other			-
Net Changes	(550,922)	(929,664)	378,742
Balances at 6/30/22	\$ 16,907,514	\$ 4,553,550	\$ 12,353,964
Return on Investments		(14.7%)	

^{*}The Plan Fiduciary Net Position as of July 1, 2021 provided to Bolton by the City does not match the Plan Fiduciary Net Position as of June 30, 2021 as provided in the prior GASB report. A difference of \$6,785 has been excluded as investment income for the measurement period ending June 30, 2022.





Components of Employer's Pension Expense for the Fiscal Year Ended June 30, 2022

Note	Description	Amount
Α	Service cost	\$ 242,361
В	Interest on the total pension liability	849,290
Α	Changes of benefit terms	-
С	Differences between expected and actual experience	(140,564)
С	Changes of assumptions	(538,872)
Α	Employee contributions	(54,388)
D	Projected earnings on pension plan investments	(270,834)
С	Differences between expected and actual earnings on plan investments	(14,657)
Α	Pension plan administrative expense	145
Α	Other changes in fiduciary net position	-
	Total Pension Expense	\$ 72,481

Notes:

A Provided in the Changes in Net Pension Liability exhibit.

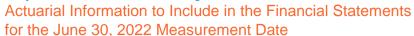
B Based on the following calculation:

		ount for eriod (a)	Portion of Period (b)	Interest Rate (c)	E	rojected arnings x (b) x (c)
Beginning total pension liability	\$ 17	7,458,436	100%	5.00%	\$	872,922
Service cost (End of Year)		242,361	0%	5.00%		-
Benefit payments, including refunds of employee contributions		(945,262)	50%	5.00%		(23,632)
Total interest on the total pension liability					\$	849,290

C Provided in the Schedules of Deferrals.

D Based on the following calculation:

	A	mount for	Portion of	Projected	Р	rojected
		Period	Period	Rate of Return	E	arnings
		(a)	(b)	(c)	(a)	x (b) x (c)
Beginning plan fiduciary net position	\$	5,483,214	100%	5.00%	\$	274,161
Employer contributions		757,948	50%	5.00%		18,949
Employee contributions		54,388	50%	5.00%		1,360
Benefit payments, including refunds of employee contributions		(945,262)	50%	5.00%		(23,632)
Administrative expense and other		(145)	50%	5.00%		(4)
Total Projected Earnings					\$	270,834





Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At June 30, 2022, the Employer reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	ed Outflows Resources	erred Inflows Resources
Differences between expected and actual experience	\$ 43,338	\$ 486,095
Changes of assumptions	-	538,871
Net difference between projected and actual earnings	212,678	
on pension plan investments		-
Total	\$ 256,016	\$ 1,024,966

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:	
2023	\$ (740,006)
2024	(228,955)
2025	(13,476)
2026	213,487
2027	-
Thereafter	-

Actuarial Information to Include in the Financial Statements for the June 30, 2022 Measurement Date

B

Changes in the Employer's Net Pension Liability and Related Ratios Last 10 Fiscal Years

Total pension liability		2022		2021		2020		2019		2018		2017		2016		2015		2014		2013
Service cost	\$	242,361	\$	269,217	\$	336,386	\$	305,409	\$	334,513	\$	343,894	\$	198,351	\$	261,956	\$	248,401	\$	
Interest		849,290		923,094		902,089		875,828		841,226		840,313		809,292		780,962		763,367		
Changes of benefit terms		-		-		-		-		-		-		-		-		-		
Differences between expected and actual experience		(697,311)		(63,661)		173,349		279,024		(347,114)		526,188		(117,054)		152,857		-		
Changes of assumptions		-		(1,616,615)		-		-		(1,318,293)		-		3,162,943		(1,026,161)		-		
Benefit payments, including refunds of member contributions		(945,262)		(1,030,984)		(952,414)		(917,712)		(817,337)		(806,910)		(813,741)		(731,716)		(658,888)		
Net change in total pension liability		(550,922)		(1,518,949)		459,410		542,549		(1,307,005)		903,485		3,239,791		(562,102)		352,880		
Total pension liability - beginning		17,458,436		18,977,385		18,517,975		17,975,426		19,282,431		18,378,946		15,139,155		15,701,257		15,348,377		
Total pension liability - ending (a)	\$	16,907,514	\$	17,458,436	\$	18,977,385	\$	18,517,975	\$	17,975,426	\$	19,282,431	\$	18,378,946	\$	15,139,155	\$	15,701,257	\$	
Plan fiduciary net position		2022		2021		2020		2019		2018		2017		2016		2015		2014		2013
Contributions - employer (including Premium Tax Allocation)	\$	757,948	\$	744,266	\$	717,105	\$	667,271	\$	630,721	\$	622,496	\$	568,649	\$	730.967	\$	524,943	\$	
Contributions - member	•	54,388	7	53,233	7	61,782	7	65,199	•	57,693	-	54,175	•	54,875	7	55,668	7	55,381	*	
Net investment income		(796,593)		1.347.266		131,146		187,030		306,364		368,996		88,757		81,671		515,010		
Benefit payments, including refunds of member contributions		(945,262)		(1,030,984)		(952,414)		(917,712)		(817,337)		(806,910)		(813,741)		(731,716)		(658,888)		
Administrative expense		(145)		(145)		-		-		(86)		-		(150)		(670)		-		
Other		` -		6,786		-		(627)		6,746		836		1,342		` -		-		
Net change in plan fiduciary net position	\$	(929,664)	\$	1,120,422	\$	(42,381)	\$	1,161	\$	184,101	\$	239,593	\$	(100,268)	\$	135,920	\$	436,446	\$	
Plan fiduciary net position - beginning		5,483,214		4,362,792		4,405,173		4,404,012		4,219,912		3,980,319		4,080,587		3,944,667		3,503,157		
Plan fiduciary net position - ending (b)	\$	4,553,550	\$	5,483,214	\$	4,362,792	\$	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)	\$	12,353,964	\$	11,975,222	\$	14,614,593	\$	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		26.93%		31.41%		22.99%		23.79%		24.50%		21.88%		21.66%		26.95%		25.09%		N/
Covered payroll	\$	546,005	\$	594,906	\$	770,135	\$	688,341	\$	657,549	\$	684,729	\$	597,873	\$	707,540	\$	672,836		N/A
Employer's net pension liability as a percentage of																				
covered payroll		2262.61%		2012.96%		1897.67%		2050.26%		2063.94%		2199.78%		2408.31%		1562.96%		1748.07%		N/
Expected average remaining service years of all participants		3.00		3.00		4.00		4.00												N/A

Notes to Schedule:

Benefit changes: There were no changes for FY2022.

Changes of assumptions: There were no changes for FY2022.

^{*}The Plan Fiduciary Net Position as of July 1, 2021 provided to Bolton by the City does not match the Plan Fiduciary Net Position as of June 30, 2021 as provided in the prior GASB report. A difference of \$6,785 has been excluded as investment income for the measurement period ending June 30, 2022.

^{*}Market value of assets as of July 1, 2014, includes \$5,064, excluded from the market value of assets as of June 30, 2014, used for the actuarial valuation report for the fiscal year end June 30, 2014.

Actuarial Information to Include in the Financial Statements for the June 30, 2022 Measurement Date

Schedule of Employer Contributions

Last 10 Fiscal Years



	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Actuarially determined contribution	\$ 1,019,018	\$ 1,164,733	\$ 1,103,935	\$ 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	545,403	509,773	476,376	445,211	416,086	419,150	333,140	366,101	315,699	296,663
State provided	 212,545	234,493	240,729	222,060	214,635	203,346	235,509	364,866	209,244	210,734
Contribution deficiency (excess)	\$ 261,070	\$ 420,467	\$ 386,830	\$ 397,251	\$ 273,951	\$ 342,993	\$ 296,680	\$ (47,940)	\$ 177,243	\$ 209,444
Covered payroll	\$ 546,005	\$ 594,906	\$ 770,135	\$ 688,341	\$ 657,549	\$ 684,729	\$ 597,873	\$ 707,540	\$ 672,836	\$ 719,372
Contributions as a percentage of covered employee payroll	138.82%	125.11%	93.11%	96.94%	95.92%	90.91%	95.11%	103.31%	78.02%	70.53%

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. The assumption shown below are those used in the 7/1/2020 actuarial valuation to calculate the FY2022 ADC. Assumptions used to determine all contributions in the past would not have been the same.

Methods and assumptions used to determine contribution rates:

Actuarial cost method Entry Age Normal
Amortization method Level Dollar
Remaining amortization period 15 to 28.5 years
Asset valuation method 4-year smoothed market

Inflation 2.50 percent

Salary increases Rates vary by years of service

Investment rate of return 5.00%, net of pension plan investment expense, including inflation

Retirement age Rates vary by age

Mortality SOA PubS-2010(B) with generational projection using Scale MP-2019

Actuarial Information to Include in the Financial Statements for the June 30, 2022 Measurement Date



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.

Year	Differences between Projected and Actual Earnings on Pension Plan Investments		Recognition Period (Years)	2018	2019	2020	2021	2022	2	023	2024	2025	2026
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			
2020		84,776	5			\$ 16,955	16,955	16,955		16,955	16,956		
2021		(1,134,797)	5				\$ (226,959)	(226,959)		(226,959)	(226,959)	(226,961)	
2022		1,067,427	5					\$ 213,485		213,485	213,485	213,485	213,48
et increa	se (dec	rease) in pension	expense					\$ (14,657)	\$	9,185	\$ 3,482	\$ (13,476)	\$ 213,487

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

						Balan June 3	
Year	tment Earnings than Projected (a)	C	Investment Earnings Greater Than Projected (b)	Amounts Recognized in Pension Expense Through June 30, 2022 (c)	C	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2018	\$ -	\$	119,219	\$ 119,219	\$	-	\$ -
2019	28,524		-	22,820		5,704	-
2020	84,776		-	50,865		33,911	-
2021	-		1,134,797	453,918		-	680,879
2022	1,067,427		-	213,485		853,942	-
					\$	893,557	\$ 680,879



Schedule of Differences between Expected and Actual Experience

In conformity with paragraph 33 a 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.

Year	Differences between Expected and Actual Experience	Recognition Period (Years)	Prior	2013	2014	2015	In:		crease) in	Pension Expens		sing from th	ne Reco		ierences b 2021	n Expected	Actual Expe	rience 2024	2	025	202	6	2027	Th	ereafter
Prior	-	-																		-		-			
2013	-	-																							
2014	-	-																							
2015	152,857	3.688682				\$ 41,439	41,43	19	41,439	28,540															
2016	(117,054)	3.344772					\$ (34,99	96)	(34,996)	(34,996)	((12,066)													
2017	526,188	3.442455						\$	152,853	152,853	1	152,853	6	67,629											
2018	(347,114)	3.418569								\$ (101,538)	(1	101,538)	(10	01,538)	(42,500)										
2019	279,024	4.000000									\$	69,756	6	59,756	69,756	69,756									
2020	173,349	4.000000											\$ 4	13,337	43,337	43,337	43,338								
2021	(63,661)	3.000000													\$ (21,220)	(21,220)	(21,221)								
2022	(697,311)	3.000000														\$ (232,437)	(232,437)	(232,437)							
Net increas	e (decrease) in per	nsion expense														\$ (140,564)	\$ (210,320)	\$ (232,437)	\$		\$		\$	- \$	-

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

			Amounts Recognized in	June : Deferred	nces at 30, 2022 Deferred
Year	Experience Losses (a)	Experience Gains (b)	Pension Expense Through June 30, 2022 (c)	Outflows of Resources (a) - (c)	Inflows of Resources (b) - (c)
Prior	\$ -	\$ -	\$ -	\$ -	\$
2013	-	-		-	
2014	-	-	-	-	
2015	152,857	-	152,857	-	
2016	-	117,054	117,054	-	
2017	526,188	-	526,188	-	
2018	-	347,114	347,114	-	
2019	279,024		279,024	-	
2020	173,349	-	130,011	43,338	
2021	-	63,661	42,440	-	21,22
2022	-	697,311	232,437	-	464,87
				\$ 43,338	\$ 486,095

Actuarial Information to Include in the Financial Statements

for the June 30, 2022 Measurement Date

B

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.

								Incr	ease (Decrease) ii	Pension Expen	se Arising fron	n the Effects of (Changes of Assum	otions					
Year	Changes of Assumptions	Recognition Period (Years)	Prior	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Thereafter
Prior	\$ -	-																	-
2013		-																	
2014	-	-																	
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	-	4.000000																	
2020	-	4.000000																	
2021	(1,616,615)	3.000000										\$ (538,872)	(538,872)	(538,871)					
2022	-	3.000000																	
Net increas	e (decrease) in per	sion expense											\$ (538,872)	\$ (538,871)	\$	- \$ -	\$ -	\$ -	\$ -

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

					ices at 60, 2022
Year	Increases in the Total Pension Liability (a)	Decreases in the Total Pension Liability (b)	Amounts Recognized in Pension Expense Through June 30, 2022 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	\$ -	\$ -	\$ -	\$ -	\$ -
2013		-	-	-	-
2014	-	-	-	-	-
2015		1,026,161	1,026,161	-	-
2016	3,162,943	-	3,162,943	-	-
2017		-	-	-	-
2018	-	1,318,293	1,318,293	-	-
2019	-	-	-	-	-
2020	-	-	-	-	-
2021		1,616,615	1,077,744	-	538,871
2022	-	-	-	-	-
				\$ -	\$ 538,871

City of Bluefield, West Virginia Firemen's Pension and Relief Fund Actuarial Information to Include in the Financial Statements

for the June 30, 2022 Measurement Date

Projection of Pension Plan's Fiduciary Net Position



		G		lormal Co BOY)	st			Emp		e Contribu (BOY)	tion	s		Emp		er Normal ((BOY)	Cos	t				penses MOY)				Emplo		Contribu	tions	5		Premi	ium Ta (M	x Alloc OY)	ation	
Fiscal Y	ear	Current Members		uture mbers		Total		Current Members		Future lembers		Total		Current lembers		Future lembers		Total		ırrent mbers		uture embers	Total			Current lembers		uture embers		Total		Current lembers		ure bers	•	Total
2022	2	\$ 230,820	\$	-	\$	230,820	\$	54,388	\$	-	\$	54,388	\$	176,432	\$	-	\$	176,432	\$	145	\$	- \$	14	5	\$	545,403	\$	-	\$	545,403	\$	212,545	\$	-	\$	212,545
2023	3	\$ 228,431	\$	17,422	\$	245,853	\$	47,308	\$	3,936	\$	51,244	\$	181,123	\$	13,486	\$	194,609	\$	146	\$	(69) \$, 7	7	\$	569,833	\$	13,750	\$	583,583	\$	205,878	\$	-	\$	205,878
2024	1	\$ 225,422	\$	34,809	\$	260,231	\$	46,381	\$	7,861	\$	54,242	\$	179,041	\$	26,948	\$	205,989	\$	147	\$	(70) \$	5 7	7	\$	596,891	\$	27,543	\$	624,434	\$	207,793	\$	-	\$	207,793
2025	5	\$ 222,550	\$	52,506	\$	275,056	\$	45,490	\$	11,855	\$	57,345	\$	177,060	\$	40,651	\$	217,711	\$	151	\$	(72) \$	5 7	9	\$	626,561	\$	41,583	\$	668,144	\$	219,383	\$	-	\$	219,383
2026	6	\$ 219,760	\$	69,909	\$	289,669	\$	44,616	\$	15,794	\$	60,410	\$	175,144	\$	54,115	\$	229,259	\$	149	\$	(70) \$	5 7	9	\$	659,533	\$	55,381	\$	714,914	\$	226,222	\$	-	\$	226,222
2027	7	\$ 217,306	\$	87,335	\$	304,641	\$	43,813	\$	19,749	\$	63,562	\$	173,493	\$	67,586	\$	241,079	\$	153	\$	(72) \$	8	1	\$	695,775	\$	69,183	\$	764,958	\$	234,710	\$	-	\$	234,710
2028	3	\$ 215,125	\$	105,120	\$	320,245	\$	43,056	\$	23,795	\$	66,851	\$	172,069	\$	81,325	\$	253,394	\$	154	\$	(73) \$	8	1	\$	735,245	\$	83,260	\$	818,505	\$	245,040	\$	-	\$	245,040
2029		\$ 213,267	\$	123,134	\$	336,401	\$	42,348	\$	27,905	\$	70,253	\$	170,919	\$		\$	266,148	\$	151	\$	(70) \$			\$	-,	\$		\$	875,800	\$	255,642	\$	-		255,642
2030		\$ 211,655	\$	141,532	\$	353,187	\$	41,672	\$	32,112	\$	73,784	\$	169,983	\$	109,420	\$	279,403	\$		\$	(72) \$			\$	825,056	\$	112,050	\$	937,106	\$	263,410	\$	-		263,410
2031		\$ 210,469	•		\$	370,848	\$	41,058		36,436	\$	77,494	\$	169,411	\$		\$	293,354	\$	155		(72) \$			\$	/				1,002,703	\$	271,371	\$	-		271,371
2032		\$ 209,825	•	- ,	\$	389,207	\$	40,513	•	40,839	\$	81,352	\$	169,312	\$	138,543	\$	307,855	\$	155		(70) \$			\$,	\$	141,894	\$	1,072,892	\$,	\$	-		279,532
2033		\$ 204,111		,	\$	401,109	\$	39,086		44,926	\$	84,012	\$	165,025	\$			317,097	\$	155		(70) \$			\$, .				1,147,994	\$	LUL,L.	\$	-		292,271
2034		\$ 191,014			\$	413,771	\$	36,427	\$	50,689	\$	87,116	\$	154,587	\$	172,068	\$	326,655	\$	159		(72) \$			\$				\$	1,228,354	\$,	\$	-		309,952
2035		\$ 181,043	•	. ,	\$	435,700	\$	34,338	\$	57,794	\$	92,132	\$	146,705	\$	196,863	\$	343,568	\$	159	\$	(70) \$			\$, , ,		201,655	\$	1,314,339	\$	0.0,.2.	\$	-		319,127
2036		\$ 172,245			\$	451,380	\$	32,514		63,308	\$	95,822	\$	139,731	\$		\$	355,558	\$	159		(70) \$							\$	1,406,343	\$	344,746		-		344,746
2037		\$ 160,163	•		\$	470,024	\$	30,167	\$	70,132	\$	100,299	\$	129,996	\$		\$	369,725	\$	159		(68) \$			\$, ,			\$	1,504,787	\$,	\$	-		360,283
2038		\$ 147,448	•		\$	487,458	\$	27,677	\$	76,740	\$	104,417	\$	119,771	\$	263,270	\$	383,041	\$	155		(62) \$			\$			269,709	\$	1,610,122	\$,	\$	-		370,778
2039		\$ 137,432	•	. ,	\$	514,870	\$	25,642		84,915	\$	110,557	\$	111,790	\$	292,523	\$	404,313	\$	159		(66) \$			\$, .,		299,681	\$	1,722,831	\$,	\$	-		392,526
2040		\$ 125,645			\$	530,509	\$	23,147	\$	90,812	\$	113,959	\$	102,498	\$	314,052	\$	416,550	\$	154		(59) \$			\$			321,749	\$	1,843,429	\$	403,868	\$	-		403,868
204		\$ 101,514	•	,	\$	538,500	\$	18,424	\$	97,363	\$	115,787	\$	83,090	\$,		422,713	\$	158		(61) \$			\$, ,	•	. ,	\$	1,572,817	\$	-	\$	-	\$	-
2042		\$ 77,306			\$	559,960	\$	13,876		106,826	\$	120,702	\$	63,430	\$			439,258	\$	157		(58) \$			\$				\$	450,204	\$	-	\$	-	\$	-
2043		\$ 62,021			\$	584,313	\$	11,095	\$	115,149	\$	126,244	\$	50,926	\$	407,143	\$	458,069	\$	156		(57) \$			\$			417,140	\$	469,480	\$	-	\$	-	\$	-
2044 2045		\$ 51,721			\$	609,773	\$ \$	9,249	\$	122,758	\$	132,007	\$ \$	42,472 34,999	\$ \$		\$	477,766 496,188	\$ \$	155 149		(54) \$ (48) \$			\$ \$	- ,		445,990	\$	489,665	\$	-	\$	-	\$ \$	-
204		\$ 42,713 \$ 33.238	•	,	\$	633,647 653.098	\$	7,714	\$	129,745 135.905	\$ \$	137,459 142.086	\$	27.057	\$ \$	461,189 483.955	\$	511.012	s s	153		(48) \$			\$ \$,	\$ \$	508,542 523.735	ş S	-	Ď.	-	s S	-
2040		\$ 27,305	•	,	\$	678,975	\$ \$	6,181 5,038	- 7	142,730	\$	142,086	\$	22,267	\$,	\$	511,012	s s	152		(48) \$		•	\$ \$,		521,460	\$	544,429	s S	-	φ φ	-	s S	-
2048		\$ 27,303 \$ 17.192			\$ \$	701.541	\$	3,305	\$ \$	142,730	\$	152,761	\$	13.887	\$	534.893	\$	548,780	s S	150		(43) \$			ş S			548.059	\$	562,440	\$	-	φ ¢	-	ş S	-
2049		\$ 14,813	•		\$	735,814	\$	2,835		157,404	\$	160,239	\$	11.978	э \$,	\$	575,575	s S	143		(36) \$			э \$,		,		589,896	S	-	φ e	-	\$	-
2050		\$ 9.040			\$	759,663	\$	1.784	\$	163,469	\$	165,253	\$	7.256	S		\$	594,410	s	147		(37) \$			\$			601.617		609,199	S	-	φ ¢	-	s.	_
205		\$ 4.886	•	,	\$	792.882	\$	937	\$	171,195	\$	172,132	\$	3,949	s	616.801	\$	620,750	s	145		(35) \$			\$,		631,998	\$	636.189	s	_	\$	_	s	_
2052		\$ 3,410		. ,	\$	827,157	\$	629	\$	178,782	\$	179,411	\$	2,781	\$,	\$	647,746	s	143		(30) \$			s	, -		660,862		663,855	s	_	\$	_	s	_
2053		\$ 2,490	•		\$	861,683	\$	442		186.338	\$	186.780	\$	2.048	s			674.903	s	140		(27) \$			s			689,444		691.682	s	_	\$	_	\$	_
2054		\$ 1,917	•	,	\$	895,479	\$	329		193,722	\$	194,051	\$	1.588	s	699,840	\$	701,428	s	137		(21) \$			s	,		,		718,866	s	-	\$	_	\$	_
2055		\$ 1,482	•		\$	929,143	\$	246	•	201,129	\$	201,375	\$	1,236	\$	726,532		727,768	s	140		(21) \$			\$			744,453	\$	745,859	s	-	\$	_	\$	_
2056		\$ 1,147			\$	965,006	\$	184	\$	209.014	\$	209,198	\$	963	s	754,845	\$	755,808	s	137	\$	(18) \$			s			773,468	s	774.592	s	-	\$	_	\$	_
2057		\$ 523			\$	997.867	\$	88	\$	216.348		216.436	\$	435	\$		\$	781,431	\$	134	s	(12) \$			\$			800.271	s	800,851	\$	-	\$	_	\$	_
2058		\$ 405	•	, .		1,032,384	\$	66	\$	224,031	\$	224,097	\$	339	\$,		808,287	\$	130		(8) \$			\$,		828,370	\$	-	\$	-	\$	-
2059		\$ 313				1,068,981	\$	49	\$	232,125	\$	232,174	\$	264	\$,		836,807	\$	126		(1) \$			\$			857,200	\$	857,597	\$	-	\$	-	\$	-
2060		\$ -	\$ 1,	105,733	\$ 1	1,105,733	\$	-	\$	240,304	\$	240,304	\$	-	\$	865,429	\$	865,429	\$	122	\$	6 \$		8	\$	122	\$	886,807	\$	886,929	\$	-	\$	-	\$	-
206		\$ -				1,143,593	\$	-	\$	248,721	\$	248,721	\$	-	\$	894,872		894,872	\$		\$	3 \$			\$			916,974	\$	917,099	\$	-	\$	-	\$	-
2062	2	\$ -	\$ 1,	177,297	\$ 1	1,177,297	\$	-	\$	256,334	\$	256,334	\$	-	\$	920,963	\$	920,963	\$	121	\$	10 \$	13	1	\$	121	\$	943,716	\$	943,837	\$	-	\$	-	\$	-

City of Bluefield, West Virginia Firemen's Pension and Relief Fund Actuarial Information to Include in the Financial Statements

for the June 30, 2022 Measurement Date

Projection of Pension Plan's Fiduciary Net Position



		Actu	arial Accrued Liabili	у (ВОҮ)					CI	lose	ed Group Asset Projection	on					
Fiscal Year	Cu	ırrent Members	Future Members		Total	Fic	luciary Net Position (BOY)	Funded Ratio (BOY)		Projected EEC Contributions (MOY)	Pi	rojected ER Contrib + Premium Tax (MOY)		Projected BP (MOY)	1	Projected Admin Expenses (MOY)	Pr	ojected Investment Earnings
2022	\$	16,794,330	\$	\$	16,794,330	\$	5,483,214	32.65%	\$	54,388	\$	757,948	\$	945,262	\$	145	\$	(796,593)
2023	\$	16,907,802	\$	\$	16,907,802	\$	4,553,550	26.93%	\$	48,476			\$	977,183	\$	146		223,896
2024	\$	16,991,730	\$ 18,1	35 \$	17,009,865	\$	4,624,304	27.22%	\$	47,526	\$	804,684	\$	984,144	\$	147	\$	227,953
2025	\$	17,069,562		64 \$	17,124,626	\$	4,720,175	27.65%	\$	46,613	\$	845,944	\$	988,829	\$	151		233,628
2026	\$	17,143,469		32 \$	17,255,301	\$	4,857,381	28.33%	\$	45,718				993,120		149		241,343
2027	\$	17,213,745	\$ 188,8	87 \$	17,402,632	\$	5,036,927	29.26%	\$	44,895	\$	930,485	\$	997,549	\$	153	\$	251,295
2028	\$	17,280,420		97 \$	17,567,417	\$	5,265,900	30.47%	\$	44,119				998,004		154		263,943
2029	\$	17,347,672	\$ 407,5	75 \$	17,755,247	\$	5,556,089	32.03%	\$	43,394			\$	999,859	\$	151		279,714
2030	\$	17,414,435	\$ 551,6	00 \$	17,966,035	\$	5,913,118	33.96%	\$	42,701	\$	1,088,466	\$	1,000,511	\$	155	\$	298,879
2031	\$	17,482,176	\$ 720,3	38 \$	18,202,514	\$	6,342,498	36.28%	\$	42,072	\$	1,147,142	\$	999,647	\$	155	\$	321,802
2032	\$	17,552,944	\$ 915,2	67 \$	18,468,211	\$	6,853,712	39.05%	\$	41,513	\$	1,210,530	\$	996,704	\$	155	\$	348,987
2033	\$	17,629,590	\$ 1,137,7	72 \$	18,767,362	\$	7,457,883	42.30%	\$	40,051	\$	1,284,508	\$	998,759	\$	155	\$	380,936
2034	\$	17,701,963	\$ 1,384,7	71 \$	19,086,734	\$	8,164,463	46.12%	\$	37,327	\$	1,362,061	\$	1,008,628	\$	159	\$	417,869
2035	\$	17,754,090	\$ 1,661,7	05 \$	19,415,795	\$	8,972,933	50.54%	\$	35,186	\$	1,431,811	\$	1,011,026	\$	159	\$	459,903
2036	\$	17,795,896	\$ 1,977,6	35 \$	19,773,531	\$	9,888,649	55.57%	\$	33,317	\$	1,530,002	\$	1,021,000	\$	159	\$	507,821
2037	\$	17,820,334	\$ 2,322,4	00 \$	20,142,734	\$	10,938,630	61.38%	\$	30,912	\$	1,619,489	\$	1,030,843	\$	159	\$	562,228
2038	\$	17,823,222	\$ 2,701,3	02 \$	20,524,524	\$	12,120,257	68.00%	\$	28,360	\$	1,711,191	\$	1,044,270	\$	155	\$	623,179
2039	\$	17,799,145	\$ 3,111,6	27 \$	20,910,772	\$	13,438,561	75.50%	\$	26,275	\$	1,815,676	\$	1,049,835	\$	159	\$	691,486
2040	\$	17,757,645	\$ 3,564,5	52 \$	21,322,197	\$	14,922,004	84.03%	\$	23,719	\$	1,925,548	\$	1,057,417	\$	154	\$	768,121
2041	\$	17,693,925	\$ 4,047,5	53 \$	21,741,478	\$	16,581,822	93.71%	\$	18,879	\$	1,224,868	\$	1,077,770	\$	158	\$	833,186
2042	\$	17,580,825	\$ 4,553,1	53 \$	22,133,978	\$	17,580,827	100.00%	\$	14,219	\$	65,153	\$	1,094,585	\$	157	\$	853,967
2043	\$	17,419,422	\$ 5,097,3	05 \$	22,516,727	\$	17,419,424	100.00%	\$	11,369	\$	52,340	\$	1,097,774	\$	156	\$	845,431
2044	\$	17,230,632	\$ 5,683,1	78 \$	22,913,810	\$	17,230,633	100.00%	\$	9,477	\$	43,675	\$	1,093,349	\$	155	\$	835,840
2045	\$	17,026,121	\$ 6,310,5	63 \$	23,336,684	\$	17,026,122	100.00%	\$	7,904	\$	36,012	\$	1,086,014	\$	149	\$	825,568
2046	\$	16,809,443	\$ 6,977,5	16 \$	23,786,959	\$	16,809,443	100.00%	\$	6,334	\$	27,878	\$	1,078,340	\$	153	\$	814,684
2047	\$	16,579,845	\$ 7,675,8	35 \$	24,255,680	\$	16,579,845	100.00%	\$	5,162	\$	22,969	\$	1,068,170	\$	152	\$	803,305
2048	\$	16,342,959	\$ 8,409,3	42 \$	24,752,301	\$	16,342,959	100.00%	\$	3,387	\$	14,381	\$	1,061,071	\$	150	\$	791,380
2049	\$	16,090,884			25,262,700	\$	16,090,886	100.00%	\$	2,905				1,043,248		143		779,156
2050	\$	15,841,971	\$ 9,980,2	76 \$	25,822,247	\$	15,841,973	100.00%	\$	1,828	\$	7,582	\$	1,031,778	\$	147	\$	766,848
2051	\$	15,586,304			26,405,309	\$	15,586,306	100.00%	\$	960				1,016,088		145		754,347
2052	\$	15.329.569			27,027,905	\$	15,329,571	100.00%	\$	645	\$			995,437		143		741,982
2053	\$	15,079,609			27,701,502	\$	15,079,610	100.00%	\$	453	\$	2,238	\$	973,184		140	\$	730,011
2054	\$	14,838,987			28,430,087	\$	14,838,988	100.00%	\$	337				949,550		137		718,549
2055	\$	14,609,950			29,215,074	\$	14,609,952	100.00%	\$	252				924,949		140		707,693
2056	\$	14,394,213			30,055,164	\$	14,394,214	100.00%	\$	189				899,347		137		697,530
2057	\$	14,193,572			30.953.948	\$	14,193,573	100.00%	\$	90		,		873,257		134		688,127
2058	\$	14,008,978			31,905,332	\$	14,008,979	100.00%	\$	68				845,874		130		679,570
2059	\$	13,843,089			32,909,499	\$	13,843,091	100.00%	\$	50				817,955		126		671,963
2060	\$	13,697,418			33,968,014	\$	13,697,419	100.00%	\$	-	\$			790,023		122		665,361
2061	s s	13,572,756			35,078,339	\$	13,572,757	100.00%	\$		\$			761,562		125		659,831
2062	\$	13,471.025			36,243,963	\$	13,471,027	100.00%	s S	_	\$			733,216		121		655,444
2002	Ψ	13,471,023	Ψ	оо ф	30,243,903	Ψ	13,47 1,027	100.0076	Ą	-	Φ	121	Ψ	733,210	Ψ	121	Ψ	000,444

Actuarial Information to Include in the Financial Statements for the June 30, 2022 Measurement Date



Projection of Pension Plan's Fiduciary Net Position

				Calcu	lati	on of Single Equivaler	nt Rate	·			
Fiscal Year	"Fun	ded" Portion of BP	"Unfun	ded" Portion of BP		PV of "Funded" BP	PV o	of "Unfunded'	BP	P۱	of BP Using a Single DR
2022	\$	945,262	\$	-	\$	922,481	\$		-	\$	922,481
2023	\$	977,183	\$	-	\$	908,222	\$		-	\$	908,222
2024	\$	984,144	\$	-	\$	871,135	\$		-	\$	871,135
2025	\$	988,829	\$	-	\$	833,602	\$		-	\$	833,602
2026	\$	993,120	\$	-	\$	797,352	\$		-	\$	797,352
2027	\$	997,549	\$	-	\$	762,769	\$		-	\$	762,769
2028	\$	998,004	\$	-	\$	726,778	\$		-	\$	726,778
2029	\$	999,859	\$	-	\$	693,456	\$		-	\$	693,456
2030	\$	1,000,511	\$	-	\$	660,865	\$		-	\$	660,865
2031	\$	999,647	\$	-	\$	628,852	\$		-	\$	628,852
2032	\$	996,704	\$	-	\$	597,143	\$		-	\$	597,143
2033	\$	998,759	\$	-	\$	569,880	\$		-	\$	569,880
2034	\$	1,008,628	\$	-	\$	548,106	\$		-	\$	548,106
2035	\$	1,011,026	\$	-	\$	523,247	\$		-	\$	523,247
2036	\$	1,021,000	\$	-	\$	503,247	\$		-	\$	503,24
2037	\$	1,030,843	\$	-	\$	483,903	\$		-	\$	483,90
2038	\$	1,044,270	\$	-	\$	466,863	\$		-	\$	466,86
2039	\$	1,049,835	\$	-	\$	447,001	\$		-	\$	447,00
2040	\$	1,057,417	\$	-	\$	428,790	\$		_	\$	428,790
2041	\$	1,077,770	\$	-	\$	416,231	\$		-	\$	416,23
2042	\$	1,094,585	\$	-	\$	402,595	\$		_	\$	402,59
2043	\$	1,097,774	\$	-	\$	384,541	\$		_	\$	384,54
2044	\$	1,093,349	\$	-	\$	364,754	\$		_	\$	364,754
2045	\$	1,086,014	\$	-	\$	345,054	\$		_	\$	345,054
2046	\$	1,078,340	\$	-	\$	326,301	\$		_	\$	326,30
2047	\$	1,068,170	\$	-	\$	307,832	\$		_	\$	307,832
2048	\$	1,061,071	\$	_	\$	291,225	\$		_	\$	291,225
2049	\$	1,043,248	\$	_	\$	272,698	\$		_	\$	272,698
2050	\$	1,031,778	\$	_	\$	256,857	\$		_	\$	256,85
2051	\$	1,016,088	\$	_	\$	240,906	\$		_	\$	240,900
2052	\$	995,437	\$	_	\$	224,771	\$		_	\$	224,77
2052	\$	973,184	\$	_	\$	209,282	\$		_	\$	209,282
2054	\$	949,550	\$	_	\$	194,476	\$		_	\$	194,470
2055	\$	924,949	\$	_	\$	180,417	\$		_	\$	180,417
2056	э \$	899,347	\$ \$	_		167,069	э \$		-		167,069
2057	э \$	873,257	\$ \$	-	\$ \$	154,498	э \$		_	\$ \$	154,498
2057	э \$	845,874	Ф \$	_	Ф \$	142,527	э \$		_	э \$	142,52
				-					-		
2059	\$	817,955	\$	-	\$	131,259	\$		-	\$	131,259
2060	\$	790,023	\$	-	\$	120,740	\$		-	\$	120,740
2061	\$	761,562	\$	-	\$	110,848	\$		-	\$	110,848
2062	\$	733,216	\$	-	\$	101,640	\$		-	\$	101,640