



**Municipal Pensions  
Oversight Board**

**City of Beckley, 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 28, 2019

Mr. Billie Trump  
City Treasurer, Recorder  
City of Beckley  
P.O. Box 2514  
Beckley, WV 25801

Captain Ernest Parsons, Jr.  
Pension Board Secretary  
City of Beckley, West Virginia  
Firemen's Pension and Relief Fund

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

Dear Billie,

The following report contains the GASB 67 and GASB 68 actuarial information for the City of Beckley 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 3.96%. The plan's expected gross rate of investment return of 4.5% 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.

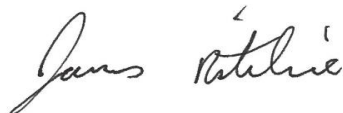
The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption, 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 Beckley, 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	\$ 54,244,510
Plan fiduciary net position	(19,275,679)
Employer's net pension liability	<u>\$ 34,968,831</u>
Plan fiduciary net position as a percentage of the total pension liability	35.53%

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)	4.0845%
Single discount rate (EOY)	3.9600%
Investment rate of return	4.50 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	2060
Year assets are expected to be depleted for a closed plan	2039

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 2.96%	Current Discount Rate 3.96%	1% Increase 4.96%
Employer's net pension liability	\$ 43,658,106	\$ 34,968,831	\$ 28,066,302

City of Beckley, 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)
<b>Balances at 6/30/18</b>	\$ 50,145,861	\$ 18,449,645	\$ 31,696,216
<b>Changes for the year:</b>			
Service cost	1,433,473		1,433,473
Interest	2,006,880		2,006,880
Changes of benefit terms	-		-
Differences between expected and actual experience	1,717,861		1,717,861
Changes of assumptions	964,067		964,067
Contributions - employer (including Premium Tax Allocation)		1,334,570	(1,334,570)
Contributions - member		191,084	(191,084)
Net investment income		1,324,032	(1,324,032)
Benefit payments, including refunds of member contributions	(2,023,632)	(2,023,632)	-
Administrative expense		(20)	20
Other		-	-
<b>Net Changes</b>	<u>4,098,649</u>	<u>826,034</u>	<u>3,272,615</u>
<b>Balances at 6/30/19</b>	<u>\$ 54,244,510</u>	<u>\$ 19,275,679</u>	<u>\$ 34,968,831</u>
Return on Investments		7.3%	

City of Beckley, West Virginia Firemen's Pension and Relief Fund  
 Actuarial Information to Include in the Financial Statements  
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Components of Employer's Pension Expense for the Fiscal Year Ended June 30, 2019

Note	Description	Amount
A	Service Cost	\$ 1,433,473
B	Interest on the total pension liability	2,006,880
A	Changes of benefit terms	-
C	Differences between expected and actual experience	434,987
C	Changes of assumptions	1,518,778
A	Employee contributions	(191,084)
D	Projected earnings on pension plan investments	(819,029)
C	Differences between expected and actual earnings on plan investments	(253,793)
A	Pension plan administrative expense	20
A	Other changes in fiduciary net position	-
<b>Total Pension Expense</b>		<b>\$ 4,130,232</b>

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	\$ 50,145,861	100%	4.08%	\$ 2,048,208
Service Cost (End of Year)	1,433,473	0%	4.08%	-
Benefit payments, including refunds of employee contributions	(2,023,632)	50%	4.08%	(41,328)
<b>Total interest on the total pension liability</b>				<b>\$ 2,006,880</b>

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	\$ 18,449,645	100%	4.50%	\$ 830,234
Employer contributions	1,334,570	50%	4.50%	30,028
Employee contributions	191,084	50%	4.50%	4,299
Benefit payments, including refunds of employee contributions	(2,023,632)	50%	4.50%	(45,532)
Administrative expense and other	(20)	50%	4.50%	-
<b>Total Projected Earnings</b>				<b>\$ 819,029</b>

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



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	\$ 1,344,495	\$ 55,484
Changes of assumptions	723,050	876,951
Net difference between projected and actual earnings on pension plan investments	-	979,352
<b>Total</b>	<b>\$ 2,067,545</b>	<b>\$ 1,911,787</b>

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	\$ (322,637)
2021	125,276
2022	454,118
2023	(100,999)
2024	-
Thereafter	-



City of Beckley, West Virginia Firemen's Pension and Relief Fund  
 Actuarial Information to Include in the Financial Statements  
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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	\$ 1,433,473	\$ 1,372,807	\$ 1,483,038	\$ 716,515	\$ 743,480	\$ 691,461	\$ -	\$ -	\$ -	\$ -
Interest	2,006,880	1,956,976	1,804,335	1,977,837	1,951,130	1,895,401	-	-	-	-
Changes of benefit terms	-	-	-	-	-	-	-	-	-	-
Differences between expected and actual experience	1,717,861	(114,768)	380,786	(413,682)	491,509	-	-	-	-	-
Changes of assumptions	964,067	(778,140)	(3,398,993)	13,842,099	-	-	-	-	-	-
Benefit payments, including refunds of member contributions	(2,023,632)	(1,959,969)	(1,843,155)	(1,791,840)	(1,771,874)	(1,718,937)	-	-	-	-
Net change in total pension liability	4,098,649	476,906	(1,573,989)	14,330,929	1,414,245	867,925	-	-	-	-
Total pension liability - beginning	50,145,861	49,668,955	51,242,944	36,912,015	35,497,770	34,629,845	-	-	-	-
<b>Total pension liability - ending (a)</b>	<b>\$ 54,244,510</b>	<b>\$ 50,145,861</b>	<b>\$ 49,668,955</b>	<b>\$ 51,242,944</b>	<b>\$ 36,912,015</b>	<b>\$ 35,497,770</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Plan fiduciary net position</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>
Contributions - employer (including Premium Tax Allocation)	\$ 1,334,570	\$ 1,216,720	\$ 1,058,279	\$ 1,003,851	\$ 943,850	\$ 887,837	\$ -	\$ -	\$ -	\$ -
Contributions - member	191,084	179,050	174,158	167,664	152,499	158,033	-	-	-	-
Net investment income	1,324,032	1,269,796	1,387,931	771,981	590,578	2,047,099	-	-	-	-
Benefit payments, including refunds of member contributions	(2,023,632)	(1,959,969)	(1,843,155)	(1,791,840)	(1,771,874)	(1,718,937)	-	-	-	-
Administrative expense	(20)	(81)	(24)	-	(59,002)	(55,411)	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Net change in plan fiduciary net position	\$ 826,034	\$ 705,516	\$ 777,189	\$ 151,656	\$ (143,949)	\$ 1,318,621	\$ -	\$ -	\$ -	\$ -
Plan fiduciary net position - beginning	18,449,645	17,744,129	16,966,940	16,738,742	16,958,929	15,640,308	-	-	-	-
<b>Plan fiduciary net position - ending (b)</b>	<b>\$ 19,275,679</b>	<b>\$ 18,449,645</b>	<b>\$ 17,744,129</b>	<b>\$ 16,890,398</b>	<b>\$ 16,814,980</b>	<b>\$ 16,958,929</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Employer's net pension liability - ending (a)-(b)	\$ 34,968,831	\$ 31,696,216	\$ 31,924,826	\$ 34,352,546	\$ 20,097,035	\$ 18,538,841	\$ -	\$ -	\$ -	\$ -
Plan fiduciary net position as a percentage of the total pension liability	35.53%	36.79%	35.72%	32.96%	45.55%	47.77%	0.00%	0.00%	0.00%	0.00%
Covered payroll	\$ 2,289,203	\$ 2,183,999	\$ 2,080,112	\$ 2,028,434	\$ 2,075,097	\$ 1,957,139	\$ -	\$ -	\$ -	\$ -
Employer's net pension liability as a percentage of covered payroll	1527.55%	1451.29%	1534.76%	1693.55%	968.49%	947.24%	0.00%	0.00%	0.00%	0.00%
Expected average remaining service years of all participants	4.00	3.87	3.52	3.64	3.66	-	-	-	-	-

**Notes to Schedule:**

Benefit changes: There were no changes for FY2019.

Changes of assumptions: The discount rate changed from 4.0845% to 3.9600%.

City of Beckley, 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	\$ 2,674,661	\$ 2,367,135	\$ 2,253,955	\$ 2,093,433	\$ 1,468,949	\$ 1,398,526	\$ 1,514,033	\$ -	\$ -	\$ -
Contributions in relation to the actuarially determined contribution										
Employer provided	870,675	773,528	629,465	588,285	549,799	513,831	480,216	-	-	-
State provided	463,895	443,192	428,814	415,566	394,051	342,815	444,551	-	-	-
Contribution deficiency (excess)	<u>\$ 1,340,091</u>	<u>\$ 1,150,415</u>	<u>\$ 1,195,676</u>	<u>\$ 1,089,582</u>	<u>\$ 525,099</u>	<u>\$ 541,880</u>	<u>\$ 589,266</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered payroll	\$ 2,289,203	\$ 2,183,999	\$ 2,080,112	\$ 2,028,434	\$ 2,075,097	\$ 1,957,139	\$ 1,933,420	\$ -	\$ -	\$ -
Contributions as a percentage of covered employee payroll	58.30%	56.00%	51.00%	49.00%	45.00%	44.00%	48.00%	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	4.50 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 Beckley, 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	\$ 320,202	5	\$ 64,040	64,040	64,040	64,040	64,042				
2016	131,591	5		\$ 26,318	26,318	26,318	26,318	26,319			
2017	(638,957)	5			\$ (127,791)	(127,791)	(127,791)	(127,791)	(127,793)		
2018	(576,807)	5				\$ (115,361)	(115,361)	(115,361)	(115,361)	(115,363)	
2019	(505,003)	5					\$ (101,001)	(101,001)	(101,001)	(101,001)	(100,999)
Net increase (decrease) in pension expense							\$ (253,793)	\$ (317,834)	\$ (344,155)	\$ (216,364)	\$ (100,999)

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	\$ 320,202	\$ -	\$ 320,202	\$ -	\$ -
2016	131,591	-	105,272	26,319	-
2017	-	638,957	383,373	-	255,584
2018	-	576,807	230,722	-	346,085
2019	-	505,003	101,001	-	404,002
				\$ 26,319	\$ 1,005,671

City of Beckley, 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	\$ -		\$ -													
2015	491,509	3.661516			\$ 134,236	134,236	134,236	88,801								
2016	(413,682)	3.643525				\$ (113,539)	(113,539)	(113,539)	(73,065)							
2017	380,786	3.518348					\$ 108,229	108,229	108,229	56,099						
2018	(114,768)	3.871779						\$ (29,642)	(29,642)	(29,642)	(25,842)					
2019	1,717,861	4							\$ 429,465	429,465	429,465	429,466				
Net increase (decrease) in pension expense									\$ 434,987	\$ 455,922	\$ 403,623	\$ 429,466	\$ -	\$ -	\$ -	

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	\$ -	\$ -	\$ -	\$ -	\$ -
2015	491,509	-	491,509	-	-
2016	-	413,682	413,682	-	-
2017	380,786	-	324,687	56,099	-
2018	-	114,768	59,284	-	55,484
2019	1,717,861	-	429,465	1,288,396	-
				\$ 1,344,495	\$ 55,484

City of Beckley, West Virginia Firemen's Pension and Relief Fund  
 Actuarial Information to Include in the Financial Statements  
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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	\$ -		\$ -	-	-	-	-	-	-	-	-	-	-	-	-
2015	-	3.661516			\$ -	-	-	-	-	-	-	-	-	-	-
2016	13,842,099	3.643525				\$ 3,799,095	3,799,095	3,799,095	2,444,814						
2017	(3,398,993)	3.518348					\$ (966,076)	(966,076)	(966,076)	(500,765)					
2018	(778,140)	3.871779						\$ (200,977)	(200,977)	(200,977)	(175,209)				
2019	964,067	4							\$ 241,017	241,017	241,017	241,016			
Net increase (decrease) in pension expense									\$ 1,518,778	\$ (460,725)	\$ 65,808	\$ 241,016	\$ -	\$ -	\$ -

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	\$ -	\$ -	\$ -	\$ -	\$ -
2015	-	-	-	-	-
2016	13,842,099	-	13,842,099	-	-
2017	-	3,398,993	2,898,228	-	500,765
2018	-	778,140	401,954	-	376,186
2019	964,067	-	241,017	723,050	-
				\$ 723,050	\$ 876,951



City of Beckley, 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	\$ 48,944,997	\$ -	\$ 48,944,997	\$ 19,275,679	39.38%	\$ 179,933	\$ 1,184,566	\$ 2,145,187	\$ 8,931	\$ 849,835
2020	\$ 50,208,409	\$ -	\$ 50,208,409	\$ 19,335,895	38.51%	\$ 177,787	\$ 1,185,903	\$ 2,235,051	\$ 9,429	\$ 850,516
2021	\$ 51,402,965	\$ 107,228	\$ 51,510,193	\$ 19,305,621	37.56%	\$ 171,587	\$ 1,178,101	\$ 2,336,724	\$ 9,496	\$ 846,578
2022	\$ 52,488,230	\$ 310,229	\$ 52,798,459	\$ 19,155,667	36.50%	\$ 167,810	\$ 1,171,790	\$ 2,406,081	\$ 9,560	\$ 838,061
2023	\$ 53,515,023	\$ 618,418	\$ 54,133,441	\$ 18,917,687	35.35%	\$ 161,444	\$ 1,177,766	\$ 2,513,467	\$ 9,519	\$ 824,954
2024	\$ 54,423,830	\$ 1,025,868	\$ 55,449,698	\$ 18,558,865	34.10%	\$ 153,291	\$ 1,169,993	\$ 2,668,039	\$ 9,573	\$ 805,012
2025	\$ 55,147,797	\$ 1,559,287	\$ 56,707,084	\$ 18,009,549	32.66%	\$ 149,029	\$ 1,183,711	\$ 2,751,445	\$ 9,729	\$ 778,644
2026	\$ 55,779,944	\$ 2,210,480	\$ 57,990,424	\$ 17,359,760	31.12%	\$ 146,162	\$ 1,192,984	\$ 2,814,897	\$ 9,887	\$ 748,130
2027	\$ 56,346,973	\$ 2,988,900	\$ 59,335,873	\$ 16,622,252	29.50%	\$ 144,465	\$ 1,216,903	\$ 2,873,125	\$ 10,046	\$ 714,138
2028	\$ 56,860,763	\$ 3,888,761	\$ 60,749,524	\$ 15,814,587	27.81%	\$ 140,907	\$ 1,242,871	\$ 2,945,718	\$ 10,206	\$ 676,672
2029	\$ 57,289,228	\$ 4,920,923	\$ 62,210,151	\$ 14,919,113	26.04%	\$ 140,738	\$ 1,271,382	\$ 2,978,445	\$ 10,367	\$ 636,275
2030	\$ 57,696,793	\$ 6,099,289	\$ 63,796,082	\$ 13,978,696	24.23%	\$ 137,895	\$ 1,313,333	\$ 3,048,488	\$ 10,407	\$ 593,267
2031	\$ 58,023,046	\$ 7,418,823	\$ 65,441,869	\$ 12,964,296	22.34%	\$ 130,933	\$ 1,334,515	\$ 3,133,853	\$ 10,567	\$ 546,032
2032	\$ 58,218,612	\$ 8,920,288	\$ 67,138,900	\$ 11,831,356	20.32%	\$ 126,018	\$ 1,359,006	\$ 3,191,311	\$ 10,599	\$ 494,206
2033	\$ 58,322,871	\$ 10,616,456	\$ 68,939,327	\$ 10,608,676	18.19%	\$ 122,506	\$ 1,399,924	\$ 3,232,765	\$ 10,758	\$ 439,092
2034	\$ 58,359,976	\$ 12,505,303	\$ 70,865,279	\$ 9,326,675	15.98%	\$ 116,073	\$ 1,470,035	\$ 3,281,799	\$ 10,917	\$ 381,724
2035	\$ 58,303,786	\$ 14,598,291	\$ 72,902,077	\$ 8,001,791	13.72%	\$ 112,121	\$ 1,516,805	\$ 3,310,068	\$ 11,077	\$ 322,425
2036	\$ 58,188,413	\$ 16,915,865	\$ 75,104,278	\$ 6,631,997	11.40%	\$ 107,234	\$ 1,576,085	\$ 3,364,766	\$ 11,093	\$ 260,777
2037	\$ 57,977,785	\$ 19,463,723	\$ 77,441,508	\$ 5,200,234	8.97%	\$ 98,542	\$ 1,635,892	\$ 3,427,240	\$ 11,250	\$ 196,091
2038	\$ 57,636,144	\$ 22,263,889	\$ 79,900,033	\$ 3,692,269	6.41%	\$ 87,817	\$ 1,692,406	\$ 3,477,461	\$ 11,255	\$ 128,134
2039	\$ 57,162,096	\$ 25,344,882	\$ 82,506,978	\$ 2,111,909	3.69%	\$ 76,165	\$ 1,771,128	\$ 3,530,318	\$ 11,408	\$ 57,331
2040	\$ 56,543,378	\$ 28,718,829	\$ 85,262,207	\$ 474,807	0.84%	\$ 61,851	\$ 1,837,577	\$ 3,595,058	\$ 11,561	\$ -
2041	\$ 55,746,870	\$ 32,425,611	\$ 88,172,481	\$ -	0.00%	\$ 50,117	\$ 1,925,854	\$ 3,633,391	\$ 11,549	\$ -
2042	\$ 54,806,887	\$ 36,453,214	\$ 91,260,101	\$ -	0.00%	\$ 41,160	\$ 2,051,013	\$ 3,661,383	\$ 11,528	\$ -
2043	\$ 53,746,491	\$ 40,746,498	\$ 94,492,989	\$ -	0.00%	\$ 32,385	\$ 2,224,694	\$ 3,670,698	\$ 11,497	\$ -
2044	\$ 52,582,057	\$ 45,250,000	\$ 97,832,057	\$ -	0.00%	\$ 26,277	\$ 2,399,713	\$ 3,656,644	\$ 11,455	\$ -
2045	\$ 51,345,427	\$ 49,933,143	\$ 101,278,570	\$ -	0.00%	\$ 19,419	\$ 2,594,196	\$ 3,653,947	\$ 11,402	\$ -
2046	\$ 50,019,784	\$ 54,782,640	\$ 104,802,424	\$ -	0.00%	\$ 12,614	\$ 2,794,948	\$ 3,635,895	\$ 11,338	\$ -
2047	\$ 48,617,956	\$ 59,804,566	\$ 108,422,522	\$ -	0.00%	\$ 8,590	\$ 3,103,703	\$ 3,594,159	\$ 11,456	\$ -
2048	\$ 47,174,939	\$ 64,977,922	\$ 112,152,861	\$ -	0.00%	\$ 6,148	\$ 3,357,072	\$ 3,538,307	\$ 11,173	\$ -
2049	\$ 45,711,746	\$ 70,302,832	\$ 116,014,578	\$ -	0.00%	\$ 3,951	\$ 3,632,388	\$ 3,478,640	\$ 11,070	\$ 3,263
2050	\$ 44,232,458	\$ 75,785,782	\$ 120,018,240	\$ 149,892	0.34%	\$ 2,620	\$ 3,928,876	\$ 3,411,273	\$ 10,953	\$ 18,078
2051	\$ 42,748,750	\$ 81,436,445	\$ 124,185,195	\$ 677,241	1.58%	\$ 1,839	\$ 4,848,780	\$ 3,339,023	\$ 11,038	\$ 63,867
2052	\$ 41,268,254	\$ 87,265,828	\$ 128,534,082	\$ 2,241,666	5.43%	\$ 944	\$ 5,212,314	\$ 3,267,115	\$ 10,897	\$ 143,939
2053	\$ 39,790,218	\$ 93,282,063	\$ 133,072,281	\$ 4,320,852	10.86%	\$ 641	\$ 5,604,508	\$ 3,190,702	\$ 10,740	\$ 247,927
2054	\$ 38,322,274	\$ 99,487,694	\$ 137,809,968	\$ 6,972,485	18.19%	\$ 430	\$ 6,028,175	\$ 3,113,900	\$ 10,566	\$ 378,386
2055	\$ 36,865,730	\$ 105,882,244	\$ 142,747,974	\$ 10,255,011	27.82%	\$ -	\$ 6,480,594	\$ 3,039,090	\$ 10,615	\$ 537,821
2056	\$ 35,417,971	\$ 112,478,686	\$ 147,896,657	\$ 14,223,720	40.16%	\$ -	\$ 10,028,566	\$ 2,961,619	\$ 10,411	\$ 797,092
2057	\$ 33,984,258	\$ 119,296,024	\$ 153,280,282	\$ 22,077,349	64.96%	\$ -	\$ 10,634,674	\$ 2,884,813	\$ 10,188	\$ 1,165,707
2058	\$ 32,564,543	\$ 126,348,417	\$ 158,912,960	\$ 30,982,728	95.14%	\$ -	\$ 11,281,132	\$ 2,808,402	\$ 10,206	\$ 1,582,534
2059	\$ 31,159,052	\$ 133,650,933	\$ 164,809,985	\$ 41,027,787	131.67%	\$ -	\$ 11,971,188	\$ 2,732,280	\$ 9,949	\$ 2,051,617

City of Beckley, 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	\$ 2,145,187	\$ -	\$ 2,098,491	\$ -	\$ 2,103,929
2020	\$ 2,235,051	\$ -	\$ 2,092,247	\$ -	\$ 2,108,556
2021	\$ 2,336,724	\$ -	\$ 2,093,229	\$ -	\$ 2,120,494
2022	\$ 2,406,081	\$ -	\$ 2,062,544	\$ -	\$ 2,100,254
2023	\$ 2,513,467	\$ -	\$ 2,061,816	\$ -	\$ 2,110,409
2024	\$ 2,668,039	\$ -	\$ 2,094,366	\$ -	\$ 2,154,852
2025	\$ 2,751,445	\$ -	\$ 2,066,831	\$ -	\$ 2,137,558
2026	\$ 2,814,897	\$ -	\$ 2,023,440	\$ -	\$ 2,103,543
2027	\$ 2,873,125	\$ -	\$ 1,976,360	\$ -	\$ 2,065,263
2028	\$ 2,945,718	\$ -	\$ 1,939,038	\$ -	\$ 2,036,778
2029	\$ 2,978,445	\$ -	\$ 1,876,154	\$ -	\$ 1,980,952
2030	\$ 3,048,488	\$ -	\$ 1,837,584	\$ -	\$ 1,950,297
2031	\$ 3,133,853	\$ -	\$ 1,807,694	\$ -	\$ 1,928,532
2032	\$ 3,191,311	\$ -	\$ 1,761,567	\$ -	\$ 1,889,075
2033	\$ 3,232,765	\$ -	\$ 1,707,607	\$ -	\$ 1,840,713
2034	\$ 3,281,799	\$ -	\$ 1,658,859	\$ -	\$ 1,797,445
2035	\$ 3,310,068	\$ -	\$ 1,601,099	\$ -	\$ 1,743,864
2036	\$ 3,364,766	\$ -	\$ 1,557,470	\$ -	\$ 1,705,149
2037	\$ 3,427,240	\$ -	\$ 1,518,075	\$ -	\$ 1,670,644
2038	\$ 3,477,461	\$ -	\$ 1,473,990	\$ -	\$ 1,630,547
2039	\$ -	\$ 3,530,318	\$ -	\$ 1,876,813	\$ 1,592,270
2040	\$ -	\$ 3,595,058	\$ -	\$ 1,853,224	\$ 1,559,699
2041	\$ -	\$ 3,633,391	\$ -	\$ 1,816,140	\$ 1,516,278
2042	\$ -	\$ 3,661,383	\$ -	\$ 1,774,587	\$ 1,469,751
2043	\$ -	\$ 3,670,698	\$ -	\$ 1,725,106	\$ 1,417,356
2044	\$ -	\$ 3,656,644	\$ -	\$ 1,666,344	\$ 1,358,141
2045	\$ -	\$ 3,653,947	\$ -	\$ 1,614,579	\$ 1,305,438
2046	\$ -	\$ 3,635,895	\$ -	\$ 1,557,842	\$ 1,249,503
2047	\$ -	\$ 3,594,159	\$ -	\$ 1,493,222	\$ 1,188,106
2048	\$ -	\$ 3,538,307	\$ -	\$ 1,425,402	\$ 1,125,085
2049	\$ -	\$ 3,478,640	\$ -	\$ 1,358,834	\$ 1,063,974
2050	\$ -	\$ 3,411,273	\$ -	\$ 1,292,077	\$ 1,003,621
2051	\$ -	\$ 3,339,023	\$ -	\$ 1,226,327	\$ 944,941
2052	\$ -	\$ 3,267,115	\$ -	\$ 1,163,500	\$ 889,368
2053	\$ 3,190,702	\$ -	\$ 698,834	\$ -	\$ 835,478
2054	\$ 3,113,900	\$ -	\$ 652,644	\$ -	\$ 784,306
2055	\$ 3,039,090	\$ -	\$ 609,535	\$ -	\$ 736,302
2056	\$ 2,961,619	\$ -	\$ 568,419	\$ -	\$ 690,198
2057	\$ 2,884,813	\$ -	\$ 529,835	\$ -	\$ 646,687
2058	\$ 2,808,402	\$ -	\$ 493,589	\$ -	\$ 605,574
2059	\$ 2,732,280	\$ -	\$ 459,532	\$ -	\$ 566,716