Municipal Pensions Oversight Board

City of Weirton, 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. Diana Smoljanovich
Finance Director
City of Weirton
1959 Eldersville Road
Follansbee, WV 26037

Mr. Phillip Martin
Pension Board Secretary
City of Weirton, West Virginia
Firemen's Pension and Relief Fund

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

Dear Diana

The following report contains the GASB 67 and GASB 68 actuarial information for the City of Weirton 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 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.

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.

Methodology, Reliance and Certification (cont.)

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 slections 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.

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.

Methodology, Reliance and Certification (cont.)

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 Weirton, 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	$ 15,839,823
Plan fiduciary net position	(11,756,068)
Employer's net pension liability	$ 4,083,755
Plan fiduciary net position as a percentage of the total pension liability	74.22%

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)	6.5000%
Single discount rate (EOY)	6.5000%
Investment rate of return	6.50 percent, net of pension plan investment expense, including inflation
Long-term municpal bond rate (BOY)	3.62%
Long-term municpal 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	2043
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 5.50%	Current Discount Rate 6.50%	1% Increase 7.50%
Employer's net pension liability	$ 6,192,845	$ 4,083,755	$ 2,355,888

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	$ 14,396,664	$ 10,974,860	$ 3,421,804
Changes for the year:			
Service cost	454,924		454,924
Interest	912,022		912,022
Changes of benefit terms	-		-
Differences between expected and actual experience	807,333		807,333
Changes of assumptions	-		-
Contributions - employer (including Premium Tax Allocation)		627,874	(627,874)
Contributions - member		95,312	(95,312)
Net investment income		789,442	(789,442)
Benefit payments, including refunds of member contributions	(731,120)	(731,120)	-
Administrative expense		-	-
Other		(300)	300
Net Changes	1,443,159	781,208	661,951
Balances at 6/30/19	$ 15,839,823	$ 11,756,068	$ 4,083,755
Return on Investments		7.2%	

Components of Employer's Pension Expense for the Fiscal Year Ended June 30, 2019

Note	Description	Amount
A	Service Cost	$ 454,924
B	Interest on the total pension liability	912,022
A	Changes of benefit terms	-
C	Differences between expected and actual experience	50,181
C	Changes of assumptions	232,151
A	Employee contributions	(95,312)
D	Projected earnings on pension plan investments	(713,099)
C	Differences between expected and actual earnings on plan investments	62,333
A	Pension plan administrative expense	-
A	Other changes in fiduciary net position	300
	Total Pension Expense	**$ 903,500**

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	$ 14,396,664	100%	6.50%	$ 935,783
Service Cost (End of Year)	454,924	0%	6.50%	-
Benefit payments, including refunds of employee contributions	(731,120)	50%	6.50%	(23,761)
Total interest on the total pension liability				**$ 912,022**

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	$ 10,974,860	100%	6.50%	$ 713,366
Employer contributions	627,874	50%	6.50%	20,406
Employee contributions	95,312	50%	6.50%	3,098
Benefit payments, including refunds of employee contributions	(731,120)	50%	6.50%	(23,761)
Administrative expense and other	(300)	50%	6.50%	(10)
Total Projected Earnings				**$ 713,099**

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	$ 730,433	$ 363,690
Changes of assumptions	445,929	340,241
Net difference between projected and actual earnings on pension plan investments	-	174,553
Total	**$ 1,176,362**	**$ 878,484**

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	$ 296,276
2021	(268,701)
2022	124,105
2023	146,198
2024	-
Thereafter	-

City of Weirton, 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 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	$ 454,924	$ 371,654	$ 416,516	$ 305,455	$ 262,275	$ 275,216	$ -	$ -	$ -	$ -
Interest	912,022	888,071	836,975	856,444	797,673	780,380	-	-	-	-
Changes of benefit terms	-	-	-	-	-	-	-	-	-	-
Differences between expected and actual experience	807,333	(818)	(910,435)	390,283	(58,032)	-	-	-	-	-
Changes of assumptions	-	-	(852,836)	2,057,993	-	-	-	-	-	-
Benefit payments, including refunds of member contributions	(731,120)	(679,743)	(648,973)	(651,642)	(612,845)	(600,032)	-	-	-	-
Net change in total pension liability	1,443,159	579,164	(1,158,753)	2,958,533	389,071	455,564	-	-	-	-
Total pension liability - beginning	14,396,664	13,817,500	14,976,253	12,017,720	11,628,649	11,173,085	-	-	-	-
Total pension liability - ending (a)	**$ 15,839,823**	**$ 14,396,664**	**$ 13,817,500**	**$ 14,976,253**	**$ 12,017,720**	**$ 11,628,649**	**$ -**	**$ -**	**$ -**	**$ -**

Plan fiduciary net position	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Contributions - employer (including Premium Tax Allocation)	$ 627,874	$ 643,214	$ 681,189	$ 455,266	$ 431,214	$ 563,823	$ -	$ -	$ -	$ -
Contributions - member	95,312	97,251	85,170	82,461	84,967	80,120	-	-	-	-
Net investment income	789,442	771,129	1,012,435	(59,608)	345,264	1,162,109	-	-	-	-
Benefit payments, including refunds of member contributions	(731,120)	(679,743)	(648,973)	(651,642)	(612,845)	(600,032)	-	-	-	-
Administrative expense	-	(283)	(868)	(3,766)	(2,682)	(8,950)	-	-	-	-
Other	(300)	-	-	-	264,112	-	-	-	-	-
Net change in plan fiduciary net position	$ 781,208	$ 831,568	$ 1,128,953	$ (177,289)	$ 510,030	$ 1,197,070	$ -	$ -	$ -	$ -
Plan fiduciary net position - beginning	10,974,860	10,143,292	9,014,339	9,183,164	8,673,134	7,476,064	-	-	-	-
Plan fiduciary net position - ending (b)	**$ 11,756,068**	**$ 10,974,860**	**$ 10,143,292**	**$ 9,005,875**	**$ 9,183,164**	**$ 8,673,134**	**$ -**	**$ -**	**$ -**	**$ -**
Employer's net pension liability - ending (a)-(b)	$ 4,083,755	$ 3,421,804	$ 3,674,208	$ 5,970,378	$ 2,834,556	$ 2,955,515	$ -	$ -	$ -	$ -
Plan fiduciary net position as a percentage of the total pension liability	74.22%	76.23%	73.41%	60.13%	76.41%	74.58%	0.00%	0.00%	0.00%	0.00%
Covered payroll	$ 1,264,119	$ 1,039,842	$ 1,026,836	$ 1,115,043	$ 958,555	$ 983,476	$ -	$ -	$ -	$ -
Employer's net pension liability as a percentage of covered payroll	323.05%	329.07%	357.82%	535.44%	295.71%	300.52%	0.00%	0.00%	0.00%	0.00%
Expected average remaining service years of all participants	5.00	4.69	4.99	5.11	4.39	-	-	-	-	-

Notes to Schedule:

Benefit changes: There were no changes for FY2019.

Changes of assumptions: The discount rate changed from 6.5000% to 6.5000%.

City of Weirton, 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	$ 559,116	$ 503,189	$ 530,081	$ 613,070	$ 354,731	$ 396,427	$ 518,823	$ -	$ -	$ -
Contributions in relation to the actuarially determined contribution										
Employer provided	400,000	425,000	467,280	247,273	231,096	215,978	201,850	-	-	-
State provided	227,874	218,214	213,909	207,993	200,118	347,845	206,660	-	-	-
Contribution deficiency (excess)	$ (68,758)	$ (140,025)	$ (151,108)	$ 157,804	$ (76,483)	$ (167,396)	$ 110,313	$ -	$ -	$ -
Covered payroll	$ 1,264,119	$ 1,039,842	$ 1,026,836	$ 1,115,043	$ 958,555	$ 983,476	$ 918,877	$ -	$ -	$ -
Contributions as a percentage of covered employee payroll	49.67%	62.00%	66.00%	41.00%	45.00%	57.00%	44.00%	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	6.50 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

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)	Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Projected and Actual Earnings on Plan Investments: 2015	2016	2017	2018	2019	2020	2021	2022	2023
2015	$ 267,622	5	$ 53,524	53,524	53,524	53,524	53,526				
2016	698,311	5		$ 139,662	139,662	139,662	139,662	139,663			
2017	(468,079)	5			$ (93,616)	(93,616)	(93,616)	(93,616)	(93,615)		
2018	(109,851)	5				$ (21,970)	(21,970)	(21,970)	(21,970)	(21,971)	
2019	(76,343)	5					$ (15,269)	(15,269)	(15,269)	(15,269)	(15,267)
Net increase (decrease) in pension expense							$ 62,333	$ 8,808	$ (130,854)	$ (37,240)	$ (15,267)

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	$ 267,622	$ -	$ 267,622	$ -	$ -
2016	698,311	-	558,648	139,663	-
2017	-	468,079	280,848	-	187,231
2018	-	109,851	43,940	-	65,911
2019	-	76,343	15,269	-	61,074
				$ 139,663	**$ 314,216**

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	(58,032)	4.388546			$ (13,224)	(13,224)	(13,224)	(13,224)	(5,136)						
2016	390,283	5.106481				$ 76,429	76,429	76,429	76,429	76,429	8,138				
2017	(910,435)	4.991277					$ (182,405)	(182,405)	(182,405)	(182,405)	(180,815)				
2018	(818)	4.69041						$ (174)	(174)	(174)	(174)	(122)			
2019	807,333	5							$ 161,467	161,467	161,467	161,467	161,465		
Net increase (decrease) in pension expense									$ 50,181	$ 55,317	$ (11,384)	$ 161,345	$ 161,465	$ -	$ -

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

				Balances at June 30, 2019	
Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in Pension Expense Through June 30, 2019 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	$ -	$ -	$ -	$ -	$ -
2014	-	-	-	-	-
2015	-	58,032	58,032	-	-
2016	390,283	-	305,716	84,567	-
2017	-	910,435	547,215	-	363,220
2018	-	818	348	-	470
2019	807,333	-	161,467	645,866	-
				$ 730,433	**$ 363,690**

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.

Year	Changes of Assumptions	Recognition Period (Years)	Increase (Decrease) in Pension Expense Arising from the Effects of Changes of Assumptions												
			Prior	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Thereafter
Prior	$ -		$ -	-	-	-	-	-	-	-	-	-	-	-	-
2014	-	1		$ -											
2015	-	4.388546			$ -	-	-	-	-						
2016	2,057,993	5.106481				$ 403,016	403,016	403,016	403,016	403,016	42,913				
2017	(852,836)	4.991277					$ (170,865)	(170,865)	(170,865)	(170,865)	(169,376)				
2018	-	4.69041						$ -	-	-	-	-			
2019	-	5							$ -	-	-	-	-		
Net increase (decrease) in pension expense									$ 232,151	$ 232,151	$ (126,463)	$ -	$ -	$ -	$ -

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)	Balances at June 30, 2019 Deferred Inflows of Resources (b) - (c)
Prior	$ -	$ -	$ -	$ -	$ -
2014	-	-	-	-	-
2015	-	-	-	-	-
2016	2,057,993	-	1,612,064	445,929	-
2017	-	852,836	512,595	-	340,241
2018	-	-	-	-	-
2019	-	-	-	-	-
				$ 445,929	**$ 340,241**