



**Municipal Pensions
Oversight Board**

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

GASB 68 Actuarial Information for the
Measurement Period Ending
June 30, 2020

Bolton

Submitted by:

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November 4, 2020

Mr. Mark Spickler
Finance Director
City of Martinsburg
232 North Queen Street
Martinsburg, WV 25401

Firefighter Michael Bowers
Pension Board Secretary
City of Martinsburg
Firemen's Pension and Relief Fund

Re: City of Martinsburg Firemen's Pension and Relief Fund
GASB 68 Actuarial Information for the Measurement Period Ending June 30, 2020

Dear Mark,

The following report contains the GASB 67 and GASB 68 actuarial information for the City of Martinsburg Firemen's Pension and Relief Fund to be included in the City's financial statements for FY 2020. The GASB 67 information has been provided as of June 30, 2020 (the GASB 68 measurement date for FY 2020).

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, 2020 (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, 2019 actuarial valuation rolled forward to June 30, 2020. The methods, assumptions, and participant data used are detailed in the July 1, 2019 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, 2020 is contained in the July 1, 2018 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 a blended discount rate of 3.61%. The plan's expected gross rate of investment return of 4.50% has been blended with the 2.45% 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, 2020. The development of the blended discount rate is included within this report.

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 fund's current funding ratio, liquidity ratio, equity exposure and expected funded status in 15 years.

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.

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. 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.

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.



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, 2019 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, FCA, MAAA



City of Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



Net Pension Liability of the Employer

The components of the net pension liability of the Employer at June 30, 2020, were as follows:

Total pension liability	\$ 42,647,039
Plan fiduciary net position	(3,202,766)
Employer's net pension liability	<u>\$ 39,444,273</u>
Plan fiduciary net position as a percentage of the total pension liability	7.51%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of July 1, 2019 rolled forward to June 30, 2020 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)	3.86%
Single discount rate (EOY)	3.61%
Investment rate of return (BOY)	4.50%, net of pension plan investment expense, including inflation
Investment rate of return (EOY)	4.50%, net of pension plan investment expense, including inflation
Long-term municipal bond rate (BOY)	3.13%
Long-term municipal bond rate (EOY)	2.45%
Mortality	RP-2014 Blue Collar Mortality Table with generational projection using Scale MP-2014
Year Fund is projected to be fully funded	2057
Year assets are expected to be depleted for a closed plan	2035

The above is a summary of key actuarial assumptions. Full descriptions of the actuarial assumptions are available in the July 1, 2019 actuarial valuation report.

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

	1% Decrease 2.61%	Current Discount Rate 3.61%	1% Increase 4.61%
Employer's net pension liability	\$ 47,458,555	\$ 39,444,273	\$ 33,219,591

City of Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



Changes in the Net Pension Liability

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at 6/30/19	\$ 40,336,431	\$ 3,096,167	\$ 37,240,264
Changes for the year:			
Service cost	1,263,830		1,263,830
Interest	1,529,903		1,529,903
Changes of benefit terms	-		-
Differences between expected and actual experience	(782,224)		(782,224)
Changes of assumptions	1,702,382		1,702,382
Contributions - employer (including Premium Tax Allocation)		1,266,051	(1,266,051)
Contributions - member		194,778	(194,778)
Net investment income		51,053	(51,053)
Benefit payments, including refunds of member contributions	(1,403,283)	(1,403,283)	-
Administrative expense		(2,000)	2,000
Other		-	-
Net Changes	<u>2,310,608</u>	<u>106,599</u>	<u>2,204,009</u>
Balances at 6/30/20	<u>\$ 42,647,039</u>	<u>\$ 3,202,766</u>	<u>\$ 39,444,273</u>
Return on Investments		1.6%	

City of Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



Components of Employer's Pension Expense for the Fiscal Year Ended June 30, 2020

Note	Description	Amount
A	Service cost	\$ 1,263,830
B	Interest on the total pension liability	1,529,903
A	Changes of benefit terms	-
C	Differences between expected and actual experience	(151,352)
C	Changes of assumptions	1,255,691
A	Employee contributions	(194,778)
D	Projected earnings on pension plan investments	(140,578)
C	Differences between expected and actual earnings on plan investments	(5,794)
A	Pension plan administrative expense	2,000
A	Other changes in fiduciary net position	-
Total Pension Expense		\$ 3,558,922

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)	Interest Rate (c)	Projected Earnings (a) x (b) x (c)
Beginning total pension liability	\$ 40,336,431	100%	3.86%	\$ 1,556,986
Service cost (End of Year)	1,263,830	0%	3.86%	-
Benefit payments, including refunds of employee contributions	(1,403,283)	50%	3.86%	(27,083)
Total interest on the total pension liability				\$ 1,529,903

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	\$ 3,096,167	100%	4.50%	\$ 139,328
Employer contributions	1,266,051	50%	4.50%	28,486
Employee contributions	194,778	50%	4.50%	4,383
Benefit payments, including refunds of employee contributions	(1,403,283)	50%	4.50%	(31,574)
Administrative expense and other	(2,000)	50%	4.50%	(45)
Total Projected Earnings				\$ 140,578

City of Martinsburg, West Virginia Firemen’s Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



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

At June 30, 2020, 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	\$ 498,269	\$ 901,670
Changes of assumptions	2,384,167	1,545,927
Net difference between projected and actual earnings on pension plan investments	4,092	-
Total	\$ 2,886,528	\$ 2,447,597

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:	
2021	\$ 513,461
2022	(324,128)
2023	62,940
2024	186,658
2025	-
Thereafter	-

City of Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



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

Total pension liability	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Service cost	\$ 1,263,830	\$ 1,288,466	\$ 1,285,344	\$ 1,419,431	\$ 783,440	\$ 775,244	\$ 733,383	\$ -	\$ -	\$ -
Interest	1,529,903	1,443,011	1,407,678	1,300,640	1,324,370	1,308,568	1,326,380	-	-	-
Changes of benefit terms	-	-	-	-	-	-	-	-	-	-
Differences between expected and actual experience	(782,224)	562,259	(549,358)	412,930	(79,277)	(487,090)	-	-	-	-
Changes of assumptions	1,702,382	(653,935)	(367,921)	(3,115,954)	8,776,101	763,505	946,799	-	-	-
Benefit payments, including refunds of member contributions	(1,403,283)	(1,346,280)	(1,318,338)	(1,380,286)	(1,285,531)	(1,154,037)	(1,131,681)	-	-	-
Net change in total pension liability	2,310,608	1,293,521	457,405	(1,363,239)	9,519,103	1,206,190	1,874,881	-	-	-
Total pension liability - beginning	40,336,431	39,042,910	38,585,505	39,948,744	30,429,641	29,223,451	27,348,570	-	-	-
Total pension liability - ending (a)	\$ 42,647,039	\$ 40,336,431	\$ 39,042,910	\$ 38,585,505	\$ 39,948,744	\$ 30,429,641	\$ 29,223,451	\$ -	\$ -	\$ -
Plan fiduciary net position	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Contributions - employer (including Premium Tax Allocation)	\$ 1,266,051	\$ 1,193,866	\$ 1,144,488	\$ 1,089,467	\$ 1,027,488	\$ 983,274	\$ 995,355	\$ -	\$ -	\$ -
Contributions - member	194,778	176,173	173,464	193,583	163,644	156,408	152,184	-	-	-
Net investment income	51,053	100,158	232,309	279,899	(24,790)	65,233	286,465	-	-	-
Benefit payments, including refunds of member contributions	(1,403,283)	(1,346,280)	(1,318,338)	(1,380,286)	(1,285,531)	(1,154,037)	(1,131,681)	-	-	-
Administrative expense	(2,000)	(2,000)	(2,550)	(1,000)	(1,000)	(1,000)	(1,000)	-	-	-
Other	-	(1,250)	-	-	-	-	-	-	-	-
Net change in plan fiduciary net position	\$ 106,599	\$ 120,667	\$ 229,373	\$ 181,663	\$ (120,189)	\$ 49,878	\$ 301,323	\$ -	\$ -	\$ -
Plan fiduciary net position - beginning	3,096,167	2,975,500	2,746,127	2,564,464	2,693,372	2,643,494	2,342,171	-	-	-
Plan fiduciary net position - ending (b)	\$ 3,202,766	\$ 3,096,167	\$ 2,975,500	\$ 2,746,127	\$ 2,573,183	\$ 2,693,372	\$ 2,643,494	\$ -	\$ -	\$ -
Employer's net pension liability - ending (a)-(b)	<u>\$ 39,444,273</u>	<u>\$ 37,240,264</u>	<u>\$ 36,067,410</u>	<u>\$ 35,839,378</u>	<u>\$ 37,375,561</u>	<u>\$ 27,736,269</u>	<u>\$ 26,579,957</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Plan fiduciary net position as a percentage of the total pension liability	7.51%	7.68%	7.62%	7.12%	6.44%	8.85%	9.05%	0.00%	0.00%	0.00%
Covered payroll	\$ 2,098,326	\$ 2,137,952	\$ 2,039,496	\$ 1,962,902	\$ 1,825,463	\$ 1,863,130	\$ 1,880,224	\$ -	\$ -	\$ -
Employer's net pension liability as a percentage of covered payroll	1879.80%	1741.87%	1768.45%	1825.84%	2047.46%	1488.69%	1413.66%	0.00%	0.00%	0.00%
Expected average remaining service years of all participants	5.00	6.00	5.83	5.71	5.66	5.61	-	-	-	-

Notes to Schedule:

Benefit changes: There were no changes for FY2020.

Changes of assumptions: The discount rate changed from 3.86% to 3.61%.

*Market value of assets as of July 1, 2016, excludes \$8,719, included in the market value of assets as of June 30, 2016, used for the actuarial valuation report for the fiscal year end June 30, 2016.

City of Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



Schedule of Employer Contributions
 Last 10 Fiscal Years

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Actuarially determined contribution	\$ 2,785,253	\$ 2,847,951	\$ 2,519,020	\$ 2,401,195	\$ 2,184,720	\$ 1,606,308	\$ 1,568,205	\$ 1,482,830	\$ -	\$ -
Contributions in relation to the actuarially determined contribution										
Employer provided	888,393	835,180	785,449	738,972	695,534	654,938	680,168	600,590	-	-
State provided	377,658	358,686	359,039	350,495	331,954	328,336	315,187	558,796	-	-
Contribution deficiency (excess)	<u>\$ 1,519,202</u>	<u>\$ 1,654,085</u>	<u>\$ 1,374,532</u>	<u>\$ 1,311,728</u>	<u>\$ 1,157,232</u>	<u>\$ 623,034</u>	<u>\$ 572,850</u>	<u>\$ 323,444</u>	<u>\$ -</u>	<u>\$ -</u>
Covered payroll	\$ 2,098,326	\$ 2,137,952	\$ 2,039,496	\$ 1,962,902	\$ 1,825,463	\$ 1,863,130	\$ 1,880,224	\$ 1,844,289	\$ -	\$ -
Contributions as a percentage of covered employee payroll	60.34%	55.84%	56.12%	55.50%	56.29%	52.78%	52.94%	62.86%	N/A	N/A

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	31.5 years
Asset valuation method	Market Value
Inflation	2.75 percent
Salary increases	Rates vary by years of service
Investment rate of return	4.50%, 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 Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 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.

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)	2016	2017	2018	2019	2020	2021	2022	2023	2024
2016	\$ 157,074	5	\$ 31,415	31,415	31,415	31,415	31,414				
2017	(179,285)	5		\$ (35,857)	(35,857)	(35,857)	(35,857)	(35,857)			
2018	(130,481)	5			\$ (26,096)	(26,096)	(26,096)	(26,096)	(26,097)		
2019	34,202	5				\$ 6,840	6,840	6,840	6,840	6,842	
2020	89,525	5					\$ 17,905	17,905	17,905	17,905	17,905
Net increase (decrease) in pension expense							\$ (5,794)	\$ (37,208)	\$ (1,352)	\$ 24,747	\$ 17,905

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, 2020 (c)	Balances at June 30, 2020	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2016	\$ 157,074	\$ -	\$ 157,074	\$ -	\$ -
2017	-	179,285	143,428	-	35,857
2018	-	130,481	78,288	-	52,193
2019	34,202	-	13,680	20,522	-
2020	89,525	-	17,905	71,620	-
				\$ 92,142	\$ 88,050

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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Thereafter
Prior	-	-																	
2011	-	-																	
2012	-	-																	
2013	-	-																	
2014	-	-																	
2015	(487,090)	5.607269						\$ (86,868)	(86,868)	(86,868)	(86,868)	(86,868)	(52,750)						
2016	(79,277)	5.659196						\$ (14,009)	(14,009)	(14,009)	(14,009)	(14,009)	(9,232)						
2017	412,930	5.705384							\$ 72,375	72,375	72,375	72,375	72,375	51,055					
2018	(549,358)	5.829770								\$ (94,233)	(94,233)	(94,233)	(94,233)	(94,233)	(78,193)				
2019	562,259	6.000000									\$ 93,710	93,710	93,710	93,710	93,710	93,710	93,709		
2020	(782,224)	5.000000											\$ (156,445)	(156,445)	(156,445)	(156,445)	(156,444)		
Net increase (decrease) in pension expense													\$ (151,352)	\$ (93,825)	\$ (105,913)	\$ (140,928)	\$ (62,735)	\$ -	\$ -

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, 2020 (c)	Balances at June 30, 2020	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	\$ -	\$ -	\$ -	\$ -	\$ -
2011	-	-	-	-	-
2012	-	-	-	-	-
2013	-	-	-	-	-
2014	-	-	-	-	-
2015	-	487,090	487,090	-	-
2016	-	79,277	70,045	-	9,232
2017	412,930	-	289,500	123,430	-
2018	-	549,358	282,699	-	266,659
2019	562,259	-	187,420	374,839	-
2020	-	782,224	156,445	-	625,779
				\$ 498,269	\$ 901,670

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	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Thereafter
Prior	\$ -	-																	
2011	-	-																	
2012	-	-																	
2013	-	-																	
2014	-	-																	
2015	763,505	5.607269						\$ 136,163	136,163	136,163	136,163	136,163	82,690						
2016	8,776,101	5.659196						\$ 1,550,768	1,550,768	1,550,768	1,550,768	1,550,768	1,022,261						
2017	(3,115,954)	5.705384							\$ (546,143)	(546,143)	(546,143)	(546,143)	(546,143)	(546,143)	(385,239)				
2018	(367,921)	5.829770								\$ (63,111)	(63,111)	(63,111)	(63,111)	(63,111)	(63,111)	(52,366)			
2019	(653,935)	6.000000									\$ (108,989)	(108,989)	(108,989)	(108,989)	(108,989)	(108,989)	(108,990)		
2020	1,702,382	5.000000											\$ 340,476	340,476	340,476	340,476	340,478		
Net increase (decrease) in pension expense													\$ 1,255,691	\$ 644,494	\$ (216,863)	\$ 179,121	\$ 231,488	\$ -	\$ -

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, 2020 (c)	Balances at June 30, 2020	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	\$ -	\$ -	\$ -	\$ -	\$ -
2011	-	-	-	-	-
2012	-	-	-	-	-
2013	-	-	-	-	-
2014	-	-	-	-	-
2015	763,505	-	763,505	-	-
2016	8,776,101	-	7,753,840	1,022,261	-
2017	-	3,115,954	2,184,572	-	931,382
2018	-	367,921	189,333	-	178,588
2019	-	653,935	217,978	-	435,957
2020	1,702,382	-	340,476	1,361,906	-
				\$ 2,384,167	\$ 1,545,927

City of Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



Projection of Pension Plan's Fiduciary Net Position

Fiscal Year	Gross Normal Cost (BOY)			Employee Contributions (BOY)			Employer Normal Cost (BOY)			Expenses (BOY)			Employer Contributions (MOY)			Premium Tax Allocation (MOY)		
	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total
2020	\$ 1,019,211	\$ -	\$ 1,019,211	\$ 170,678	\$ -	\$ 170,678	\$ 848,533	\$ -	\$ 848,533	\$ 9,055	\$ -	\$ 9,055	\$ 813,393	\$ -	\$ 813,393	\$ 377,658	\$ -	\$ 377,658
2021	\$ 1,006,633	\$ 49,743	\$ 1,056,376	\$ 169,166	\$ 9,186	\$ 178,352	\$ 837,467	\$ 40,557	\$ 878,024	\$ 9,304	\$ -	\$ 9,304	\$ 828,872	\$ 41,459	\$ 870,331	\$ 384,590	\$ -	\$ 384,590
2022	\$ 993,383	\$ 100,538	\$ 1,093,921	\$ 167,427	\$ 18,577	\$ 186,004	\$ 825,956	\$ 81,961	\$ 907,917	\$ 9,419	\$ 277	\$ 9,696	\$ 847,192	\$ 84,062	\$ 931,254	\$ 393,925	\$ -	\$ 393,925
2023	\$ 983,362	\$ 157,159	\$ 1,140,521	\$ 166,180	\$ 29,058	\$ 195,238	\$ 817,182	\$ 128,101	\$ 945,283	\$ 9,534	\$ 569	\$ 10,103	\$ 864,921	\$ 131,521	\$ 996,442	\$ 404,175	\$ -	\$ 404,175
2024	\$ 978,189	\$ 207,399	\$ 1,185,588	\$ 165,418	\$ 38,370	\$ 203,788	\$ 812,771	\$ 169,029	\$ 981,800	\$ 9,499	\$ 882	\$ 10,381	\$ 892,521	\$ 173,672	\$ 1,066,193	\$ 414,707	\$ -	\$ 414,707
2025	\$ 968,739	\$ 263,862	\$ 1,232,601	\$ 163,959	\$ 48,849	\$ 212,808	\$ 804,780	\$ 215,013	\$ 1,019,793	\$ 9,760	\$ 1,055	\$ 10,815	\$ 919,974	\$ 220,853	\$ 1,140,827	\$ 425,528	\$ -	\$ 425,528
2026	\$ 971,422	\$ 316,819	\$ 1,288,241	\$ 164,559	\$ 58,689	\$ 223,248	\$ 806,863	\$ 258,130	\$ 1,064,993	\$ 9,872	\$ 1,393	\$ 11,265	\$ 955,418	\$ 265,267	\$ 1,220,685	\$ 436,647	\$ -	\$ 436,647
2027	\$ 956,732	\$ 375,207	\$ 1,331,939	\$ 162,516	\$ 69,550	\$ 232,066	\$ 794,216	\$ 305,657	\$ 1,099,873	\$ 9,982	\$ 1,573	\$ 11,575	\$ 992,081	\$ 314,052	\$ 1,306,133	\$ 454,276	\$ -	\$ 454,276
2028	\$ 918,185	\$ 447,563	\$ 1,365,748	\$ 156,843	\$ 83,023	\$ 239,866	\$ 761,342	\$ 364,540	\$ 1,125,882	\$ 10,257	\$ 1,797	\$ 12,054	\$ 1,023,113	\$ 374,449	\$ 1,397,562	\$ 466,158	\$ -	\$ 466,158
2029	\$ 867,657	\$ 539,769	\$ 1,407,426	\$ 149,481	\$ 100,209	\$ 249,690	\$ 718,176	\$ 439,560	\$ 1,157,736	\$ 10,369	\$ 2,347	\$ 12,716	\$ 1,043,703	\$ 451,688	\$ 1,495,391	\$ 478,366	\$ -	\$ 478,366
2030	\$ 815,545	\$ 634,666	\$ 1,450,211	\$ 141,956	\$ 117,908	\$ 259,864	\$ 673,589	\$ 516,758	\$ 1,190,347	\$ 10,654	\$ 2,581	\$ 13,235	\$ 1,069,230	\$ 530,838	\$ 1,600,068	\$ 490,910	\$ -	\$ 490,910
2031	\$ 758,364	\$ 739,422	\$ 1,497,786	\$ 133,649	\$ 137,461	\$ 271,110	\$ 624,715	\$ 601,961	\$ 1,226,676	\$ 10,768	\$ 3,005	\$ 13,773	\$ 1,093,712	\$ 618,361	\$ 1,712,073	\$ 503,799	\$ -	\$ 503,799
2032	\$ 707,511	\$ 850,275	\$ 1,557,786	\$ 126,139	\$ 158,168	\$ 284,307	\$ 581,372	\$ 692,107	\$ 1,273,479	\$ 10,880	\$ 3,451	\$ 14,331	\$ 1,120,959	\$ 710,959	\$ 1,831,918	\$ 517,043	\$ -	\$ 517,043
2033	\$ 658,821	\$ 957,592	\$ 1,616,413	\$ 118,887	\$ 178,223	\$ 297,110	\$ 539,934	\$ 779,369	\$ 1,319,303	\$ 10,990	\$ 3,919	\$ 14,909	\$ 1,159,521	\$ 800,631	\$ 1,960,152	\$ 537,617	\$ -	\$ 537,617
2034	\$ 606,904	\$ 1,075,117	\$ 1,682,021	\$ 111,148	\$ 200,202	\$ 311,350	\$ 495,756	\$ 874,915	\$ 1,370,671	\$ 11,098	\$ 4,410	\$ 15,508	\$ 1,198,569	\$ 898,794	\$ 2,097,363	\$ 551,781	\$ -	\$ 551,781
2035	\$ 565,215	\$ 1,190,333	\$ 1,755,548	\$ 104,898	\$ 221,759	\$ 326,657	\$ 460,317	\$ 968,574	\$ 1,428,891	\$ 11,403	\$ 4,531	\$ 15,934	\$ 1,249,520	\$ 994,658	\$ 2,244,178	\$ 566,334	\$ -	\$ 566,334
2036	\$ 518,722	\$ 1,305,708	\$ 1,824,430	\$ 97,533	\$ 243,353	\$ 340,886	\$ 421,189	\$ 1,062,355	\$ 1,483,544	\$ 11,511	\$ 5,061	\$ 16,572	\$ 1,310,214	\$ 1,091,056	\$ 2,401,270	\$ 581,288	\$ -	\$ 581,288
2037	\$ 453,426	\$ 1,432,742	\$ 1,886,168	\$ 86,708	\$ 267,142	\$ 353,850	\$ 366,718	\$ 1,165,600	\$ 1,532,318	\$ 11,616	\$ 5,412	\$ 17,028	\$ 1,372,410	\$ 1,196,949	\$ 2,569,359	\$ 596,653	\$ -	\$ 596,653
2038	\$ 387,426	\$ 1,573,725	\$ 1,961,151	\$ 75,434	\$ 293,558	\$ 368,992	\$ 311,992	\$ 1,280,167	\$ 1,592,159	\$ 11,501	\$ 6,206	\$ 17,707	\$ 1,434,354	\$ 1,314,860	\$ 2,749,214	\$ 612,440	\$ -	\$ 612,440
2039	\$ 315,990	\$ 1,714,666	\$ 2,030,656	\$ 62,283	\$ 319,972	\$ 382,255	\$ 253,707	\$ 1,394,694	\$ 1,648,401	\$ 11,817	\$ 6,377	\$ 18,194	\$ 1,509,553	\$ 1,432,106	\$ 2,941,659	\$ 628,661	\$ -	\$ 628,661
2040	\$ 243,822	\$ 1,873,886	\$ 2,117,708	\$ 48,678	\$ 349,829	\$ 398,507	\$ 195,144	\$ 1,524,057	\$ 1,719,201	\$ 11,913	\$ 7,004	\$ 18,917	\$ 1,582,600	\$ 1,564,975	\$ 3,147,575	\$ 675,301	\$ -	\$ 675,301
2041	\$ 194,076	\$ 2,024,760	\$ 2,218,836	\$ 39,599	\$ 378,122	\$ 417,721	\$ 154,477	\$ 1,646,638	\$ 1,801,115	\$ 12,005	\$ 7,432	\$ 19,437	\$ 1,677,193	\$ 1,690,712	\$ 3,367,905	\$ 693,188	\$ -	\$ 693,188
2042	\$ 158,764	\$ 2,165,842	\$ 2,324,606	\$ 33,134	\$ 404,620	\$ 437,754	\$ 125,630	\$ 1,761,222	\$ 1,886,852	\$ 11,851	\$ 7,886	\$ 19,737	\$ 1,795,359	\$ 1,808,299	\$ 3,603,658	\$ 711,567	\$ -	\$ 711,567
2043	\$ 125,047	\$ 2,298,368	\$ 2,423,415	\$ 26,582	\$ 429,577	\$ 456,159	\$ 98,465	\$ 1,868,791	\$ 1,967,256	\$ 12,177	\$ 8,103	\$ 20,280	\$ 1,937,435	\$ 1,918,479	\$ 3,855,914	\$ 758,570	\$ -	\$ 758,570
2044	\$ 96,665	\$ 2,423,718	\$ 2,520,383	\$ 20,748	\$ 453,278	\$ 474,026	\$ 75,917	\$ 1,970,440	\$ 2,046,357	\$ 12,001	\$ 8,837	\$ 20,838	\$ 2,102,704	\$ 2,023,124	\$ 4,125,828	\$ 778,685	\$ -	\$ 778,685
2045	\$ 76,433	\$ 2,541,962	\$ 2,618,395	\$ 16,778	\$ 475,669	\$ 492,447	\$ 59,655	\$ 2,066,293	\$ 2,125,948	\$ 12,069	\$ 9,342	\$ 21,411	\$ 2,293,021	\$ 2,121,615	\$ 4,414,636	\$ 799,354	\$ -	\$ 799,354
2046	\$ 62,244	\$ 2,659,462	\$ 2,721,706	\$ 13,972	\$ 497,946	\$ 511,918	\$ 48,272	\$ 2,161,516	\$ 2,209,788	\$ 12,131	\$ 9,869	\$ 22,000	\$ 2,504,177	\$ 2,219,484	\$ 4,723,661	\$ 820,591	\$ -	\$ 820,591
2047	\$ 49,616	\$ 2,778,695	\$ 2,828,311	\$ 11,253	\$ 520,556	\$ 531,809	\$ 38,363	\$ 2,258,139	\$ 2,296,502	\$ 12,188	\$ 10,417	\$ 22,605	\$ 2,735,512	\$ 2,318,805	\$ 5,054,317	\$ 878,174	\$ -	\$ 878,174
2048	\$ 34,795	\$ 2,903,910	\$ 2,938,705	\$ 8,041	\$ 544,309	\$ 552,350	\$ 26,754	\$ 2,359,601	\$ 2,386,355	\$ 12,239	\$ 10,988	\$ 23,227	\$ 2,985,023	\$ 2,423,096	\$ 5,408,119	\$ 901,542	\$ -	\$ 901,542
2049	\$ 23,907	\$ 3,029,007	\$ 3,052,914	\$ 5,584	\$ 568,051	\$ 573,635	\$ 18,323	\$ 2,460,956	\$ 2,479,279	\$ 12,283	\$ 11,867	\$ 24,150	\$ 3,259,102	\$ 2,527,585	\$ 5,786,687	\$ 925,553	\$ -	\$ 925,553
2050	\$ 15,956	\$ 3,157,405	\$ 3,173,361	\$ 3,726	\$ 592,451	\$ 596,177	\$ 12,230	\$ 2,564,954	\$ 2,577,184	\$ 12,320	\$ 12,494	\$ 24,814	\$ 3,557,231	\$ 2,634,524	\$ 6,191,755	\$ 950,223	\$ -	\$ 950,223
2051	\$ 11,449	\$ 3,280,308	\$ 3,291,757	\$ 2,672	\$ 615,844	\$ 618,516	\$ 8,777	\$ 2,664,464	\$ 2,673,241	\$ 12,350	\$ 13,146	\$ 25,496	\$ 3,888,277	\$ 2,736,901	\$ 6,625,178	\$ 1,515,023	\$ -	\$ 1,515,023
2052	\$ 8,235	\$ 3,399,704	\$ 3,407,939	\$ 1,921	\$ 638,599	\$ 640,520	\$ 6,314	\$ 2,761,105	\$ 2,767,419	\$ 12,372	\$ 13,825	\$ 26,197	\$ 4,252,569	\$ 2,836,371	\$ 7,088,940	\$ 1,555,774	\$ -	\$ 1,555,774
2053	\$ 5,208	\$ 3,520,882	\$ 3,526,090	\$ 1,206	\$ 661,693	\$ 662,899	\$ 4,002	\$ 2,859,189	\$ 2,863,191	\$ 12,386	\$ 14,848	\$ 27,234	\$ 4,647,505	\$ 2,937,661	\$ 7,585,166	\$ 1,597,646	\$ -	\$ 1,597,646
2054	\$ 3,655	\$ 3,644,076	\$ 3,647,731	\$ 846	\$ 685,167	\$ 686,013	\$ 2,809	\$ 2,958,909	\$ 2,961,718	\$ 12,392	\$ 15,591	\$ 27,983	\$ 5,075,785	\$ 3,040,343	\$ 8,116,128	\$ 1,640,669	\$ -	\$ 1,640,669
2055	\$ 2,516	\$ 3,771,501	\$ 3,774,017	\$ 583	\$ 709,427	\$ 710,010	\$ 1,933	\$ 3,062,074	\$ 3,064,007	\$ 12,389	\$ 16,698	\$ 29,087	\$ 5,537,346	\$ 3,146,911	\$ 8,684,257	\$ 1,684,876	\$ -	\$ 1,684,876
2056	\$ 1,689	\$ 3,905,495	\$ 3,907,184	\$ 391	\$ 734,912	\$ 735,303	\$ 1,298	\$ 3,170,583	\$ 3,171,881	\$ 12,376	\$ 17,854	\$ 30,230	\$ 6,033,165	\$ 3,258,990	\$ 9,292,155	\$ 4,188,082	\$ -	\$ 4,188,082
2057	\$ 645	\$ 4,044,852	\$ 4,045,497	\$ 149	\$ 761,394	\$ 761,543	\$ 496	\$ 3,283,458	\$ 3,283,954	\$ 12,716	\$ 18,345	\$ 31,061	\$ 6,567,738	\$ 3,374,868	\$ 9,942,606	\$ 3,815,439	\$ -	\$ 3,815,439
2058	\$ 433	\$ 4,191,107	\$ 4,191,540	\$ 100	\$ 789,157	\$ 789,257	\$ 333	\$ 3,401,950	\$ 3,402,283	\$ 12,692	\$ 19,586	\$ 32,278	\$ 13,032	\$ 3,497,238	\$ 3,510,270	\$ -	\$ -	\$ -
2059	\$ -	\$ 4,343,604	\$ 4,343,604	\$ -	\$ 818,093	\$ 818,093	\$ -	\$ 3,525,511	\$ 3,525,511	\$ 12,657	\$ 20,509	\$ 33,166	\$ 12,657	\$ 3,624,471	\$ 3,637,128	\$ -	\$ -	\$ -
2060	\$ -	\$ 4,500,692	\$ 4,500,692	\$ -	\$ 847,889	\$ 847,889	\$ -	\$ 3,652,803	\$ 3,652,803	\$ 12,611	\$ 21,850	\$ 34,461	\$ 12,611	\$ 3,755,937	\$ 3,768,548	\$ -	\$ -	\$ -

City of Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



Projection of Pension Plan's Fiduciary Net Position

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
2020	\$ 35,794,588	\$ -	\$ 35,794,588	\$ 3,096,167	8.65%	\$ 174,476	\$ 1,191,051	\$ 1,343,787	\$ 9,055	\$ 139,610
2021	\$ 37,101,171	\$ -	\$ 37,101,171	\$ 3,248,462	8.76%	\$ 172,930	\$ 1,213,462	\$ 1,399,887	\$ 9,304	\$ 145,673
2022	\$ 38,391,617	\$ 51,616	\$ 38,443,233	\$ 3,371,336	8.78%	\$ 171,153	\$ 1,241,117	\$ 1,455,310	\$ 9,419	\$ 150,543
2023	\$ 39,669,631	\$ 157,694	\$ 39,827,325	\$ 3,469,420	8.75%	\$ 169,878	\$ 1,269,096	\$ 1,503,818	\$ 9,534	\$ 154,469
2024	\$ 40,945,096	\$ 326,215	\$ 41,271,311	\$ 3,549,511	8.67%	\$ 169,099	\$ 1,307,228	\$ 1,558,661	\$ 9,499	\$ 157,684
2025	\$ 42,216,488	\$ 552,844	\$ 42,769,332	\$ 3,615,362	8.56%	\$ 167,607	\$ 1,345,502	\$ 1,617,088	\$ 9,760	\$ 160,160
2026	\$ 43,475,490	\$ 846,133	\$ 44,321,623	\$ 3,661,783	8.42%	\$ 168,221	\$ 1,392,065	\$ 1,655,402	\$ 9,872	\$ 162,444
2027	\$ 44,754,784	\$ 1,204,967	\$ 45,959,751	\$ 3,719,239	8.31%	\$ 166,132	\$ 1,446,357	\$ 1,723,253	\$ 9,982	\$ 164,679
2028	\$ 46,006,935	\$ 1,637,436	\$ 47,644,371	\$ 3,763,173	8.18%	\$ 160,333	\$ 1,489,271	\$ 1,821,591	\$ 10,257	\$ 165,287
2029	\$ 47,174,625	\$ 2,161,158	\$ 49,335,783	\$ 3,746,216	7.94%	\$ 152,807	\$ 1,522,069	\$ 1,916,390	\$ 10,369	\$ 162,975
2030	\$ 48,245,150	\$ 2,800,563	\$ 51,045,713	\$ 3,657,307	7.58%	\$ 145,115	\$ 1,560,140	\$ 2,019,730	\$ 10,654	\$ 157,344
2031	\$ 49,203,752	\$ 3,563,379	\$ 52,767,131	\$ 3,489,522	7.09%	\$ 136,623	\$ 1,597,511	\$ 2,123,567	\$ 10,768	\$ 148,123
2032	\$ 50,039,590	\$ 4,464,980	\$ 54,504,570	\$ 3,237,444	6.47%	\$ 128,946	\$ 1,638,002	\$ 2,221,768	\$ 10,880	\$ 135,322
2033	\$ 50,759,513	\$ 5,516,886	\$ 56,276,399	\$ 2,907,066	5.73%	\$ 121,533	\$ 1,697,138	\$ 2,313,007	\$ 10,990	\$ 119,573
2034	\$ 51,367,682	\$ 6,721,093	\$ 58,088,775	\$ 2,521,313	4.91%	\$ 113,621	\$ 1,750,350	\$ 2,404,827	\$ 11,098	\$ 101,177
2035	\$ 51,855,102	\$ 8,094,013	\$ 59,949,115	\$ 2,070,536	3.99%	\$ 107,232	\$ 1,815,854	\$ 2,481,454	\$ 11,403	\$ 80,495
2036	\$ 52,242,559	\$ 9,639,815	\$ 61,882,374	\$ 1,581,260	3.03%	\$ 99,703	\$ 1,891,502	\$ 2,573,919	\$ 11,511	\$ 57,934
2037	\$ 52,504,344	\$ 11,365,536	\$ 63,869,880	\$ 1,044,969	1.99%	\$ 88,637	\$ 1,969,063	\$ 2,671,485	\$ 11,616	\$ 33,107
2038	\$ 52,609,938	\$ 13,290,582	\$ 65,900,520	\$ 452,675	0.86%	\$ 77,113	\$ 2,046,794	\$ 2,766,893	\$ 11,501	\$ 5,806
2039	\$ 52,553,782	\$ 15,437,430	\$ 67,991,212	\$ -	0.00%	\$ 63,669	\$ 2,138,214	\$ 2,893,100	\$ 11,817	\$ -
2040	\$ 52,291,433	\$ 17,814,757	\$ 70,106,190	\$ -	0.00%	\$ 49,761	\$ 2,257,901	\$ 2,988,918	\$ 11,913	\$ -
2041	\$ 51,843,913	\$ 20,450,396	\$ 72,294,309	\$ -	0.00%	\$ 40,480	\$ 2,370,381	\$ 3,043,601	\$ 12,005	\$ -
2042	\$ 51,268,370	\$ 23,349,865	\$ 74,618,235	\$ -	0.00%	\$ 33,871	\$ 2,506,926	\$ 3,074,122	\$ 11,851	\$ -
2043	\$ 50,598,826	\$ 26,506,712	\$ 77,105,538	\$ -	0.00%	\$ 27,174	\$ 2,696,005	\$ 3,111,457	\$ 12,177	\$ -
2044	\$ 49,825,753	\$ 29,910,358	\$ 79,736,111	\$ -	0.00%	\$ 21,210	\$ 2,881,389	\$ 3,128,880	\$ 12,001	\$ -
2045	\$ 48,970,422	\$ 33,532,245	\$ 82,502,667	\$ -	0.00%	\$ 17,151	\$ 3,092,375	\$ 3,128,991	\$ 12,069	\$ -
2046	\$ 48,055,345	\$ 37,348,117	\$ 85,403,462	\$ -	0.00%	\$ 14,283	\$ 3,324,768	\$ 3,117,729	\$ 12,131	\$ 4,655
2047	\$ 47,095,775	\$ 41,350,196	\$ 88,445,971	\$ 213,846	0.45%	\$ 11,503	\$ 3,613,686	\$ 3,109,674	\$ 12,188	\$ 20,823
2048	\$ 46,088,062	\$ 45,538,775	\$ 91,626,837	\$ 737,996	1.60%	\$ 8,220	\$ 3,886,565	\$ 3,109,131	\$ 12,239	\$ 50,420
2049	\$ 45,020,069	\$ 49,919,941	\$ 94,940,010	\$ 1,561,831	3.47%	\$ 5,708	\$ 4,184,655	\$ 3,092,365	\$ 12,283	\$ 94,442
2050	\$ 43,909,777	\$ 54,493,659	\$ 98,403,436	\$ 2,741,988	6.24%	\$ 3,809	\$ 4,507,454	\$ 3,065,198	\$ 12,320	\$ 155,294
2051	\$ 42,768,985	\$ 59,258,582	\$ 102,027,567	\$ 4,331,027	10.13%	\$ 2,731	\$ 5,403,300	\$ 3,031,068	\$ 12,350	\$ 247,470
2052	\$ 41,607,037	\$ 64,198,303	\$ 105,805,340	\$ 6,941,110	16.68%	\$ 1,964	\$ 5,808,343	\$ 2,993,635	\$ 12,372	\$ 374,752
2053	\$ 40,427,709	\$ 69,293,036	\$ 109,720,745	\$ 10,120,162	25.03%	\$ 1,233	\$ 6,245,151	\$ 2,955,139	\$ 12,386	\$ 528,370
2054	\$ 39,231,500	\$ 74,531,896	\$ 113,763,396	\$ 13,927,391	35.50%	\$ 865	\$ 6,716,454	\$ 2,913,330	\$ 12,392	\$ 711,105
2055	\$ 38,022,578	\$ 79,907,731	\$ 117,930,309	\$ 18,430,093	48.47%	\$ 596	\$ 7,222,222	\$ 2,870,036	\$ 12,389	\$ 925,938
2056	\$ 36,802,322	\$ 85,417,848	\$ 122,220,170	\$ 23,696,424	64.39%	\$ 400	\$ 10,221,247	\$ 2,825,590	\$ 12,376	\$ 1,230,644
2057	\$ 35,571,725	\$ 91,067,113	\$ 126,638,838	\$ 32,310,749	90.83%	\$ 152	\$ 10,383,177	\$ 2,780,840	\$ 12,716	\$ 1,622,874
2058	\$ 34,330,406	\$ 96,860,896	\$ 131,191,302	\$ 41,523,396	120.95%	\$ 102	\$ 13,032	\$ 2,733,906	\$ 12,692	\$ 1,807,727
2059	\$ 33,080,985	\$ 102,807,188	\$ 135,888,173	\$ 40,597,660	122.72%	\$ -	\$ 12,657	\$ 2,686,465	\$ 12,657	\$ 1,767,114
2060	\$ 31,823,384	\$ 108,913,932	\$ 140,737,316	\$ 39,678,309	124.68%	\$ -	\$ -	\$ 2,637,281	\$ 12,611	\$ 1,726,838

City of Martinsburg, West Virginia Firemen's Pension and Relief Fund
 Actuarial Information to Include in the Financial Statements
 for the June 30, 2020 Measurement Date



Projection of Pension Plan's Fiduciary Net Position

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	
2020	\$ 1,343,787	\$ -	\$ 1,314,535	\$ -	\$ 1,320,187	
2021	\$ 1,399,887	\$ -	\$ 1,310,444	\$ -	\$ 1,327,420	
2022	\$ 1,455,310	\$ -	\$ 1,303,661	\$ -	\$ 1,331,929	
2023	\$ 1,503,818	\$ -	\$ 1,289,105	\$ -	\$ 1,328,407	
2024	\$ 1,558,661	\$ -	\$ 1,278,581	\$ -	\$ 1,328,917	
2025	\$ 1,617,088	\$ -	\$ 1,269,387	\$ -	\$ 1,330,730	
2026	\$ 1,655,402	\$ -	\$ 1,243,505	\$ -	\$ 1,314,831	
2027	\$ 1,723,253	\$ -	\$ 1,238,731	\$ -	\$ 1,321,070	
2028	\$ 1,821,591	\$ -	\$ 1,253,033	\$ -	\$ 1,347,839	
2029	\$ 1,916,390	\$ -	\$ 1,261,476	\$ -	\$ 1,368,615	
2030	\$ 2,019,730	\$ -	\$ 1,272,249	\$ -	\$ 1,392,197	
2031	\$ 2,123,567	\$ -	\$ 1,280,055	\$ -	\$ 1,412,810	
2032	\$ 2,221,768	\$ -	\$ 1,281,578	\$ -	\$ 1,426,680	
2033	\$ 2,313,007	\$ -	\$ 1,276,753	\$ -	\$ 1,433,558	
2034	\$ 2,404,827	\$ -	\$ 1,270,275	\$ -	\$ 1,438,574	
2035	\$ -	\$ 2,481,454	\$ -	\$ 1,705,182	\$ 1,432,732	
2036	\$ -	\$ 2,573,919	\$ -	\$ 1,726,424	\$ 1,434,379	
2037	\$ -	\$ 2,671,485	\$ -	\$ 1,749,014	\$ 1,436,918	
2038	\$ -	\$ 2,766,893	\$ -	\$ 1,768,158	\$ 1,436,421	
2039	\$ -	\$ 2,893,100	\$ -	\$ 1,804,597	\$ 1,449,650	
2040	\$ -	\$ 2,988,918	\$ -	\$ 1,819,779	\$ 1,445,519	
2041	\$ -	\$ 3,043,601	\$ -	\$ 1,808,758	\$ 1,420,718	
2042	\$ -	\$ 3,074,122	\$ -	\$ 1,783,208	\$ 1,385,006	
2043	\$ -	\$ 3,111,457	\$ -	\$ 1,761,703	\$ 1,353,021	
2044	\$ -	\$ 3,128,880	\$ -	\$ 1,729,202	\$ 1,313,227	
2045	\$ -	\$ 3,128,991	\$ -	\$ 1,687,910	\$ 1,267,551	
2046	\$ -	\$ 3,117,729	\$ -	\$ 1,641,615	\$ 1,219,017	
2047	\$ -	\$ 3,109,674	\$ -	\$ 1,598,218	\$ 1,173,536	
2048	\$ -	\$ 3,109,131	\$ -	\$ 1,559,725	\$ 1,132,481	
2049	\$ -	\$ 3,092,365	\$ -	\$ 1,514,216	\$ 1,087,158	
2050	\$ -	\$ 3,065,198	\$ -	\$ 1,465,020	\$ 1,040,090	
2051	\$ 3,031,068	\$ -	\$ 757,587	\$ -	\$ 992,701	
2052	\$ 2,993,635	\$ -	\$ 716,011	\$ -	\$ 946,306	
2053	\$ 2,955,139	\$ -	\$ 676,367	\$ -	\$ 901,615	
2054	\$ 2,913,330	\$ -	\$ 638,084	\$ -	\$ 857,913	
2055	\$ 2,870,036	\$ -	\$ 601,532	\$ -	\$ 815,738	
2056	\$ 2,825,590	\$ -	\$ 566,715	\$ -	\$ 775,145	
2057	\$ 2,780,840	\$ -	\$ 533,722	\$ -	\$ 736,309	
2058	\$ 2,733,906	\$ -	\$ 502,119	\$ -	\$ 698,679	
2059	\$ 2,686,465	\$ -	\$ 472,158	\$ -	\$ 662,652	
2060	\$ 2,637,281	\$ -	\$ 443,554	\$ -	\$ 627,872	