



**Municipal Pensions
Oversight Board**

**City of St. Albans, 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. Barbara Hughes
City Treasurer
City of St. Albans
51 Sixth Avenue
St. Albans, WV 25177

Mr. Brandon Price
Pension Board Secretary
City of St. Albans, West Virginia
Firemen's Pension and Relief Fund

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

Dear Barbara

The following report contains the GASB 67 and GASB 68 actuarial information for the City of St. Albans 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 3.44%. The plan's expected gross rate of investment return of 4.0% has been blended with the 3.13% yield corresponding to the 20-year maturity on a municipal general obligation AA bond yield curve published on Fidelity's Fixed Income Market Data webpage as of June 30, 2019. The development of the blended discount rate is included within this report.

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

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

Methodology, Reliance and Certification (cont.)

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

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

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

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

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

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

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



Methodology, Reliance and Certification (cont.)

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

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

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

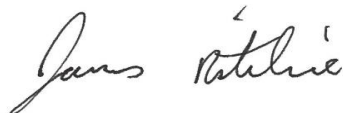
The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption,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

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

The report is conditioned on the assumption of an ongoing plan and is not meant to present the actuarial position of the Plan in the case of Plan termination. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status), and changes in plan provisions or applicable law.

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

Sincerely,



James Ritchie, ASA, EA, FCA, MAAA



Jordan McClane, FSA, EA, MAAA



City of St. Albans, 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	\$ 23,693,745
Plan fiduciary net position	(2,909,056)
Employer's net pension liability	<u>\$ 20,784,689</u>
Plan fiduciary net position as a percentage of the total pension liability	12.28%

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)	3.6901%
Single discount rate (EOY)	3.4400%
Investment rate of return	4.00 percent, net of pension plan investment expense, including inflation
Long-term municipal bond rate (BOY)	3.62%
Long-term municipal bond rate (EOY)	3.13%
Mortality	RP-2014 Blue Collar Mortality Table with generational projection using Scale MP-2014
Year Fund is projected to be fully funded	2067
Year assets are expected to be depleted for a closed plan	2028

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 2.44%	Current Discount Rate 3.44%	1% Increase 4.44%
Employer's net pension liability	\$ 25,164,194	\$ 20,784,689	\$ 17,387,230

City of St. Albans, West Virginia Firemen's Pension and Relief Fund
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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	\$ 21,637,355	\$ 2,647,869	\$ 18,989,486
Changes for the year:			
Service cost	669,988		669,988
Interest	786,510		786,510
Changes of benefit terms	-		-
Differences between expected and actual experience	306,909		306,909
Changes of assumptions	939,593		939,593
Contributions - employer (including Premium Tax Allocation)		668,884	(668,884)
Contributions - member		106,691	(106,691)
Net investment income		131,865	(131,865)
Benefit payments, including refunds of member contributions	(646,610)	(646,610)	-
Administrative expense		956	(956)
Other		(599)	599
Net Changes	<u>2,056,390</u>	<u>261,187</u>	<u>1,795,203</u>
Balances at 6/30/19	<u>\$ 23,693,745</u>	<u>\$ 2,909,056</u>	<u>\$ 20,784,689</u>
Return on Investments		4.9%	

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

Note	Description	Amount
A	Service Cost	\$ 669,988
B	Interest on the total pension liability	786,510
A	Changes of benefit terms	-
C	Differences between expected and actual experience	53,622
C	Changes of assumptions	823,935
A	Employee contributions	(106,691)
D	Projected earnings on pension plan investments	(108,502)
C	Differences between expected and actual earnings on plan investments	26,845
A	Pension plan administrative expense	(956)
A	Other changes in fiduciary net position	599
Total Pension Expense		\$ 2,145,350

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	\$ 21,637,355	100%	3.69%	\$ 798,440
Service Cost (End of Year)	669,988	0%	3.69%	-
Benefit payments, including refunds of employee contributions	(646,610)	50%	3.69%	(11,930)
Total interest on the total pension liability				\$ 786,510

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	\$ 2,647,869	100%	4.00%	\$ 105,915
Employer contributions	668,884	50%	4.00%	13,378
Employee contributions	106,691	50%	4.00%	2,134
Benefit payments, including refunds of employee contributions	(646,610)	50%	4.00%	(12,932)
Administrative expense and other	357	50%	4.00%	7
Total Projected Earnings				\$ 108,502

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

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

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 264,504	\$ 55,430
Changes of assumptions	1,550,932	931,870
Net difference between projected and actual earnings on pension plan investments	-	18,569
Total	\$ 1,815,436	\$ 1,005,869

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	\$ 681,085
2021	(136,610)
2022	269,763
2023	(4,671)
2024	-
Thereafter	-

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

Total pension liability	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Service cost	\$ 669,988	\$ 611,643	\$ 711,190	\$ 395,160	\$ 367,972	\$ 433,486	\$ -	\$ -	\$ -	\$ -
Interest	786,510	765,755	686,769	714,082	704,105	717,437	-	-	-	-
Changes of benefit terms	-	-	-	-	-	-	-	-	-	-
Differences between expected and actual experience	306,909	(97,774)	47,249	95,553	(258,366)	-	-	-	-	-
Changes of assumptions	939,593	(201,141)	(2,169,156)	4,897,997	574,779	725,672	-	-	-	-
Benefit payments, including refunds of member contributions	(646,610)	(636,775)	(617,725)	(646,025)	(578,970)	(538,173)	-	-	-	-
Net change in total pension liability	2,056,390	441,708	(1,341,673)	5,456,767	809,520	1,338,422	-	-	-	-
Total pension liability - beginning	21,637,355	21,195,647	22,537,320	17,080,553	16,271,033	14,932,611	-	-	-	-
Total pension liability - ending (a)	\$ 23,693,745	\$ 21,637,355	\$ 21,195,647	\$ 22,537,320	\$ 17,080,553	\$ 16,271,033	\$ -	\$ -	\$ -	\$ -
Plan fiduciary net position	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Contributions - employer (including Premium Tax Allocation)	\$ 668,884	\$ 526,787	\$ 449,321	\$ 434,429	\$ 423,731	\$ 460,171	\$ -	\$ -	\$ -	\$ -
Contributions - member	106,691	101,008	94,205	99,072	90,837	92,793	-	-	-	-
Net investment income	131,865	79,339	207,323	(53,069)	55,783	239,199	-	-	-	-
Benefit payments, including refunds of member contributions	(646,610)	(636,775)	(617,725)	(646,025)	(578,970)	(538,173)	-	-	-	-
Administrative expense	956	(750)	(750)	(6,201)	(1,579)	(2,633)	-	-	-	-
Other	(599)	1,730	-	-	-	-	-	-	-	-
Net change in plan fiduciary net position	\$ 261,187	\$ 71,339	\$ 132,374	\$ (171,794)	\$ (10,198)	\$ 251,357	\$ -	\$ -	\$ -	\$ -
Plan fiduciary net position - beginning	2,647,869	2,576,530	2,444,156	2,615,950	2,626,148	2,374,791	-	-	-	-
Plan fiduciary net position - ending (b)	\$ 2,909,056	\$ 2,647,869	\$ 2,576,530	\$ 2,444,156	\$ 2,615,950	\$ 2,626,148	\$ -	\$ -	\$ -	\$ -
Employer's net pension liability - ending (a)-(b)	\$ 20,784,689	\$ 18,989,486	\$ 18,619,117	\$ 20,093,164	\$ 14,464,603	\$ 13,644,885	\$ -	\$ -	\$ -	\$ -
Plan fiduciary net position as a percentage of the total pension liability	12.28%	12.24%	12.16%	10.84%	15.32%	16.14%	0.00%	0.00%	0.00%	0.00%
Covered payroll	\$ 954,643	\$ 914,121	\$ 912,222	\$ 818,360	\$ 827,407	\$ 1,044,493	\$ -	\$ -	\$ -	\$ -
Employer's net pension liability as a percentage of covered payroll	2177.22%	2077.35%	2041.07%	2455.30%	1748.18%	1306.36%	0.00%	0.00%	0.00%	0.00%
Expected average remaining service years of all participants	4.00	4.62	4.82	4.84	4.56	-	-	-	-	-

Notes to Schedule:

Benefit changes: There were no changes for FY2019.

Changes of assumptions: The discount rate changed from 3.6901% to 3.4400%.

City of St. Albans, West Virginia Firemen's Pension and Relief Fund
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Schedule of Employer Contributions
 Last 10 Fiscal Years

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially determined contribution	\$ 1,413,151	\$ 1,243,159	\$ 1,179,277	\$ 1,076,165	\$ 767,287	\$ 812,669	\$ 743,600	\$ -	\$ -	\$ -
Contributions in relation to the actuarially determined contribution										
Employer provided	441,061	307,391	241,363	224,816	217,308	238,863	238,516	-	-	-
State provided	227,823	219,396	207,958	209,613	206,423	221,308	191,580	-	-	-
Contribution deficiency (excess)	<u>\$ 744,267</u>	<u>\$ 716,372</u>	<u>\$ 729,956</u>	<u>\$ 641,736</u>	<u>\$ 343,556</u>	<u>\$ 352,498</u>	<u>\$ 313,504</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered payroll	\$ 954,643	\$ 914,121	\$ 912,222	\$ 818,360	\$ 827,407	\$ 1,044,493	\$ 913,506	\$ -	\$ -	\$ -
Contributions as a percentage of covered employee payroll	70.07%	58.00%	49.00%	53.00%	51.00%	44.00%	47.00%	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	4.00 percent, net of pension plan investment expense, including inflation
Retirement age	Rates vary by age
Mortality	RP-2014 Blue Collar Mortality Table with generational projection using Scale MP-2014

City of St. Albans, 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	\$ 73,875	5	\$ 14,775	14,775	14,775	14,775	14,775				
2016	180,898	5		\$ 36,180	36,180	36,180	36,180	36,178			
2017	(111,274)	5			\$ (22,255)	(22,255)	(22,255)	(22,255)	(22,254)		
2018	14,088	5				\$ 2,818	2,818	2,818	2,818	2,816	
2019	(23,363)	5					\$ (4,673)	(4,673)	(4,673)	(4,673)	(4,671)
Net increase (decrease) in pension expense							\$ 26,845	\$ 12,068	\$ (24,109)	\$ (1,857)	\$ (4,671)

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	\$ 73,875	\$ -	\$ 73,875	\$ -	\$ -
2016	180,898	-	144,720	36,178	-
2017	-	111,274	66,765	-	44,509
2018	14,088	-	5,636	8,452	-
2019	-	23,363	4,673	-	18,690
				\$ 44,630	\$ 63,199

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

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

Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Expected and Actual Experience																
Year	Differences between Expected and Actual Experience	Recognition Period (Years)	Prior	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Thereafter	
Prior	\$ -		\$ -													
2014	-	1		\$ -												
2015	(258,366)	4.555504			\$ (56,715)	(56,715)	(56,715)	(56,715)	(31,506)							
2016	95,553	4.835426				\$ 19,761	19,761	19,761	19,761	16,509						
2017	47,249	4.815653					\$ 9,812	9,812	9,812	9,812	8,001					
2018	(97,774)	4.618084						\$ (21,172)	(21,172)	(21,172)	(21,172)	(13,086)				
2019	306,909	4							\$ 76,727	76,727	76,727	76,728				
Net increase (decrease) in pension expense									\$ 53,622	\$ 81,876	\$ 63,556	\$ 63,642	\$ -	\$ -	\$ -	

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

Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in Pension Expense Through June 30, 2019 (c)	Balances at June 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	\$ -	\$ -	\$ -	\$ -	\$ -
2014	-	-	-	-	-
2015	-	258,366	258,366	-	-
2016	95,553	-	79,044	16,509	-
2017	47,249	-	29,436	17,813	-
2018	-	97,774	42,344	-	55,430
2019	306,909	-	76,727	230,182	-
				\$ 264,504	\$ 55,430

City of St. Albans, West Virginia Firemen's Pension and Relief Fund
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Schedule of Changes of Assumptions

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

Increase (Decrease) in Pension Expense Arising from the Effects of Changes of Assumptions															
Year	Changes of Assumptions	Recognition Period (Years)	Prior	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Thereafter
Prior	\$ -		\$ -												
2014	725,672	1		\$ 725,672											
2015	574,779	4.555504			\$ 126,172	126,172	126,172	126,172	70,091						
2016	4,897,997	4.835426				\$ 1,012,940	1,012,940	1,012,940	1,012,940	846,237					
2017	(2,169,156)	4.815653					\$ (450,439)	(450,439)	(450,439)	(450,439)	(367,400)				
2018	(201,141)	4.618084						\$ (43,555)	(43,555)	(43,555)	(43,555)	(26,921)			
2019	939,593	4							\$ 234,898	234,898	234,898	234,899			
Net increase (decrease) in pension expense									\$ 823,935	\$ 587,141	\$ (176,057)	\$ 207,978	\$ -	\$ -	\$ -

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

Year	Increases in the Total Pension Liability (a)	Decreases in the Total Pension Liability (b)	Amounts Recognized in Pension Expense Through June 30, 2019 (c)	Balances at June 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
Prior	\$ -	\$ -	\$ -	\$ -	\$ -
2014	725,672	-	725,672	-	-
2015	574,779	-	574,779	-	-
2016	4,897,997	-	4,051,760	846,237	-
2017	-	2,169,156	1,351,317	-	817,839
2018	-	201,141	87,110	-	114,031
2019	939,593	-	234,898	704,695	-
				\$ 1,550,932	\$ 931,870

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

Fiscal Year	Gross Normal Cost (BOY)			Employee Contributions (BOY)			Employer Normal Cost (BOY)			Expenses (MOY)			Employer Contributions (MOY)			Premium Tax Allocation (MOY)		
	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total	Current Members	Future Members	Total
2019	\$ 552,949	\$ -	\$ 552,949	\$ 88,977	\$ -	\$ 88,977	\$ 463,972	\$ -	\$ 463,972	\$ 4,134	\$ -	\$ 4,134	\$ 285,758	\$ -	\$ 285,758	\$ 227,823	\$ -	\$ 227,823
2020	\$ 540,111	\$ 41,749	\$ 581,860	\$ 87,073	\$ 6,837	\$ 93,910	\$ 453,038	\$ 34,912	\$ 487,950	\$ 4,364	\$ -	\$ 4,364	\$ 259,085	\$ 35,603	\$ 294,688	\$ 247,721	\$ -	\$ 247,721
2021	\$ 535,102	\$ 80,383	\$ 615,485	\$ 86,423	\$ 13,171	\$ 99,594	\$ 448,679	\$ 67,212	\$ 515,891	\$ 4,484	\$ 93	\$ 4,577	\$ 246,680	\$ 68,636	\$ 315,316	\$ 253,607	\$ -	\$ 253,607
2022	\$ 525,515	\$ 115,841	\$ 641,356	\$ 85,257	\$ 18,991	\$ 104,248	\$ 440,258	\$ 96,850	\$ 537,108	\$ 4,507	\$ 196	\$ 4,703	\$ 238,424	\$ 98,964	\$ 337,388	\$ 260,472	\$ -	\$ 260,472
2023	\$ 531,306	\$ 153,692	\$ 684,998	\$ 86,185	\$ 25,212	\$ 111,397	\$ 445,121	\$ 128,480	\$ 573,601	\$ 4,528	\$ 304	\$ 4,832	\$ 229,677	\$ 131,328	\$ 361,005	\$ 267,526	\$ -	\$ 267,526
2024	\$ 531,191	\$ 185,015	\$ 716,206	\$ 86,229	\$ 30,365	\$ 116,594	\$ 444,962	\$ 154,650	\$ 599,612	\$ 4,547	\$ 418	\$ 4,965	\$ 228,144	\$ 158,131	\$ 386,275	\$ 274,774	\$ -	\$ 274,774
2025	\$ 521,067	\$ 225,792	\$ 746,859	\$ 84,692	\$ 37,082	\$ 121,774	\$ 436,375	\$ 188,710	\$ 625,085	\$ 4,672	\$ 534	\$ 5,206	\$ 220,333	\$ 192,981	\$ 413,314	\$ 285,194	\$ -	\$ 285,194
2026	\$ 511,711	\$ 272,893	\$ 784,604	\$ 83,272	\$ 44,849	\$ 128,121	\$ 428,439	\$ 228,044	\$ 656,483	\$ 4,800	\$ 549	\$ 5,349	\$ 209,137	\$ 233,109	\$ 442,246	\$ 292,918	\$ -	\$ 292,918
2027	\$ 514,340	\$ 315,830	\$ 830,170	\$ 83,713	\$ 51,935	\$ 135,648	\$ 430,627	\$ 263,895	\$ 694,522	\$ 4,817	\$ 679	\$ 5,496	\$ 203,403	\$ 269,800	\$ 473,203	\$ 300,855	\$ -	\$ 300,855
2028	\$ 512,334	\$ 356,114	\$ 868,448	\$ 83,301	\$ 58,586	\$ 141,887	\$ 429,033	\$ 297,528	\$ 726,561	\$ 4,832	\$ 815	\$ 5,647	\$ 202,092	\$ 304,235	\$ 506,327	\$ 309,010	\$ -	\$ 309,010
2029	\$ 479,094	\$ 406,044	\$ 885,138	\$ 77,892	\$ 66,837	\$ 144,729	\$ 401,202	\$ 339,207	\$ 740,409	\$ 4,965	\$ 837	\$ 5,802	\$ 195,008	\$ 346,762	\$ 541,770	\$ 318,520	\$ -	\$ 318,520
2030	\$ 439,283	\$ 491,001	\$ 930,284	\$ 71,529	\$ 80,894	\$ 152,423	\$ 367,754	\$ 410,107	\$ 777,861	\$ 4,977	\$ 1,104	\$ 6,081	\$ 160,361	\$ 419,333	\$ 579,694	\$ 327,158	\$ -	\$ 327,158
2031	\$ 412,953	\$ 560,150	\$ 973,103	\$ 67,498	\$ 92,339	\$ 159,837	\$ 345,455	\$ 467,811	\$ 813,266	\$ 4,986	\$ 1,385	\$ 6,371	\$ 141,813	\$ 478,460	\$ 620,273	\$ 336,033	\$ -	\$ 336,033
2032	\$ 374,983	\$ 634,007	\$ 1,008,990	\$ 61,426	\$ 104,570	\$ 165,996	\$ 313,557	\$ 529,437	\$ 842,994	\$ 5,123	\$ 1,423	\$ 6,546	\$ 122,347	\$ 541,345	\$ 663,692	\$ 345,153	\$ -	\$ 345,153
2033	\$ 324,020	\$ 718,383	\$ 1,042,403	\$ 53,128	\$ 118,552	\$ 171,680	\$ 270,892	\$ 599,831	\$ 870,723	\$ 5,129	\$ 1,726	\$ 6,855	\$ 96,134	\$ 613,436	\$ 710,150	\$ 354,524	\$ -	\$ 354,524
2034	\$ 277,078	\$ 813,409	\$ 1,090,487	\$ 45,669	\$ 134,309	\$ 179,978	\$ 231,409	\$ 679,100	\$ 910,509	\$ 5,270	\$ 1,774	\$ 7,044	\$ 65,538	\$ 694,323	\$ 759,861	\$ 375,650	\$ -	\$ 375,650
2035	\$ 236,525	\$ 898,974	\$ 1,135,499	\$ 39,261	\$ 148,500	\$ 187,761	\$ 197,264	\$ 750,474	\$ 947,738	\$ 5,272	\$ 2,102	\$ 7,374	\$ 45,613	\$ 767,438	\$ 813,051	\$ 385,834	\$ -	\$ 385,834
2036	\$ 201,185	\$ 990,995	\$ 1,192,180	\$ 33,652	\$ 163,768	\$ 197,420	\$ 167,533	\$ 827,227	\$ 994,760	\$ 5,271	\$ 2,306	\$ 7,577	\$ 24,050	\$ 845,915	\$ 869,965	\$ 396,298	\$ -	\$ 396,298
2037	\$ 180,300	\$ 1,074,026	\$ 1,254,326	\$ 30,366	\$ 177,544	\$ 207,910	\$ 149,934	\$ 896,482	\$ 1,046,416	\$ 5,416	\$ 2,369	\$ 7,785	\$ 14,258	\$ 916,605	\$ 930,863	\$ 407,050	\$ -	\$ 407,050
2038	\$ 163,860	\$ 1,154,022	\$ 1,317,882	\$ 27,793	\$ 190,818	\$ 218,611	\$ 136,067	\$ 963,204	\$ 1,099,271	\$ 5,410	\$ 2,589	\$ 7,999	\$ 11,155	\$ 984,868	\$ 996,023	\$ 418,097	\$ -	\$ 418,097
2039	\$ 148,545	\$ 1,233,656	\$ 1,382,201	\$ 25,428	\$ 204,033	\$ 229,461	\$ 123,117	\$ 1,029,623	\$ 1,152,740	\$ 5,400	\$ 2,667	\$ 8,067	\$ 13,064	\$ 1,052,681	\$ 1,065,745	\$ 434,416	\$ -	\$ 434,416
2040	\$ 145,823	\$ 1,314,977	\$ 1,460,800	\$ 25,022	\$ 217,531	\$ 242,553	\$ 120,801	\$ 1,097,446	\$ 1,218,247	\$ 5,549	\$ 2,740	\$ 8,289	\$ 18,427	\$ 1,121,920	\$ 1,140,347	\$ 446,209	\$ -	\$ 446,209
2041	\$ 133,975	\$ 1,389,870	\$ 1,523,845	\$ 23,101	\$ 229,982	\$ 253,083	\$ 110,874	\$ 1,159,888	\$ 1,270,762	\$ 5,534	\$ 2,983	\$ 8,517	\$ 34,330	\$ 1,185,841	\$ 1,220,171	\$ 458,326	\$ -	\$ 458,326
2042	\$ 106,175	\$ 1,468,201	\$ 1,574,376	\$ 18,416	\$ 243,055	\$ 261,471	\$ 87,759	\$ 1,225,146	\$ 1,312,905	\$ 5,514	\$ 3,237	\$ 8,751	\$ 52,937	\$ 1,252,646	\$ 1,305,583	\$ 470,776	\$ -	\$ 470,776
2043	\$ 78,118	\$ 1,554,253	\$ 1,632,371	\$ 13,737	\$ 257,457	\$ 271,194	\$ 64,381	\$ 1,296,796	\$ 1,361,177	\$ 5,666	\$ 3,326	\$ 8,992	\$ 71,170	\$ 1,325,804	\$ 1,396,974	\$ 495,145	\$ -	\$ 495,145
2044	\$ 64,718	\$ 1,632,623	\$ 1,697,341	\$ 11,506	\$ 270,598	\$ 282,104	\$ 53,212	\$ 1,362,025	\$ 1,415,237	\$ 5,640	\$ 3,599	\$ 9,239	\$ 102,165	\$ 1,392,597	\$ 1,494,762	\$ 508,595	\$ -	\$ 508,595
2045	\$ 48,137	\$ 1,709,655	\$ 1,757,792	\$ 8,615	\$ 283,521	\$ 292,136	\$ 39,522	\$ 1,426,134	\$ 1,465,656	\$ 5,795	\$ 3,698	\$ 9,493	\$ 141,320	\$ 1,458,075	\$ 1,599,395	\$ 522,414	\$ -	\$ 522,414
2046	\$ 32,787	\$ 1,794,615	\$ 1,827,402	\$ 5,834	\$ 297,772	\$ 303,606	\$ 26,953	\$ 1,496,843	\$ 1,523,796	\$ 5,570	\$ 4,184	\$ 9,754	\$ 180,683	\$ 1,530,670	\$ 1,711,353	\$ 536,614	\$ -	\$ 536,614
2047	\$ 23,798	\$ 1,875,338	\$ 1,899,136	\$ 4,233	\$ 311,325	\$ 315,558	\$ 19,565	\$ 1,564,013	\$ 1,583,578	\$ 5,723	\$ 4,299	\$ 10,022	\$ 231,862	\$ 1,599,286	\$ 1,831,148	\$ 589,294	\$ -	\$ 589,294
2048	\$ 16,982	\$ 1,953,958	\$ 1,970,940	\$ 3,023	\$ 324,535	\$ 327,558	\$ 13,959	\$ 1,629,423	\$ 1,643,382	\$ 5,678	\$ 4,620	\$ 10,298	\$ 290,016	\$ 1,666,312	\$ 1,959,328	\$ 605,307	\$ -	\$ 605,307
2049	\$ 11,855	\$ 2,034,247	\$ 2,046,102	\$ 2,115	\$ 338,020	\$ 340,135	\$ 9,740	\$ 1,696,227	\$ 1,705,967	\$ 5,626	\$ 4,955	\$ 10,581	\$ 361,707	\$ 1,734,774	\$ 2,096,481	\$ 621,761	\$ -	\$ 621,761
2050	\$ 8,299	\$ 2,117,686	\$ 2,125,985	\$ 1,484	\$ 352,027	\$ 353,511	\$ 6,815	\$ 1,765,659	\$ 1,772,474	\$ 5,567	\$ 5,305	\$ 10,872	\$ 437,304	\$ 1,805,931	\$ 2,243,235	\$ 638,668	\$ -	\$ 638,668
2051	\$ 4,918	\$ 2,199,610	\$ 2,204,528	\$ 885	\$ 365,796	\$ 366,681	\$ 4,033	\$ 1,833,814	\$ 1,837,847	\$ 5,720	\$ 5,451	\$ 11,171	\$ 524,679	\$ 1,875,582	\$ 2,400,261	\$ 947,412	\$ -	\$ 947,412
2052	\$ 1,761	\$ 2,277,523	\$ 2,279,284	\$ 338	\$ 378,913	\$ 379,251	\$ 1,423	\$ 1,898,610	\$ 1,900,033	\$ 5,651	\$ 5,827	\$ 11,478	\$ 626,242	\$ 1,942,037	\$ 2,568,279	\$ 973,364	\$ -	\$ 973,364
2053	\$ 1,182	\$ 2,355,385	\$ 2,356,567	\$ 227	\$ 392,016	\$ 392,243	\$ 955	\$ 1,963,369	\$ 1,964,324	\$ 5,574	\$ 6,220	\$ 11,794	\$ 739,588	\$ 2,008,471	\$ 2,748,059	\$ 1,000,030	\$ -	\$ 1,000,030
2054	\$ 793	\$ 2,437,880	\$ 2,438,673	\$ 152	\$ 405,883	\$ 406,035	\$ 641	\$ 2,031,997	\$ 2,032,638	\$ 5,489	\$ 6,629	\$ 12,118	\$ 861,556	\$ 2,078,867	\$ 2,940,423	\$ 1,027,429	\$ -	\$ 1,027,429
2055	\$ -	\$ 2,520,847	\$ 2,520,847	\$ -	\$ 419,831	\$ 419,831	\$ -	\$ 2,101,016	\$ 2,101,016	\$ 5,640	\$ 8,111	\$ 12,451	\$ 996,818	\$ 2,149,435	\$ 3,146,253	\$ 1,055,581	\$ -	\$ 1,055,581
2056	\$ -	\$ 2,605,010	\$ 2,605,010	\$ -	\$ 433,972	\$ 433,972	\$ -	\$ 2,171,038	\$ 2,171,038	\$ 5,543	\$ 7,250	\$ 12,793	\$ 1,145,208	\$ 2,221,283	\$ 3,366,491	\$ 2,572,037	\$ -	\$ 2,572,037
2057	\$ -	\$ 2,692,861	\$ 2,692,861	\$ -	\$ 448,713	\$ 448,713	\$ -	\$ 2,244,148	\$ 2,244,148	\$ 5,437	\$ 7,708	\$ 13,145	\$ 1,305,846	\$ 2,296,299	\$ 3,602,145	\$ 2,643,950	\$ -	\$ 2,643,950
2058	\$ -	\$ 2,787,105	\$ 2,787,105	\$ -	\$ 464,503	\$ 464,503	\$ -	\$ 2,322,602	\$ 2,322,602	\$ 5,320	\$ 8,186	\$ 13,506	\$ 1,477,510	\$ 2,376,785	\$ 3,854,295	\$ 2,717,841	\$ -	\$ 2,717,841
2059	\$ -	\$ 2,888,476	\$ 2,888,476	\$ -	\$ 481,462	\$ 481,462	\$ -	\$ 2,407,014	\$ 2,407,014	\$ 5,466	\$ 8,673	\$ 14,139	\$ 1,660,741	\$ 2,463,355	\$ 4,124,096	\$ 2,793,763	\$ -	\$ 2,793,763

City of St. Albans, 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	\$ 20,936,048	\$ -	\$ 20,936,048	\$ 2,909,056	13.89%	\$ 90,739	\$ 513,581	\$ 1,084,037	\$ 4,134	\$ 106,780
2020	\$ 21,242,186	\$ -	\$ 21,242,186	\$ 2,531,985	11.92%	\$ 88,797	\$ 506,806	\$ 774,079	\$ 4,364	\$ 97,658
2021	\$ 21,864,180	\$ 43,222	\$ 21,907,402	\$ 2,446,803	11.19%	\$ 88,135	\$ 500,287	\$ 801,350	\$ 4,484	\$ 93,566
2022	\$ 22,478,033	\$ 127,861	\$ 22,605,894	\$ 2,322,957	10.33%	\$ 86,945	\$ 498,896	\$ 830,364	\$ 4,507	\$ 87,986
2023	\$ 23,076,881	\$ 252,018	\$ 23,328,899	\$ 2,161,913	9.37%	\$ 87,892	\$ 497,203	\$ 845,307	\$ 4,528	\$ 81,234
2024	\$ 23,690,467	\$ 419,477	\$ 24,109,944	\$ 1,978,406	8.35%	\$ 87,937	\$ 502,918	\$ 871,000	\$ 4,547	\$ 73,498
2025	\$ 24,302,275	\$ 624,864	\$ 24,927,139	\$ 1,767,212	7.27%	\$ 86,369	\$ 505,527	\$ 907,880	\$ 4,672	\$ 64,338
2026	\$ 24,890,416	\$ 879,247	\$ 25,769,663	\$ 1,510,894	6.07%	\$ 84,921	\$ 502,055	\$ 938,537	\$ 4,800	\$ 53,378
2027	\$ 25,461,088	\$ 1,190,817	\$ 26,651,905	\$ 1,207,911	4.74%	\$ 85,371	\$ 504,258	\$ 955,347	\$ 4,817	\$ 40,978
2028	\$ 26,040,179	\$ 1,557,370	\$ 27,597,549	\$ 878,354	3.37%	\$ 84,951	\$ 511,102	\$ 983,964	\$ 4,832	\$ 27,356
2029	\$ 26,611,163	\$ 1,978,397	\$ 28,589,560	\$ 512,967	1.93%	\$ 79,435	\$ 513,528	\$ 1,047,647	\$ 4,965	\$ 11,416
2030	\$ 27,105,473	\$ 2,466,053	\$ 29,571,526	\$ 64,734	0.24%	\$ 72,946	\$ 487,519	\$ 1,108,893	\$ 4,977	\$ -
2031	\$ 27,515,693	\$ 3,058,996	\$ 30,574,689	\$ -	0.00%	\$ 68,835	\$ 477,846	\$ 1,150,216	\$ 4,986	\$ -
2032	\$ 27,872,797	\$ 3,744,317	\$ 31,617,114	\$ -	0.00%	\$ 62,642	\$ 467,500	\$ 1,216,836	\$ 5,123	\$ -
2033	\$ 28,136,757	\$ 4,530,001	\$ 32,666,758	\$ -	0.00%	\$ 54,180	\$ 451,238	\$ 1,288,623	\$ 5,129	\$ -
2034	\$ 28,285,065	\$ 5,430,449	\$ 33,715,514	\$ -	0.00%	\$ 46,573	\$ 441,188	\$ 1,349,053	\$ 5,270	\$ -
2035	\$ 28,328,859	\$ 6,460,630	\$ 34,789,489	\$ -	0.00%	\$ 40,039	\$ 431,447	\$ 1,402,415	\$ 5,272	\$ -
2036	\$ 28,277,811	\$ 7,615,168	\$ 35,892,979	\$ -	0.00%	\$ 34,318	\$ 420,348	\$ 1,443,189	\$ 5,271	\$ -
2037	\$ 28,146,386	\$ 8,904,959	\$ 37,051,345	\$ -	0.00%	\$ 30,967	\$ 421,308	\$ 1,469,213	\$ 5,416	\$ -
2038	\$ 27,961,444	\$ 10,325,346	\$ 38,286,790	\$ -	0.00%	\$ 28,343	\$ 429,252	\$ 1,488,896	\$ 5,410	\$ -
2039	\$ 27,731,934	\$ 11,877,954	\$ 39,609,888	\$ -	0.00%	\$ 25,932	\$ 447,480	\$ 1,502,580	\$ 5,400	\$ -
2040	\$ 27,463,361	\$ 13,567,264	\$ 41,030,625	\$ -	0.00%	\$ 25,518	\$ 464,636	\$ 1,503,561	\$ 5,549	\$ -
2041	\$ 27,180,214	\$ 15,402,766	\$ 42,582,980	\$ -	0.00%	\$ 23,558	\$ 492,656	\$ 1,518,307	\$ 5,534	\$ -
2042	\$ 26,858,381	\$ 17,377,653	\$ 44,236,034	\$ -	0.00%	\$ 18,781	\$ 523,713	\$ 1,550,326	\$ 5,514	\$ -
2043	\$ 26,462,110	\$ 19,485,369	\$ 45,947,479	\$ -	0.00%	\$ 14,009	\$ 566,315	\$ 1,574,862	\$ 5,666	\$ -
2044	\$ 25,995,787	\$ 21,719,049	\$ 47,714,836	\$ -	0.00%	\$ 11,734	\$ 610,760	\$ 1,581,495	\$ 5,640	\$ -
2045	\$ 25,490,110	\$ 24,062,894	\$ 49,553,004	\$ -	0.00%	\$ 8,786	\$ 663,734	\$ 1,597,517	\$ 5,795	\$ -
2046	\$ 24,930,623	\$ 26,514,742	\$ 51,445,365	\$ -	0.00%	\$ 5,950	\$ 717,297	\$ 1,604,672	\$ 5,570	\$ -
2047	\$ 24,325,496	\$ 29,082,469	\$ 53,407,965	\$ -	0.00%	\$ 4,317	\$ 821,156	\$ 1,601,469	\$ 5,723	\$ -
2048	\$ 23,690,081	\$ 31,759,922	\$ 55,450,003	\$ -	0.00%	\$ 3,083	\$ 898,323	\$ 1,593,578	\$ 5,678	\$ -
2049	\$ 23,030,208	\$ 34,540,852	\$ 57,571,060	\$ -	0.00%	\$ 2,157	\$ 983,468	\$ 1,581,561	\$ 5,626	\$ -
2050	\$ 22,350,863	\$ 37,425,709	\$ 59,776,572	\$ -	0.00%	\$ 1,513	\$ 1,075,972	\$ 1,565,829	\$ 5,567	\$ -
2051	\$ 21,656,690	\$ 40,422,037	\$ 62,078,727	\$ -	0.00%	\$ 903	\$ 1,472,091	\$ 1,548,105	\$ 5,720	\$ -
2052	\$ 20,949,309	\$ 43,523,739	\$ 64,473,048	\$ -	0.00%	\$ 345	\$ 1,599,606	\$ 1,528,328	\$ 5,651	\$ 1,307
2053	\$ 20,230,518	\$ 46,715,223	\$ 66,945,741	\$ 67,279	0.33%	\$ 231	\$ 1,739,618	\$ 1,503,780	\$ 5,574	\$ 7,256
2054	\$ 19,507,407	\$ 49,985,590	\$ 69,492,997	\$ 305,030	1.56%	\$ 155	\$ 1,888,985	\$ 1,477,546	\$ 5,489	\$ 20,244
2055	\$ 18,781,721	\$ 53,336,790	\$ 72,118,511	\$ 731,378	3.89%	\$ -	\$ 2,052,399	\$ 1,450,530	\$ 5,640	\$ 41,063
2056	\$ 18,053,734	\$ 56,763,492	\$ 74,817,226	\$ 1,368,670	7.58%	\$ -	\$ 3,717,245	\$ 1,421,121	\$ 5,543	\$ 100,109
2057	\$ 17,326,619	\$ 60,259,312	\$ 77,585,931	\$ 3,759,360	21.70%	\$ -	\$ 3,949,796	\$ 1,390,596	\$ 5,437	\$ 200,949
2058	\$ 16,601,549	\$ 63,822,733	\$ 80,424,282	\$ 6,514,072	39.24%	\$ -	\$ 4,195,351	\$ 1,358,949	\$ 5,320	\$ 316,629
2059	\$ 15,879,749	\$ 67,460,673	\$ 83,340,422	\$ 9,661,783	60.84%	\$ -	\$ 4,454,504	\$ 1,326,365	\$ 5,466	\$ 448,312

City of St. Albans, 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	\$ 1,084,037	\$ -	\$ 1,062,986	\$ -	\$ 1,065,858	
2020	\$ 774,079	\$ -	\$ 729,853	\$ -	\$ 735,786	
2021	\$ 801,350	\$ -	\$ 726,505	\$ -	\$ 736,375	
2022	\$ 830,364	\$ -	\$ 723,855	\$ -	\$ 737,659	
2023	\$ 845,307	\$ -	\$ 708,540	\$ -	\$ 725,960	
2024	\$ 871,000	\$ -	\$ 701,996	\$ -	\$ 723,147	
2025	\$ 907,880	\$ -	\$ 703,577	\$ -	\$ 728,698	
2026	\$ 938,537	\$ -	\$ 699,361	\$ -	\$ 728,252	
2027	\$ 955,347	\$ -	\$ 684,507	\$ -	\$ 716,641	
2028	\$ -	\$ 983,964	\$ -	\$ 734,212	\$ 713,560	
2029	\$ -	\$ 1,047,647	\$ -	\$ 758,005	\$ 734,475	
2030	\$ -	\$ 1,108,893	\$ -	\$ 777,968	\$ 751,558	
2031	\$ -	\$ 1,150,216	\$ -	\$ 782,468	\$ 753,638	
2032	\$ -	\$ 1,216,836	\$ -	\$ 802,665	\$ 770,772	
2033	\$ -	\$ 1,288,623	\$ -	\$ 824,220	\$ 789,097	
2034	\$ -	\$ 1,349,053	\$ -	\$ 836,684	\$ 798,628	
2035	\$ -	\$ 1,402,415	\$ -	\$ 843,381	\$ 802,606	
2036	\$ -	\$ 1,443,189	\$ -	\$ 841,561	\$ 798,472	
2037	\$ -	\$ 1,469,213	\$ -	\$ 830,734	\$ 785,836	
2038	\$ -	\$ 1,488,896	\$ -	\$ 816,313	\$ 769,879	
2039	\$ -	\$ 1,502,580	\$ -	\$ 798,812	\$ 751,115	
2040	\$ -	\$ 1,503,561	\$ -	\$ 775,074	\$ 726,608	
2041	\$ -	\$ 1,518,307	\$ -	\$ 758,921	\$ 709,332	
2042	\$ -	\$ 1,550,326	\$ -	\$ 751,407	\$ 700,203	
2043	\$ -	\$ 1,574,862	\$ -	\$ 740,133	\$ 687,629	
2044	\$ -	\$ 1,581,495	\$ -	\$ 720,692	\$ 667,559	
2045	\$ -	\$ 1,597,517	\$ -	\$ 705,899	\$ 651,896	
2046	\$ -	\$ 1,604,672	\$ -	\$ 687,541	\$ 633,038	
2047	\$ -	\$ 1,601,469	\$ -	\$ 665,343	\$ 610,763	
2048	\$ -	\$ 1,593,578	\$ -	\$ 641,971	\$ 587,541	
2049	\$ -	\$ 1,581,561	\$ -	\$ 617,793	\$ 563,717	
2050	\$ -	\$ 1,565,829	\$ -	\$ 593,084	\$ 539,548	
2051	\$ -	\$ 1,548,105	\$ -	\$ 568,574	\$ 515,700	
2052	\$ -	\$ 1,528,328	\$ -	\$ 544,275	\$ 492,180	
2053	\$ -	\$ 1,503,780	\$ -	\$ 519,280	\$ 468,169	
2054	\$ -	\$ 1,477,546	\$ -	\$ 494,735	\$ 444,703	
2055	\$ -	\$ 1,450,530	\$ -	\$ 470,949	\$ 422,052	
2056	\$ -	\$ 1,421,121	\$ -	\$ 447,397	\$ 399,743	
2057	\$ 1,390,596	\$ -	\$ 307,197	\$ -	\$ 378,148	
2058	\$ 1,358,949	\$ -	\$ 288,660	\$ -	\$ 357,252	
2059	\$ 1,326,365	\$ -	\$ 270,902	\$ -	\$ 337,089	