Municipal Pensions Oversight Board

City of Oak Hill
West Virginia
Policemen's Pension Plan

Actuarial Valuation as of July 1, 2019
to Determine the City's Contribution for
the Fiscal Year Ending June 30, 2021

Bolton

Submitted by:

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September 24, 2020

Ms. Damita Johnson
City Clerk
P.O. Box 1245
Oak Hill, WV 25901

Chief Michael Whisman
Pension Board Secretary
City of Oak Hill
Policemen's Pension and Relief Fund

Re: City of Oak Hill Policemen's Pension and Relief Fund
Actuarial Valuation Report for the Year Beginning July 1, 2019

Dear Ms. Johnson and Chief Whisman:

The following sets forth the actuarial valuation of the City of Oak Hill Policemen's Pension and Relief Fund as of July 1, 2019. Sections I and II of the report provide a summary of results and the actuarial certification, respectively. Sections III and IV contain the development of the City's contribution for the 2021 fiscal year. Section V provides projections. Sections VI through VIII provide a summary of the census data, plan provisions, assumptions and actuarial methods. Section IX provides a glossary of many of the terms used in this report.

The purposes of this report are to provide information on:

- The sponsor's funding requirements for the fiscal year ending June 30, 2021, based on the selected funding policy, i.e. the **Optional** funding policy as defined in West Virginia Code §8-22-20(e)(1)
- The Fund's eligibility to receive an allocation of the premium tax for the fiscal year ending June 30, 2021
- The Fund's eligibility to provide supplemental benefits for the plan year beginning July 1, 2021

This report may not be used for any other purpose; Bolton is not responsible for the consequences of any unauthorized use.

We are available to answer any questions on the material in this report or to provide explanations or further details as appropriate.

Respectfully submitted,

James E. Ritchie, ASA, EA, FCA, MAAA

Jordan McClane, FSA, EA, FCA, MAAA

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Section I. Executive Summary

Background

Bolton has prepared the following report that sets forth the actuarial valuation of the City of Oak Hill Policemen's Pension and Relief Fund (the Plan) as of July 1, 2019. Please note that some columns and rows in the tables on the following pages may not add due to rounding.

Funding Policy

The Plan is valued using the Optional funding policy as described in WV Code §8-22-20. The City of Oak Hill (the City) switched from the Standard funding policy to the Optional funding policy effective October 1, 2011.

Summary of Results

The following table presents a two-year summary of the Plan's estimated pension contributions.

Estimated Employer Contribution Requirements		FYE 2020		FYE 2021
1. Estimated Employer Normal Cost with Interest[1]	$	59,139	$	68,124
2. Estimated Payroll	$	251,778	$	296,703
3. Normal Cost Rate		23.49%		22.96%
4. Amortization of Unfunded Liability with Interest	$	0	$	0
5. Estimated Premium Tax Allocation	$	0	$	0
6. Unfunded Liability Payment Net of Premium Tax Allocation (4. – 5., not less than 0)	$	0	$	0
7. Estimated Net Employer Contribution (1. + 6.)	**$**	**59,139**	**$**	**68,124**
8. Remaining Amortization Period (Years)		13		12

The following table presents a three-year historical summary of the Plan assets and liabilities.

		July 1, 2017		July 1, 2018		July 1, 2019
Actuarial Accrued Liability (AAL)	$	3,647,200	$	3,636,525	$	3,971,019
Actuarial Asset Value (Market Value)	$	4,293,222	$	4,407,224	$	4,641,751
Unfunded Actuarial Accrued Liability	$	(646,022)	$	(770,699)	$	(670,732)
Funding Percentage		117.7%		121.2%		116.9%

The contributions shown above are assumed to be paid in equal monthly installments throughout the fiscal year. Details of the determination of the City's contribution for FYE 2021 are shown in Section III of this report. The City's contributions for years prior to FYE 2020 and liabilities prior to

[1] Actual FY 2020/2021 normal cost payment will be based on the employer Normal Cost Rate of 23.49%/22.96% multiplied by the actual payroll for FY 2019/2020.

July 1, 2018 were calculated by the plan's previous actuary, Gabriel, Roeder, Smith & Company (GRS).

Risk Measures

Generally, the primary risk that a plan sponsor incurs from a defined benefit plan is the risk of substantial increases in annual contributions. For plans that develop contributions using a generally accepted actuarial funding policy, these increases occur most frequently due to variation in the investment returns. The following table shows four commonly used measures of the relative riskiness of a pension plan, relative to the plan sponsor and the employee groups covered by the plan. More detail is provided later in this report.

Risk Measure	July 1, 2017	July 1, 2018	July 1, 2019	Conservative Measures
Inactive AAL Percent of Total AAL	80.9%	68.9%	63.3%	<50%
Assets to Payroll	23.3	17.5	15.6	<5
Liabilities to Payroll	19.8	14.4	13.4	<5
Benefit Payments to Contributions	0.7	2.7	1.9	<3

Experience Analysis

The following factors affected the City's funded status:

- The Plan uses the Optional funding policy. City contributions between FY 2020 and FY 2021 are expected to increase by 15.2% from $59,139 to $68,124. This reflects a $8,985 increase in employer Normal Cost and a $0 change to the net amortization.
- This valuation uses the same 6.5% discount rate as the prior valuation.
- Liabilities increased by 9.2% and assets increased by 5.3%.
- The Plan's funded ratio decreased from 121.2% to 116.9%.
- The return on assets for FY 2019 was 7.3%.
- Since the Plan uses the Optional funding policy, the Plan is automatically considered solvent for purposes of receiving the state premium tax allocation and granting COLAs as long as the municipality makes the required contributions each year.

Changes in Methods, Assumptions, and Plan Amendments

There were no changes in methods or assumptions reflected in this valuation.

There were no changes in the Plan provisions reflected in this valuation.

Sources of Information

The July 1, 2019 participant data and market value of assets were provided by or at the direction of the City of Oak Hill. While we have reviewed this data for consistency and completeness, we have not audited this data.

Supplemental Benefit Eligibility

West Virginia Code §8-22-26a requires that all retirees, surviving beneficiaries, disability pensioners or future retirees receive a Supplemental Pension Benefit (i.e. cost-of-living adjustments, or COLAs) payable on the first day of July, based on a percentage increase equal to any increase in the consumer price index as calculated by the United States Department of Labor, Bureau of Statistics for the preceding year. The COLA shall not exceed 4% per year and is not payable to a retiree until the first day of July after the second anniversary of the retiree's date of retirement. Additionally, the COLA shall be calculated on only the first $15,000 of the annual benefit paid and on the COLAs accumulated by the retiree since benefit commencement. If, at any time after the COLA becomes applicable, the total accumulated percentage increase in benefit on the allowable amount becomes less than 75% of the total accumulated percentage increase in the consumer price index over that same period of time, the 4% limitation shall be inapplicable until such time as the accumulated COLAs equal 75% of the accumulated increase in the consumer price index. The consumer price index used to determine the COLA is the CPI-U US City Average all items with a base of 1982-1984 equal to 100. The increase is measured as the increase in the annual average from the second prior calendar year to the annual average from the prior calendar year.

The COLA is only payable to the extent that the actuary certifies to the Board of Trustees of the fund the amount of increase in the supplemental benefits, if any, which may be paid, and which will preserve the minimum standards for actuarial soundness of the fund as set forth in West Virginia Code §8-22-20. This plan uses the Optional funding policy. By definition, funds that use the Optional funding policy are expected to be solvent after 15 years. The plan may not be able to grant COLAs if the City is not paying the required contribution determined under the Optional funding policy.

Premium Tax

West Virginia Code §33-3-14d established a 1% tax on premiums for fire insurance and casualty insurance policies. The proceeds from this tax are used to fund the West Virginia Teachers Retirement System, the Fire Protection Fund for volunteer and part-volunteer fire companies and the Municipal Pensions Security Fund, which is managed by the Municipal Pensions Oversight Board (MPOB). The MPOB allocates funds from the Municipal Pensions Security Fund to each eligible municipality's police and fire fund that is less than 100% funded on an actuarial basis. The funds from the Base Allocation are allocated proportionately to each fire and police fund based on the average monthly number of police officers and firefighters who worked at least 100 hours per month (regardless of whether the police and fire employees participate in the municipality's pension plan or the West Virginia state Municipal Police and Firefighters Retirement System (MPFRS)). The funds from the Excess Allocation are allocated proportionately to each fire and police fund based on the average monthly number of police officers and firefighters who worked at least 100 hours per month and the average monthly number of retired police officers and firefighters (regardless of whether the police and fire employees and retirees participate in the municipality's pension plan or the West Virginia MPFRS).

West Virginia Code §8-22-19 requires a plan sponsor to deposit into the pension fund the required contributions in accordance with Code §8-22-20 at least on a monthly basis at a rate of one-twelfth of the annual requirement in order to receive the premium tax allocation described above. A municipality may pre-pay this contribution. If the allocable portion of the Municipal Pensions Security Fund is not paid to the pension and relief fund within eighteen months, the portion is forfeited by the pension and relief fund and is allocable to other eligible municipal policemen's and firemen's pension and relief funds in accordance with West Virginia Code §33-3-14d.

Solvency Requirements

West Virginia Code requires that plans be solvent in order to receive the state premium tax allocation as well as to grant the COLA. In order to be considered solvent, the fund must be projected to have assets greater than $1 for the next 15 years. This plan uses the Optional funding policy. By definition, funds that use the Optional funding policy are expected to be solvent after 15 years as long as the City is contributing the entire contribution calculated under the Optional funding policy each year.

Actuarial Projections

Section V of this report provides long-range projections of assets, liabilities, funded status, and contributions for the pension fund. The projections are shown to help the municipality understand the future funded status and future contribution requirements based on an expected set of assumptions.

Section II. Actuarial Certification

This actuarial valuation sets forth our calculation of an estimate of the liabilities of the City of Oak Hill Policemen's Pension and Relief Fund, together with a comparison of these liabilities with the value of the Plan assets, as submitted by the City of Oak Hill (the City). This calculation and comparison with assets is 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 and would produce different results, so that no one projection is uniquely "correct" and many alternative projections of the future could also be regarded as reasonable. 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. The Plan may have used other assumptions in the past. We will likely consider changes in assumptions at a future date in conjunction with the MPOB.

A "sensitivity analysis" shows the degree to which results would be different if alternative assumptions within the range of possibilities were substituted for those utilized in this report. We have not been engaged to perform such a sensitivity analysis, and thus, the results of such an analysis are not included in this report. At the City's request, Bolton is available to perform such a sensitivity analysis.

The City is responsible for selecting the Plan's funding policy. The MPOB selects the actuarial valuation methods, asset valuation methods, and assumptions based on the advice of the plan's actuary. The policies, methods and assumptions used in this valuation are those that have been so prescribed by the MPOB, in consultation with the prior actuarial firm GRS, and are described in this report. The MPOB is solely responsible for communicating to Bolton any changes required thereto.

In addition, decisions regarding benefit improvements, benefit changes, the Plan's investment policy, and similar issues should not be based on this valuation. These issues are complex and other factors should be considered when making such decisions. Other factors might include the anticipated vitality of the local economy and future growth expectations, as well as other economic and financial factors.

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. It does not affect the cost of the Plan. Different funding methods provide for different timing of contributions to the Plan. As the experience of the Plan evolves, it is normal for the level of contributions to the Plan to change. The Plan sponsor is responsible for funding the cost of the Plan. If a contribution is not made for a particular year, either by deliberate choice or because of an error in a calculation, that contribution can be made in later years. We will not be responsible for contributions that are made at a future time rather than an earlier time.

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.

The City of Oak Hill Policemen's Pension Fund Board of Trustees is solely responsible for selecting the Plan's investment policies, asset allocations and individual investments. Bolton's actuaries have not provided any investment advice to the Board.

The information in this report was prepared for the internal use of the MPOB, the West Virginia Legislature's Joint Committee on Pensions and Retirement, the City and their auditors in connection with their review of the City's financial statements and our actuarial valuation of the Plan. It is neither intended nor necessarily suitable for other purposes. Bolton is not responsible for the consequences of any other use or the reliance upon this report 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, the MPOB selected an assumption based on the expected long-term rate of return on Plan investments, its funded status and liquidity needs. Using a lower discount rate assumption, such as a rate based on long-term bond yields, could substantially increase the estimated present value of future and accrued liabilities.

Because valuations are a snapshot in time and are based on estimates and assumptions that are not precise and will differ from actual experience, contribution calculations are inherently imprecise. There is no uniquely "correct" level of Actuarially Determined Contribution (ADC) for the coming Plan year.

This report provides certain financial calculations for use by the City's 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 (open or closed plans) 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 MPOB, Pension Board or the City should notify Bolton promptly after receipt of this report if they disagree with anything contained in the report or is aware of any information that would affect the results of the report that has not been communicated to Bolton or incorporated therein. The report will be deemed final and acceptable unless the MPOB, Pension Board or the City promptly provides such notice to Bolton.

The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services, which could create a conflict of interest that would impair the objectivity of our work.

We are available to answer any questions on the material in this report and provide explanations or further details as appropriate.

Jim Ritchie, ASA, EA, FCA, MAAA

Jordan McClane, FSA, EA, FCA, MAAA

Section III. Determination of City Contributions

Net Employer Normal Cost

The breakdown of the Net Employer Normal Cost is illustrated below.

Net Employer Normal Cost (BOY)		7/1/2018		7/1/2019
1. Normal Cost	$	74,269	$	86,394
2.a. Administrative Expenses FYE 2020/2021	$	2,581	$	2,652
2.b. Administrative Expenses (BOY)	$	2,501	$	2,570
3. Gross Normal Cost (1. + 2.b.)	$	76,770	$	88,964
4. Expected Employee Contributions for Next 12 Months (BOY)	$	19,464	$	22,951
5. Net Employer Normal Cost (3. – 4.)	$	57,306	$	66,013
(% of Compensation)		23.5%		23.0%

Development of Estimated Minimum Required Contribution Under the Optional Funding Policy for Funding and GASB Purposes

The development of the Estimated Minimum Employer Contribution is illustrated below.

Estimated Minimum Employer Contribution		FYE 2020		FYE 2021
1. Gross Normal Cost, Including Administrative Expenses (BOY)	$	76,770	$	88,964
2. Expected Employee Contributions for Next 12 Months (BOY)	$	19,464	$	22,951
3. Net Employer Normal Cost (BOY) (1. – 2.)	$	57,306	$	66,013
4. Interest on Normal Cost	$	1,833	$	2,111
5. Total Employer Normal Cost with Interest (3. + 4.)	$	59,139	$	68,124
6. Amortization of Unfunded Liability	$	(84,149)	$	(77,193)
7. Interest on Unfunded Liability Payment	$	(2,692)	$	(2,469)
8. Unfunded Liability Payment with Interest (6. + 7.)	$	(86,841)	$	(79,662)
9. Estimated Premium Tax Allocation	$	0	$	0
10. Unfunded Liability Payment Net of Premium Tax Allocation (8. – 9., not less than 0)	$	0	$	0
11. Net Employer Contribution (5. + 10.)	**$**	**59,139**	**$**	**68,124**
12. Estimated Premium Tax Allocation (9.)	$	0	$	0
13. **Total City Contribution for GASB Purposes (11. + 12.)**	$	**59,139**	$	**68,124**
14. Amortization Period (Years)		13		12

Section IV. Determination of Liabilities and Assets

Unfunded Actuarial Accrued Liability

Below is a summary of the key valuation results.

Unfunded Actuarial Accrued Liability			7/1/2018			7/1/2019
1. Actuarial Accrued Liability	Count			Count		
a. Active	5	$	1,132,155	5	$	1,456,207
b. Retirees	5		2,327,291	5		2,338,543
c. Survivors	1		176,094	1		175,284
d. Disableds	0		0	0		0
e. Deferred Vesteds	0		0	0		0
f. Former Members Due Refunds	1		985	1		985
g. Total	**12**	**$**	**3,636,525**	**12**	**$**	**3,971,019**
2. Present Value of Future Normal Costs		$	767,157		$	836,231
3. Present Value of Benefits (1.g. + 2.)		$	4,403,682		$	4,807,250
4. Market Value of Assets		$	4,407,224		$	4,641,751
5. Unfunded Actuarial Accrued Liability (1.g. – 4.)		$	(770,699)		$	(670,732)
6. Funded Ratio (4. / 1.g.)			121.2%			116.9%

Experience (Gain)/Loss for Plan Year Ended June 30, 2019

Experience (Gain)/Loss for Plan Year Ended June 30, 2019			
1. Liabilities			
a.	Actuarial Accrued Liability as of 7/1/2018	$	3,636,525
b.	Normal Cost as of 7/1/2018		74,269
c.	Interest on a. and b. to 6/30/2019		241,202
d.	Benefit Payments with Interest to 6/30/2019		176,262
e.	Effect of Assumption Changes		0
f.	Expected Liability at 7/1/2019 (a. + b. + c. – d. + e.)		3,775,734
g.	Actual Liability at 7/1/2019		3,971,019
h.	Liability (Gain)/Loss (g. - f.)		195,285
2. Market Value of Assets			
a.	Market Value of Assets as of 7/1/2018	$	4,407,224
b.	Interest on a. to 6/30/2019		286,470
c.	Contributions with Interest to 6/30/2019		91,151
d.	Benefit Payments with Interest to 6/30/2019		176,262
e.	Administrative Expenses with Interest to 6/30/2019		0
f.	Expected Assets at 6/30/2019 (a. + b. + c. – d. – e.)		4,608,583
g.	Actual Assets at 6/30/2019		4,641,751
h.	Asset (Gain)/Loss (f. - g.)		(33,168)
3. Total (Gain)/Loss (1h. + 2h.)		$	162,117

The gains and losses shown are only for liability and asset gains and losses. Any change in the Unfunded Actuarial Accrued Liability from funding more or less than needed to cover Normal Cost and interest on the Unfunded Actuarial Accrued Liability is a separate amount.

Reconciliation of Assets

Below is a reconciliation of assets (unaudited) from July 1, 2017 through June 30,2019.

Plan Year Ending		June 30, 2018		June 30, 2019
1. Beginning of Year Market Value of Assets	$	4,293,222	$	4,407,224
Adjustments to Market Value of Assets		0		0
Beginning of Year Market Value of Assets	**$**	**4,293,222**	**$**	**4,407,224**
2. Additions				
a. Contributions				
(i) Local Government	$	42,838	$	65,545
(ii) State Government		0		0
(iii) Employee		19,343		22,737
(iv) Total		62,181		88,282
b. Receivable Contributions[2]				
(i) Local Government		0		0
(ii) State Government		0		0
(iii) Employee Contributions		0		0
(iv) Total		0		0
c. Earnings on Investments				
(i) Net Appreciation/(Depreciation)		39,439		177,209
(ii) Net Realized Gain (Loss) on Sale/Exchange		23,752		0
(iii) Interest and Dividends		164,107		155,132
(iv) Other Income		1,797		646
(v) Investment Expense		(16,122)		(15,895)
(vi) Receivable Investment Income		0		0
(vii) Payable Investment Expenses		0		0
(viii) Net Investment Income		212,973		317,092
d. Other Revenue		8,383		0
e. Total Additions	**$**	**283,537**	**$**	**405,374**
3. Disbursements				
a. Benefit Payments	$	169,535	$	166,624
b. Withdrawals		0		0
c. Administrative Expenses				
(i) Municipal Fees		0		0
(ii) Other Expenses		0		0
(iii) Total Administrative Expenses		0		0
d. Payable Benefits and Withdrawals		0		4,223
e. Payable Administrative Expenses		0		0
f. Total Disbursements	**$**	**169,535**	**$**	**170,847**
4. Net Increase (2.e. – 3.f.)		114,002		234,527
5. Net Assets (1. + 4.)	**$**	**4,407,224**	**$**	**4,641,751**
6. Rate of Return Net of Investment Fees (2I / [A + B – I] Method[3])		5.2%		7.3%

[2] Receivable contributions for each respective plan year ending.
[3] A = beginning-of-year market value of assets, B = end-of-year market value of assets, I = investment return during the year

Asset Allocation

The table below shows the amount of funds invested in each account as of June 30, 2018 and June 30, 2019

Assets Held by Category		June 30, 2018		June 30, 2019
Cash and Deposits	$	170,494	$	68,678
Receivables				
Contributions	$	0	$	0
Investment Income		0		0
Total Receivables	**$**	**0**	**$**	**0**
Investment				
Government Securities	$	1,070,798	$	817,802
Fixed Income		1,076,233		1,556,519
Equities		2,089,699		2,202,975
Alternative Investments		0		0
Other		0		0
Total Investments	**$**	**4,236,730**	**$**	**4,577,296**
Total Assets	**$**	**4,407,224**	**$**	**4,645,974**
Payables				
Investment Expense	$	0	$	0
Benefits and Withdrawals		0		4,223
Administrative Expense		0		0
Total Payables	**$**	**0**	**$**	**4,223**
Net Position	**$**	**4,407,224**	**$**	**4,641,751**

Risk Measures

Generally, the primary risk that a plan sponsor incurs from a defined benefit plan is the risk of substantial increases in annual contributions. For plans that develop contributions using a generally accepted actuarial funding policy, these increases occur most frequently due to variation in the investment returns. The following table shows four commonly used measures of the relative riskiness of a pension plan, relative to the plan sponsor and the employee groups covered by the plan.

Risk Measure	July 1, 2017	July 1, 2018	July 1, 2019	Conservative Measures
Inactive AAL Percent of Total AAL	80.9%	68.9%	63.3%	<50%
Assets to Payroll	23.3	17.5	15.6	<5
Liabilities to Payroll	19.8	14.4	13.4	<5
Benefit Payments to Contributions	0.7	2.7	1.9	<3

The current *Assets to Payroll* of 15.6 indicates that a 1% asset gain/loss is about 15.6% of the annual payroll. Similarly, the current *Liabilities to Payroll* of 13.4 indicates that a 1% change in liability is about 13.4% of the annual payroll.

The use of payroll in these risk measures is generally an easily available substitute for the employer's revenue and often reflects the employer's ability to afford the plan. However, this plan is closed to new entrants, and thus, the payroll figure used in these metrics generally does not align with revenue as it represents only current active members (as of July 1, 2019) who were hired prior to adopting the Optional funding policy.

If the plan or employer were interested in doing more quantitative assessments of risks, the following are examples of analyses that could be performed:

- *Scenario Test:* A process for assessing the impact of one possible event, or several simultaneously or sequentially occurring possible events, on a plan's financial condition. For example, the effect of a layoff or reduction in workforce, or early retirement program.

- *Sensitivity Test:* A process for assessing the impact of a change in an actuarial assumption on an actuarial measurement. This could be a decrease in the valuation discount rate or a change in future life expectancies.

- *Stochastic Modeling:* A process for generating numerous potential outcomes by allowing for random variations in one or more inputs over time for the purpose of assessing the distribution of those outcomes. This analysis could show a range of potential future contribution levels and the likelihood of contributions increasing to a certain level.

- *Stress Test:* A process for assessing the impact of adverse changes in one or relatively few factors affecting a plan's financial condition. For example, a stress test could show the impact of a single year or period of several years with significant investment losses.

Table 1 – 40-Year Projection of Optional Funding

	Number (BOY)		Assets										
Year End June 30	Active	Non-Active	Assets (BOY)	Benefit Payments	Expenses	Employer Contrib.	Employee Contrib.	Premium Tax Allocation	Investment Income	Assets (EOY)	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio
2019	5	7	$4,407,224	$170,847	-	$65,545	$22,737	-	$317,092	$4,641,751	$3,971,019	(670,732)	116.89%
2020	5	7	$4,641,751	$175,360	$2,581	$59,139	$23,685	-	$298,671	$4,845,305	$4,139,711	(705,594)	117.04%
2021	5	6	$4,845,305	$181,611	$2,652	$68,124	$23,596	-	$311,985	$5,064,747	$4,312,320	(752,427)	117.45%
2022	4	6	$5,064,747	$193,290	$2,477	$67,009	$22,963	-	$325,824	$5,284,776	$4,480,189	(804,587)	117.96%
2023	4	7	$5,284,776	$202,722	$2,800	$64,181	$22,690	-	$339,715	$5,505,840	$4,647,059	(858,781)	118.48%
2024	4	7	$5,505,840	$210,672	$2,877	$62,421	$22,693	-	$353,771	$5,731,176	$4,815,695	(915,481)	119.01%
2025	4	7	$5,731,176	$217,282	$2,956	$61,647	$22,914	-	$368,186	$5,963,685	$4,988,596	(975,089)	119.55%
2026	3	7	$5,963,685	$236,094	$2,761	$61,353	$22,234	-	$382,673	$6,191,090	$5,149,409	(1,041,681)	120.23%
2027	3	8	$6,191,090	$255,545	$3,121	$58,602	$21,125	-	$396,697	$6,408,848	$5,294,953	(1,113,895)	121.04%
2028	3	8	$6,408,848	$267,141	$3,207	$54,323	$20,870	-	$410,332	$6,624,025	$5,436,142	(1,187,883)	121.85%
2029	3	8	$6,624,025	$276,408	$3,295	$52,875	$20,847	-	$423,973	$6,842,017	$5,576,158	(1,265,859)	122.70%
2030	2	8	$6,842,017	$285,451	$3,078	$51,918	$20,831	-	$437,829	$7,064,066	$5,715,056	(1,349,010)	123.60%
2031	2	8	$7,064,066	$291,045	$3,163	$51,161	$21,153	-	$452,066	$7,294,238	$5,858,021	(1,436,217)	124.52%
2032	2	8	$7,294,238	$292,357	$3,250	$51,712	$21,538	-	$467,013	$7,538,894	$6,010,012	(1,528,882)	125.44%
2033	2	8	$7,538,894	$317,283	$3,339	$3,339	$20,600	-	$480,538	$7,722,749	$6,142,021	(1,580,728)	125.74%
2034	2	8	$7,722,749	$339,597	$3,431	$3,431	$19,044	-	$491,725	$7,893,921	$6,253,209	(1,640,712)	126.24%
2035	2	8	$7,893,921	$351,433	$3,525	$3,525	$18,555	-	$502,457	$8,063,500	$6,357,150	(1,706,350)	126.84%
2036	1	8	$8,063,500	$377,704	$3,260	$3,260	$16,410	-	$512,570	$8,214,776	$6,433,000	(1,781,776)	127.70%
2037	1	9	$8,214,776	$401,166	$3,722	$3,722	$13,710	-	$521,566	$8,348,886	$6,480,443	(1,868,443)	128.83%
2038	1	9	$8,348,886	$433,325	$3,824	$3,824	$10,642	-	$529,157	$8,455,360	$6,487,900	(1,967,460)	130.33%
2039	1	9	$8,455,360	$460,933	$3,929	$3,929	$7,047	-	$535,079	$8,536,553	$6,456,181	(2,080,372)	132.22%
2040	0	9	$8,536,553	$475,950	$3,633	$3,633	$5,110	-	$539,815	$8,605,528	$6,400,766	(2,204,762)	134.45%
2041	0	9	$8,605,528	$485,973	$3,733	$3,733	$3,708	-	$543,932	$8,667,195	$6,326,968	(2,340,227)	136.99%
2042	0	9	$8,667,195	$492,287	$3,836	$3,836	$2,654	-	$547,705	$8,725,267	$6,238,525	(2,486,742)	139.86%
2043	0	9	$8,725,267	$496,861	$3,941	$3,941	$1,752	-	$551,305	$8,781,463	$6,136,673	(2,644,790)	143.10%
2044	0	9	$8,781,463	$497,280	$4,049	$4,049	$1,228	-	$554,927	$8,840,338	$6,026,147	(2,814,191)	146.70%
2045	0	8	$8,840,338	$495,914	$3,698	$3,698	$834	-	$558,785	$8,904,043	$5,908,635	(2,995,408)	150.70%
2046	0	8	$8,904,043	$494,125	$3,800	$3,800	$389	-	$562,969	$8,973,276	$5,783,929	(3,189,347)	155.14%
2047	0	8	$8,973,276	$489,313	$3,905	$3,905	$261	-	$567,619	$9,051,843	$5,655,700	(3,396,143)	160.05%
2048	0	8	$9,051,843	$484,953	$4,012	$4,012	-	-	$572,857	$9,139,747	$5,522,855	(3,616,892)	165.49%
2049	0	7	$9,139,747	$478,135	$3,607	$3,607	-	-	$578,789	$9,240,401	$5,388,411	(3,851,990)	171.49%
2050	0	7	$9,240,401	$470,957	$3,706	$3,706	-	-	$585,561	$9,355,005	$5,252,636	(4,102,369)	178.10%
2051	0	7	$9,355,005	$463,551	$3,808	$3,808	-	-	$593,247	$9,484,701	$5,115,678	(4,369,023)	185.40%
2052	0	7	$9,484,701	$455,909	$3,913	$3,913	-	-	$601,922	$9,630,714	$4,977,704	(4,653,010)	193.48%
2053	0	6	$9,630,714	$448,189	$3,446	$3,446	-	-	$611,660	$9,794,185	$4,838,729	(4,955,456)	202.41%
2054	0	6	$9,794,185	$440,365	$3,541	$3,541	-	-	$622,535	$9,976,355	$4,698,795	(5,277,560)	212.32%
2055	0	6	$9,976,355	$432,520	$3,638	$3,638	-	-	$634,627	$10,178,462	$4,557,861	(5,620,601)	223.32%
2056	0	6	$10,178,462	$424,694	$3,738	$3,738	-	-	$648,015	$10,401,783	$4,415,843	(5,985,940)	235.56%
2057	0	6	$10,401,783	$416,895	$3,841	$3,841	-	-	$662,780	$10,647,668	$4,272,642	(6,375,026)	249.21%
2058	0	5	$10,647,668	$409,102	$3,289	$3,289	-	-	$679,012	$10,917,578	$4,128,175	(6,789,403)	264.46%
2059	0	5	$10,917,578	$401,285	$3,379	$3,379	-	-	$696,806	$11,213,099	$3,982,385	(7,230,714)	281.57%
2060	0	5	$11,213,099	$393,396	$3,472	$3,472	-	-	$716,267	$11,535,970	$3,835,260	(7,700,710)	300.79%

Table 1 – 40-Year Projection of Optional Funding (Cont.)

				Employer Contributions									
Year End June 30	Closed Group Payroll	New Entrant Payroll	Total Payroll	Employee Contrib.	Gross Normal Cost	Interest on Gross Normal Cost	Net Employer Normal Cost	Amortization of UAAL	Mid-Year Interest on Amortization	Premium Tax Allocation	Net Employer Amortization	Expenses	Optional Employer Contrib.
2019													
2020	$296,703	-	$296,703	$22,951	$86,394	$2,029	$65,472	-	-	-	-	$2,652	$68,124
2021	$294,891	-	$294,891	$22,865	$85,397	$2,000	$64,532	-	-	-	-	$2,477	$67,009
2022	$285,471	-	$285,471	$22,251	$81,729	$1,903	$61,381	-	-	-	-	$2,800	$64,181
2023	$280,866	-	$280,866	$21,987	$79,685	$1,846	$59,544	-	-	-	-	$2,877	$62,421
2024	$279,923	-	$279,923	$21,990	$78,862	$1,819	$58,691	-	-	-	-	$2,956	$61,647
2025	$281,828	-	$281,828	$22,204	$78,980	$1,816	$58,592	-	-	-	-	$2,761	$61,353
2026	$270,488	-	$270,488	$21,545	$75,306	$1,720	$55,481	-	-	-	-	$3,121	$58,602
2027	$253,378	-	$253,378	$20,470	$70,002	$1,584	$51,116	-	-	-	-	$3,207	$54,323
2028	$248,313	-	$248,313	$20,223	$68,266	$1,537	$49,580	-	-	-	-	$3,295	$52,875
2029	$246,527	-	$246,527	$20,201	$67,527	$1,514	$48,840	-	-	-	-	$3,078	$51,918
2030	$244,801	-	$244,801	$20,185	$66,695	$1,488	$47,998	-	-	-	-	$3,163	$51,161
2031	$247,862	-	$247,862	$20,497	$67,457	$1,502	$48,462	-	-	-	-	$3,250	$51,712
2032	$251,814	-	$251,814	$20,870	$68,478	$1,523	$49,131	-	-	-	-	$3,339	$3,339
2033	$236,515	-	$236,515	$19,961	$64,592	$1,428	$46,059	-	-	-	-	$3,431	$3,431
2034	$212,914	-	$212,914	$18,454	$58,607	$1,284	$41,437	-	-	-	-	$3,525	$3,525
2035	$204,341	-	$204,341	$17,980	$56,486	$1,232	$39,738	-	-	-	-	$3,260	$3,260
2036	$178,562	-	$178,562	$15,901	$49,222	$1,066	$34,387	-	-	-	-	$3,722	$3,722
2037	$148,636	-	$148,636	$13,285	$40,654	$875	$28,244	-	-	-	-	$3,824	$3,824
2038	$114,846	-	$114,846	$10,312	$31,375	$674	$21,737	-	-	-	-	$3,929	$3,929
2039	$76,293	-	$76,293	$6,829	$20,887	$450	$14,508	-	-	-	-	$3,633	$3,633
2040	$55,219	-	$55,219	$4,952	$15,125	$325	$10,498	-	-	-	-	$3,733	$3,733
2041	$39,979	-	$39,979	$3,593	$10,958	$236	$7,601	-	-	-	-	$3,836	$3,836
2042	$28,564	-	$28,564	$2,572	$7,830	$168	$5,426	-	-	-	-	$3,941	$3,941
2043	$18,391	-	$18,391	$1,698	$5,069	$108	$3,479	-	-	-	-	$4,049	$4,049
2044	$12,879	-	$12,879	$1,190	$3,547	$75	$2,432	-	-	-	-	$3,698	$3,698
2045	$8,746	-	$8,746	$808	$2,409	$51	$1,652	-	-	-	-	$3,800	$3,800
2046	$4,083	-	$4,083	$377	$1,093	$23	$739	-	-	-	-	$3,905	$3,905
2047	$2,738	-	$2,738	$253	$733	$15	$495	-	-	-	-	$4,012	$4,012
2048	-	-	-	-	-	-	-	-	-	-	-	$3,607	$3,607
2049	-	-	-	-	-	-	-	-	-	-	-	$3,706	$3,706
2050	-	-	-	-	-	-	-	-	-	-	-	$3,808	$3,808
2051	-	-	-	-	-	-	-	-	-	-	-	$3,913	$3,913
2052	-	-	-	-	-	-	-	-	-	-	-	$3,446	$3,446
2053	-	-	-	-	-	-	-	-	-	-	-	$3,541	$3,541
2054	-	-	-	-	-	-	-	-	-	-	-	$3,638	$3,638
2055	-	-	-	-	-	-	-	-	-	-	-	$3,738	$3,738
2056	-	-	-	-	-	-	-	-	-	-	-	$3,841	$3,841
2057	-	-	-	-	-	-	-	-	-	-	-	$3,289	$3,289
2058	-	-	-	-	-	-	-	-	-	-	-	$3,379	$3,379
2059	-	-	-	-	-	-	-	-	-	-	-	$3,472	$3,472
2060													

Section VI. Participant Information

Participant Summary

The following table summarizes the counts, ages and benefit information for plan participants used in the prior and current valuations.

		July 1, 2018		July 1, 2019
1. Actives				
a. Number		5		5
b. Average Age		38.2		39.2
c. Average Service		12.4		13.6
d. Average Salary	$	51,365	$	60,321
2. Retirees				
a. Number		5		5
b. Average Age		62.5		63.5
c. Total Annual Benefits	$	153,093	$	155,185
3. Survivors				
a. Number		1		1
b. Average Age		69.8		70.8
c. Total Annual Benefits	$	13,531	$	13,856
4. Disableds				
a. Number		0		0
b. Average Age		N/A		N/A
c. Total Annual Benefits	$	N/A	$	N/A
5. Deferred Vesteds				
a. Number		0		0
b. Average Age		N/A		N/A
c. Total Annual Benefits	$	N/A	$	N/A
6. Members Owed Refunds				
a. Number		1		1
b. Average Age		61.3		62.3
c. Total Refunds Owed	$	985	$	985

Active Age/Service Distribution Including Compensation

Shown below is the age and service distribution of active participants in the City of Oak Hill Policemen’s Pension and Relief Fund. The compensation shown is the average projected pay for the plan year beginning July 1, 2019.

Credited Service as of July 1, 2019

	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	Total
Under 25	-	-	-	-	-	-	-	**-**
	-	-	-	-	-	-	-	**-**
25 - 29	-	-	-	-	-	-	-	**-**
	-	-	-	-	-	-	-	**-**
30 - 34	-	2	-	-	-	-	-	**2**
	-	59,698	-	-	-	-	-	**59,698**
35 - 39	-	-	1	-	-	-	-	**1**
	-	-	63,766	-	-	-	-	**63,766**
40 - 44	-	-	-	1	-	-	-	**1**
	-	-	-	58,849	-	-	-	**58,849**
45 - 49	-	-	-	1	-	-	-	**1**
	-	-	-	59,595	-	-	-	**59,595**
50 - 54	-	-	-	-	-	-	-	**-**
	-	-	-	-	-	-	-	**-**
55 - 59	-	-	-	-	-	-	-	**-**
	-	-	-	-	-	-	-	**-**
60 - 64	-	-	-	-	-	-	-	**-**
	-	-	-	-	-	-	-	**-**
65 & Up	-	-	-	-	-	-	-	**-**
	-	-	-	-	-	-	-	**-**
Totals	**-**	**2**	**1**	**2**	**-**	**-**	**-**	**5**
	-	**59,698**	**63,766**	**59,222**	**-**	**-**	**-**	**60,321**

Averages

Age	39.2
Service	13.6

Participant Reconciliation

Shown below is the reconciliation of participants between the prior and current valuation date.

	Actives	Retirees	Survivors	Disableds	Deferred Vesteds	Due Refund	Total
Participants as of 7/1/2018	5	5	1	0	0	1	12
New							
Rehired							
Terminated - Vested							
Terminated - Nonvested							
Disabled							
Retired							
Paid Refund							
Payments Expired							
Deceased - No Survivor							
Deceased - With Survivor							
New Beneficiary							
New QDRO							
Corrections							
Participants as of 7/1/2019	**5**	**5**	**1**	**0**	**0**	**1**	**12**

Section VII. Summary of Plan Provisions

Plan Year
July 1 – June 30.

Eligibility to Participate
All compensated employees of the relevant Fire or Police Department are eligible to participate in the Firemen's or Policemen's Pension and Relief Fund (Plan). If the fund uses the Optional or Conservation funding policies, only members hired prior to the date of the change to either one of these policies are eligible to participate in the Plan.

Credited Service
The number of years that the member has contributed to the employees' retirement and benefit fund.

Absence from service because of sickness or injury for a period of two years or less shall not be construed as time out of service.

Military Service — Any current member who has been on qualified military service in the armed forces of the United States with an honorable discharge may, within six months from his or her date of discharge, be given credit for continuous service in the paid police or fire department.

A member may receive retirement eligibility service (i.e. eligibility towards the 20 years of service for normal retirement) for qualified military service only if the military service was prior to November 18, 2009 or the member repays, without interest, member assessments that were missed during the period of military service.

Any member who has served in active duty with the armed forces of the United States, whether prior to or subsequent to becoming a member of a paid police or fire department, shall receive an additional 1% of Average Annual Compensation for each full continuous year so served in active military duty, up to a maximum of an additional 4%.

Average Annual Compensation
The average of the three twelve-consecutive-month periods of employment in which the member received the highest salary or compensation. While the months in each twelve-month period need to be consecutive, the three "twelve-consecutive-month periods" do not need to be consecutive.

Each twelve-consecutive-month annual compensation is limited to 120% of the *Average Adjusted Salary,* which is the average of the Adjusted Salary for the two consecutive twelve-consecutive-month periods immediately preceding the twelve-consecutive-month period used in determining benefits.

The *Adjusted Salary* for any preceding year is the respective preceding year total salary multiplied by the ratio of base salary of the year used in determining benefits to the base salary from the respective preceding year. A preceding year is either the "year one" which is the second twelve consecutive month period preceding the twelve-consecutive-month period used to determine benefits or "year two" which is the twelve-consecutive-month period immediate preceding the twelve-consecutive-month period used to determine benefits.

Employee Contributions

Participating employees hired before January 1, 2010: 7.00% of compensation.
Participating employees hired on or after January 1, 2010: 9.50% of compensation.

Employer Contributions

The municipality has elected to contribute the minimum employer contribution under the Alternative funding policy.

Normal Retirement Eligibility

Members are eligible at the earlier of age 50 with 20 years of credited service or age 65.

Normal Retirement Benefit

The annual retirement benefit equals the sum of:

- 60% of average annual compensation, for service up to 20 years; not less than $6,000
- 2% for each year of service between 20 and 25 years
- 1% for each year of service between 25 and 30 years
- Employees serving in the military are eligible for an additional 1% of average annual compensation for each year of military service up to four years.

The maximum benefit is limited to 75% of average annual compensation.

Normal Form

Life annuity with a 60% spouse's survivor benefit. The benefit payable to the spouse as of the member's date of death is determined by taking 60% of the member's benefit at the member's retirement date and indexing that amount to the date of death using the COLA methodology described in the Cost of Living Adjustment section below. No other optional forms are allowed under the Plan.

Disability Retirement Eligibility

Members are eligible after earning five years of service. There is no years of service requirement if disability is service related. Disability is defined in WV Code §8-22-23a as the inability to perform adequately the job duties required of the member.

Disability Retirement Benefit

The monthly disability benefit equals the sum of:

- 60% of monthly salary at disability, but not less than $500, plus
- Employees serving in the military are eligible for an additional benefit of 1% of monthly salary at disability for each year of military service up to four years.

Disability benefits, when aggregated with monthly state workers compensation benefits, shall not exceed 100% of the member's monthly compensation at the time of disability. Benefits continue for life or until recovery.

Disability pensions are offset by $1 per every $3 of other income. There is no offset if total other income is $18,200 (as of 2019, indexed by state minimum wage for years after 2019) or less.

Termination Benefits

Any member who terminates employment prior to retirement and has at least 20 years of credited service will be entitled to a pension benefit equal to the normal retirement benefit commencing at age 50.

Any member who terminates employment prior to retirement with fewer than 20 years of credited service will be entitled to a refund of employee contributions without interest.

Refunds: Any member who terminates from their department without receiving a retirement pension shall be refunded all deductions made from his salary, without interest. Any member who receives such a refund and subsequently wishes to reenter (available only if the municipal plan is still open as of such date) the department must repay to the pension fund all sums refunded with interest at the rate of 8% per annum.

Death Benefit Eligibilty

Members are eligible after earning five years of service. There is no years of service requirement if death is service related. Retirees and terminated vested participants are also eligible.

Death Benefit

The benefit is equal to 60% of the participant's benefit, but not less than $300 per month, payable to the spouse until death or remarriage.

Other dependents (children, parents, brothers and sisters) are also eligible for death benefits. To each dependent:

- child: 20% of the participant's benefit until the child attains 18 or marries;
- orphaned child: 25% of the participant's benefit until the child attains 18 or marries;
- parent: 10% of the participant's benefit for life,
- brother or sister: the sum of fifty dollars per month (but a total not to exceed $100 per month) until such individual attains the age of 18 or marries.

The total of all benefits cannot be more than 100% of the participant's salary. In no case shall the payments to the surviving spouse and children be reduced below 65 percent of the total amount paid to all dependents.

Supplemental Benefit (Cost of Living Adjustment – COLA)

All retirees, surviving beneficiaries and disability pensioners are eligible for automatic cost-of-living benefits commencing on the first day of July following two years of retirement. The benefits equal the percentage increase in the Consumer Price Index, limited to 4% (2% for some disability retirees), multiplied by the sum of the allowable amount, which is the first $15,000 of the total annual benefits paid and the accumulated supplemental pension amounts for prior years.

Changes in Plan Provisions Since Prior Valuation

None.

Section VIII. Actuarial Methods and Assumptions

Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal cost method calculated on an individual basis with level percentage of pay normal cost. Past service liability is allocated from the imputed date of hire, taking into account transferred and purchased service.

West Virginia Funding Policies

Under West Virginia Code §8-22-20(c)(1), there are four funding policies available for plan sponsors. Those funding policies are summarized below:

- **Standard Funding Policy:** Employer contributions equal the net employer normal cost, plus an amortization of the unfunded actuarial liability, less the State premium tax allocation applicable to the plan year. The amortization is based on a 40-year closed period from July 1, 1991, using a level dollar amortization (12 years remaining as of July 1, 2019). The Standard funding policy is consistent with generally accepted actuarial standards of practice.

- **Alternative Funding Policy:** Employer contributions equal 107% of the prior year's employer contribution. The Alternative funding policy is not consistent with generally accepted actuarial standards of practice because the policy does not reflect emerging experience gains and losses and may not produce an actuarially sound pattern of contributions or funded ratio. The State premium tax allocation is contributed in addition to the employer contributions.

- **Optional Funding Policy**: Allows plan sponsors using either the Standard funding policy or Alternative funding policy to close the current local Plan to new hires and contribute to the Plan on an actuarially determined basis. The actuarially determined employer contribution is equal to the net employer normal cost, plus a level dollar amortization of the unfunded actuarial liability, less the State premium tax allocation applicable to the plan year. The closed amortization period as of July 1, 2019, is 12 years for sponsors who previously used the Standard funding policy and 30.5 years for sponsors who previously used the Alternative funding policy. Members hired after the adoption date of the Optional funding policy are covered in the statewide pension plan – The Municipal Police Officers and Firefighters Retirement System (MPFRS).

- **Conservation Funding Policy:** Allows plan sponsors using the Alternative funding policy to close the current local Plan to new hires and contribute to the plan on a pay-as-you-go basis. Sponsors using the Conservation funding policy are required to assign a portion of the State premium tax allocation and member contributions to an accumulation account that is projected to grow to 100% of the remaining actuarial liabilities at the end of a 35-year projection period. Members hired after the adoption date of the Conservation funding policy are covered in the statewide pension plan – MPFRS. This policy is not consistent with generally accepted actuarial principles.

This Plan is valued using the Optional funding policy.

Amortization Method

Amortization Policies	
Alternative Plans and former Alternative Plans that selected the Conservation Policy	For GASB 67/68 Accounting: 40-Year Closed Level-Dollar Amortization (from January 1, 2010 – 30.5 years remaining as of July 1, 2019).
Standard Plans and former Standard Plans that selected the Optional Policy	For funding and GASB 67/68 Accounting: 40-Year Closed Level-Dollar Amortization (from July 1, 1991 – 12 years remaining as of July 1, 2019).
Former Alternative Plans that selected the Optional Policy	For funding and GASB 67/68 Accounting: 40-Year Closed Level-Dollar Amortization (from January 1, 2010 – 30.5 years remaining as of July 1, 2019).

Asset Method

Market value.

Projection Methods

The projections of future assets, liabilities, funded status and contributions are based on the following assumptions:

- Compensation will increase and members will leave the active workforce according to the actuarial valuation assumptions.
- For closed group projections, new hires that replace active members who retire, terminate, die or become disabled are not assumed to enter the Plan.
- The sponsor contributes the amount determined by the applicable funding policy each year.
- For plans that are less than 100% funded as of the valuation date, the contribution during the projection period is capped at the amount needed to achieve and maintain a funded status of 100%.
- Assets grow at the assumed rate of return (discount rate).
- Non-vested members receive a refund of their accumulated employee contribution account balance during the year in which they terminate.

Basis for Selection of Actuarial Assumptions

Unless otherwise noted the actuarial assumptions used in the valuation were set by the MPOB on the basis of an actuarial experience study prepared in 2016 covering the period July 1, 2009 through July 1, 2014. Bolton is not responsible for the selection of these assumptions, nor did we advise on the selection of these assumptions. These assumptions are, in the opinion of the actuaries signing this report, reasonable for the intended purpose.

Discount Rate

The following table outlines the factors used to determine the discount rate:

Funded Ratio as of Valuation Date[4]	Liquidity Ratio[5]	Equity Exposure[6]	Projected Funded Ratio after 15 Years[4]	Discount Rate
60% or more	10	50% or more	70% or more	6.5%
40% or more	8	40% or more	60% or more	6.0%
30% or more	6	30% or more	50% or more	5.5%
15% or more	4	N/A	40% or more	5.0%
Less than 15%	N/A	N/A	15% or more	4.5%
Less than 15%	N/A	N/A	Less than 15%	4.0%

As of June 30, 2019	
Assets	$ 4,641,751
Liabilities Using a 6.0% Discount Rate	$ 4,256,346
Funded Ratio	109.05%
Expected Benefit Payments	$ 175,360
Liquidity Ratio	26.5
Equity Exposure	53%
Projected Funded Ratio after 15 Years	111%
Discount Rate	**6.50%**

[4] *Funded ratios based on a 6.0% investment return assumption for plans using an actuarially sound policy (Standard or Optional) and a 5.5% investment return assumption for other plans (Alternative or Conservation).*
[5] *Liquidity ratio equals assets as of the actuarial valuation date divided by expected benefit payments for the year.*
[6] *Based on target allocation percentage outlined in the investment policy.*

Premium Tax Allocation

The premium tax allocation is projected using the following methodology:

(1) The Base Allocation is a fixed amount equal to $8,709,689 in all future years. This amount is allocated to each individual Pension and Relief Fund in proportion to the number of eligible members, which includes active members covered in either the Pension and Relief Fund or the statewide plan, Municipal Police Officers and Firefighters Retirement System ("MPFRS"). We assume that the percentage of eligible members of the Pension and Relief Fund and MPFRS for a single municipal plan (e.g. Oak Hill Police) to the total eligible members for all municipalities remains constant throughout the projection period.

(2) The Excess Allocation is equal to the excess of the current year premium tax assigned to all Pension and Relief Funds over the total Base Allocation. This amount is allocated to each individual Pension and Relief Fund in proportion to the number of eligible active and retired members covered in either the Pension and Relief Fund or the MPFRS.

(3) We have assumed all Pension and Relief Funds will make the minimum statutory contribution requirement and will receive 100% of the total allocation assigned to the individual plan until they are 100% funded. Once a plan attains a funded ratio of at least 100%, the premium tax that would have been allocated to the plan had the funded ratio been lower than 100% is reallocated in subsequent years to all remaining plans that are less than 100% funded.

(4) The total available premium tax allocation, net of expenses, as of September 1, 2020, includes a Base Allocation of $8,709,689, an Excess Allocation of $11,258,890, and an Expired Premium Tax Allocation of $366,419.

(5) For the plan year ending June 30, 2020, all Pension and Relief Funds reported a total of 1,710.82 eligible active members and 2,174.68 eligible retired members. The City of Oak Hill Policemen's Pension and Relief Fund reported 16.08 eligible active members and 6.00 eligible retired members, based on the average number of plan participants for the 12-month period ending June 30, 2020. Since the Fund is over 100% funded as of July 1, 2019, the Fund is not eligible to receive its premium tax allocation of $145,843 for the fiscal year ending June 30, 2021.

(6) The total premium tax allocation is assumed to increase by 2.75% in calendar years ending on and after 2021.

Administrative Expenses

Total administrative expenses for the fiscal year are equal to the expense assumption used for the prior valuation, increased by 2.75% for inflation. We defined our expense assumption based on discussions with MPOB and currently available information. Future expenses are assumed to increase by the general inflation assumption and are adjusted for headcount.

Salary Increases

General Inflation: 2.75% *plus*
Wage Inflation Increment: 1.00% *plus*
Service-based Increase:

Years of Service	Increase
1	20.00%
2	6.50%
3	3.50%
4	2.75%
5-9	2.50%
10-29	2.00%
30-34	1.25%
>34	0.00%

Cost of Living Increase in Benefits

2.75% on first $15,000 of annual benefit and on the accumulated supplemental pension amounts for prior years. Assumed to be payable to all members receiving payments.

Inflation

2.75%, compounded annually.

Mortality

Pre-Retirement

RP-2014 Blue Collar Healthy Employee[7] projected generationally using scale MP-2014 two-dimensional mortality improvement scales.

Post Retirement

RP-2014 Blue Collar Healthy Annuitant projected generationally using scale MP-2014 two-dimensional mortality improvement scales.

For Disabled Participants: RP-2014 Blue Collar Healthy Annuitant set forward four years, projected generationally using scale MP-2014 two-dimensional mortality improvement scales.

Projections with MP-2014 to the valuation date represent current mortality and projections using scale MP-2014 beyond the valuation date represent future mortality improvement.

[7] *Assumes 10% of deaths are duty-related and 90% are non-duty related.*

Termination of Employment

Sample termination rates are as follows:

Age	Rates
25	9%
35	4%
45	2%
50	0%

This assumption is based on an experience study conducted by GRS in 2015.

Retirement Rates

Members need a minimum of 20 years of service in order to be eligible for normal retirement. The sample retirement rates below are for years of service greater than or equal to 20 years of service:

Age	Rates
50	45%
51-55	30%
56-59	35%
60	100.0%

Terminated-vested members (members who terminate employment after attaining 20 years of service but prior to commencing pension benefits) are assumed to retire at age 50.

Disability Rates

Sample disability rates are as follows:

Age	Rates[8]
30	0.22%
40	0.50%
50	0.79%

Marital Status

90% assumed to be married with wives 3 years younger than husbands. Widows are not expected to re-marry in the future.

Non-Vested Terminations

We value non-vested terminations based on the amount of their employee contribution account balance, which is assumed to be paid on the valuation date for current non-vested terminated members and on the termination date for future non-vested terminations.

[8] Assumes that 60% of disabilities are duty related and 40% are non-duty related. Also assumes that 10% of non-duty disabled members receive a 20% reduction in benefits due to gainful employment.

Form of Payment

Benefits are assumed to be paid as a life annuity with a 60% spousal death benefit taking into account the re-indexing of the spouse's supplemental benefit as provided in WV Code §8-22-26a.

Child Beneficiaries

Future survivor widow benefits are loaded by 12% to estimate the impact of benefits provided to survivor children. The load assumes 90% of members are married with two children at time of death, and benefits for each child are paid for approximately 8 years.

Changes in Methods/Assumptions Since Prior Valuation

None.

Section IX. Glossary

Actuarial Accrued Liability (AAL)

The difference between the Actuarial Present Value of Future Benefits and the Actuarial Present Value of Future Normal Costs or the portion of the present value of future benefits allocated to service before the valuation date in accordance with the actuarial cost method. Represents the present value of benefits expected to be paid from the plan in the future allocated to service prior to the date of the measurement.

Actuarial Asset Valuation Method

The method of determining the value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value that recognizes investment gains and losses over a given period of time (rather than immediately) in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially determined contribution (ADC).

Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of Future Benefits and the Actuarial Present Value of Future Normal costs and the Actuarial Accrued Liability. Also known as the “funding method”. Examples of actuarial cost methods include Aggregate, Entry Age Normal, Projected Unit Credit, and Pay-As-You-Go.

Actuarial Present Value of Future Benefits

The actuarial present value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members entitled to either a refund of member contributions or a future retirement benefit. It is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Aggregate Cost Method

An actuarial cost method that spreads the cost of all future benefits in excess of plan assets as a level percentage of future salary or service. The Actuarial Accrued Liability is set to the value of assets in this method.

Annual Determined Contributions of the Employer(s) (ADC)

The employer’s target or recommended periodic contribution to a pension plan, calculated in accordance with assumptions and methods that conform with the Actuarial Standards of Practice. The ADC replaced the annual required contribution (ARC)when GASB 27 was replaced by GASB 68.

Cost-of-Living-Adjustment (COLA)

A periodic increase in the amounts calculated using the plan’s basic benefit formula to account for the future effects of inflation which reduce the purchasing power of the calculated benefits.

Covered Group

Plan members included in actuarial valuation.

Demographic Assumptions
Assumptions regarding the future population of pension participants, including retirement, termination, disability and mortality assumptions. Demographic assumptions also include those relating to merit pay increases, marital status, and new hires.

Economic Assumptions
Assumptions regarding future economic factors, including inflation, investment returns, COLA, salary improvement, change in average wages, and changes in Social Security benefits.

Employer's Contributions
Contributions made in relation to the ADC. An employer has made a contribution in relation to the ADC if the employer has (a) made payments of benefits directly to or on behalf of a retiree or beneficiary, (b) made premium payments to an insurer, or (c) irrevocably transferred assets to a trust, or an equivalent arrangement, in which plan assets are dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan and are legally protected from creditors of the employer(s) or plan administrator.

Entry Age Normal (EAN) Cost Method
An actuarial cost method that spreads the cost for each individual's expected benefits over their career, either as a level percentage of pay or service. The Actuarial Accrued Liability is the accumulated value of all past normal costs, and the unfunded accrued liability (surplus) is the excess of the Actuarial Accrued Liability over the value of assets.

Expenses
Plan expenses paid from the plan's assets (rather than directly by the employer) are divided into administrative and investment-related expenses.

Funded Ratio
The actuarial value of assets expressed as a percentage of the plan's Actuarial Accrued Liability.

GASB
Government Accounting Standards Board.

GASB No. 67 and GASB No. 68
These are the government accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems while Statement No. 67 sets the rules for the systems themselves.

Investment Return Assumption or Investment Rate of Return (Discount Rate)
The assumed rate of future investment earnings on the plan's assets, reflecting the current investment policy and expected future economic conditions. This rate is used to adjust, or discount, a series of future payments to reflect the time value of money and show future amounts in today's dollars.

Level Dollar Amortization Method
Amortization payments are calculated so that they are a level dollar amount over a given number of years.

Level Percentage of Projected Payroll Amortization Method
Amortization payments are calculated so that they are a constant percentage of the projected payroll of active plan members over a given number of years. The dollar amount of the payments generally will increase over time as payroll increases due to inflation. In dollars adjusted for inflation, the payments can be expected to remain level (disregarding changes due to future actuarial experience differing from expectations).

Normal Cost
That portion of the Actuarial Present Value Future Benefits and expenses which is allocated to a valuation year by the actuarial cost method.

Payroll Growth Rate
An actuarial assumption with respect to future increases in total covered payroll attributable to inflation; used in applying the level percentage of projected payroll amortization method.

Plan Members
The individuals covered by the terms of a pension plan. The plan membership generally includes employees in active service, terminated employees who have accumulated benefits but are not yet receiving them, and retired employees and beneficiaries currently receiving benefits.

Post-Employment
The period between termination of employment and retirement as well as the period after retirement.

Salary Improvement
An actuarial assumption regarding the increase in employees' salaries, reflecting cost-of-living, merit and longevity increases.

Supplemental Benefits
Benefits that accumulate after a member's retirement based on an annual COLA increase in the amount of a retired participant's benefit intended to adjust the benefit for inflation.

Unfunded Actuarial Accrued Liabilities
The excess of the Actuarial Present Value of Future Benefits as of the date of a pension plan valuation, over the sum of (1) the actuarial value of the assets of the plan and (2) the Actuarial Present Value of Future Normal Costs determined by any of several actuarial cost methods. For plans that explicitly define an Actuarial Accrued Liability, this amount equals the excess of the Actuarial Accrued Liability over the actuarial value of assets.

Vested Plan Benefits
All benefits to which current participants have a vested right based on pay and service through the valuation date. A participant has a vested right to a benefit if he/she would still be eligible to receive that benefit if employment terminated on the valuation date.