

# Municipal Policemen's and Firemen's Pension and Relief Funds of West Virginia

Consolidated Actuarial Valuation Report for the Year  
Beginning July 1, 2016



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December 6, 2017

Mr. Blair Taylor  
Executive Director  
West Virginia Municipal Pensions Oversight Board  
301 Eagle Mountain Road, Suite 251  
Charleston, West Virginia 25311

**Subject: Consolidated Actuarial Valuation Report for the Year Beginning July 1, 2016**

Dear Mr. Taylor:

Upon the request of the Municipal Pensions Oversight Board, we performed an actuarial valuation as of July 1, 2016, for each of the Municipal Policemen's and Firemen's Pension and Relief Funds ("the Funds") in the State of West Virginia. These actuarial valuations have been performed in accordance with the West Virginia Code Chapter 8, Article 22, Sections 16 through 28, inclusive. This consolidated report summarizes the results of the 53 individual Actuarial Valuations.

The primary purpose of the actuarial valuation is to assess the adequacy of the funding policy currently in use by each participating Fund as defined in West Virginia Code §8-22-20, which states the "minimum standard for actuarial soundness." The assessment of the adequacy of the current funding policy was based on individual actuarial valuations as of July 1, 2016, for each participating Fund and the actuarial valuations performed in 13 prior plan years. The four statutory funding policies currently available to Plan Sponsors include the Standard funding policy as defined in West Virginia Code §8-22-20(c)(1), the Alternative funding policy as defined in West Virginia Code §8-22-20(c)(1), the Optional funding policy as defined in West Virginia Code §8-22-20(e), and the Conservation funding policy as defined in West Virginia Code §8-22-20(f).

The individual actuarial valuations were performed using a consistent and uniform set of actuarial assumptions and methods in order to establish a basis for comparing the actuarial soundness of the Funds. West Virginia Code §8-22-20(c)(4) requires (1) a review of the actuarial assumptions and methods at least once every five years and (2) a report by the actuary to the oversight board with recommendations on any changes to the actuarial process. Such a review was performed for the period July 1, 2009, through June 30, 2014. The assumptions and methods developed in that review were (1) recommended by the actuary in the report *2016 Experience Review for the Years July 1, 2009, to July 1, 2014*, (2) approved by the Municipal Pensions Oversight Board, and (3) first applied in the July 1, 2015, actuarial valuation cycle.

This consolidated report also reviews, for Plan Sponsors currently using the Standard funding policy, the impact of switching to the Optional funding policy and for Plan Sponsors currently using the Alternative funding policy, the impact of switching to either the Optional funding policy or the Conservation funding policy.

We did not review the investment policy or the administrative practices of the individual pension Funds.

Each actuarial valuation is based upon:

**Asset Values** – Reconciliation of the market value of assets during the plan year ending June 30, 2016, and the market value of assets held as of June 30, 2016, by investment category, as provided by the sponsor of each participating Fund.

**Plan Provisions** – A summary of the key plan provisions valued is set forth in Section VII of the report: Summary of Principal Funding Policies and Plan Provisions.

**Actuarial Methods** – Fund liabilities were measured using the Entry-Age Normal Actuarial Cost Method. The actuarial valuations were based on the market value of assets. The actuarial methods used in the valuation are set forth in Section VI of the report: Actuarial Assumptions and Methods.

**Actuarial Assumptions** – The actuarial assumptions used in the valuations are set forth in Section VI of the report: Actuarial Assumptions and Methods.

The actuarial valuation results disclosed in this report are based on (1) plan membership data and asset values provided by each of the individual plan sponsors, (2) actuarial assumptions and actuarial methods described in Section VI of this report, and (3) the provisions of the Funds as defined in the West Virginia Code Chapter 8, Article 22, Sections 16 through 28, inclusive. Based on these items, we certify these results to be true and correct.

To the best of our knowledge, this actuarial statement is complete and accurate, and has been prepared in accordance with generally accepted actuarial principles and practices.

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.



This report should not be relied on for any purpose other than the purpose stated.

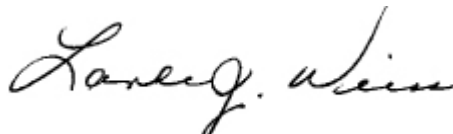
The signing actuaries are independent of the plan sponsor.

Alex Rivera and Lance J. Weiss are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

Respectfully yours,



Alex Rivera, FSA, EA, MAAA, FCA  
Senior Consultant



Lance J. Weiss, EA, MAAA, FCA  
Senior Consultant

## **SECTION I**

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### **EXECUTIVE SUMMARY**

# Executive Summary

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Upon the request of the Municipal Pensions Oversight Board (“MPOB”), we performed an actuarial study as of July 1, 2016, of the Municipal Policemen’s and Firemen’s Pension and Relief Funds (“the Funds”) of West Virginia. The primary objective of the study is to perform individual actuarial valuations for each Fund in order to provide each plan sponsor information on:

- The funding requirements for fiscal year ending June 30, 2018;
- The Fund’s eligibility to receive an allocation of the premium tax for fiscal year ending June 30, 2018;
- The Fund’s eligibility to provide Supplemental Benefits for the plan year beginning July 1, 2018, and;
- The advantages and disadvantages of switching to one of the available funding policy options, including the Optional funding policy and Conservation funding policy as defined in West Virginia Code §8-22-20.

The individual actuarial valuation reports have been delivered to each plan sponsor. Appendix B contains a summary of the key actuarial valuation results for each Fund.

Another objective of the study is to review the overall adequacy of the current and available funding policies. For this purpose, we reviewed the actuarial valuations as July 1, 2016, actuarial projections of the current and available funding policy options, and historical actuarial valuation results.

The four funding policies available to plan sponsors are summarized below:

- West Virginia Code §8-22-20(c)(1) defines the Standard funding policy. Under this 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 (15 years remaining as of July 1, 2016). The Standard funding policy is consistent with generally accepted actuarial standards of practice.
- West Virginia Code §8-22-20(c)(1) defines the Alternative funding policy. Under this 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.
- West Virginia Code §8-22-20(e)(1) defines the Optional funding policy, which allows plan sponsors, using either the Standard funding policy or Alternative funding policy, to close the current local Plan, and finance obligations on an actuarially determined basis as follows: The actuarially determined employer contribution is equal to 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 closed amortization period as of July 1, 2016, is 15 years for sponsors who previously used the Standard funding policy and 33.5 years for sponsors who previously used

## Executive Summary

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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.

- West Virginia Code §8-22-20(f)(1) defines the Conservation funding policy, which allows plan sponsors using the Alternative funding policy, to close the current local Plan, and finance obligations 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 – the Municipal Police Officers and Firefighters Retirement System.

The details of the Standard, Alternative, Optional, and Conservation funding policies are presented in Section VII of the report.

The discount rate assumption was developed by reviewing the Plan’s current funded ratio, the 15-year projected funded ratio, the ratio of assets to benefits, the percentage of assets allocated to equities and the funding policy selected. The change in interest rate used to discount liabilities remained the same for most plans.

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

<b>Funded Ratio as of Valuation Date <sup>1</sup></b>	<b>Liquidity Ratio <sup>2</sup></b>	<b>Equity Exposure <sup>3</sup></b>	<b>Projected Funded Ratio after 15 Years <sup>1</sup></b>	<b>Discount Rate</b>
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%

<sup>1</sup> 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).

<sup>2</sup> Liquidity ratio equals assets as of the actuarial valuation date divided by expected benefit payments for the year.

<sup>3</sup> Based on investment policy.

The key findings of the actuarial study include:

- Standard plans (five plans as of July 1, 2016) or former Standard plans that selected the Optional funding policy (10 plans as of July 1, 2016) are projected to be 100% funded by the end of the 15-



## Executive Summary

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year projection period. This contribution policy is consistent with generally accepted actuarial standards of practice.

- As of July 1, 2016, 11 former Alternative plans have selected the Optional funding policy. These plans are projected to be fully funded as of 2050. This group includes two very large underfunded plans.
- As of July 1, 2016, two former Alternative plans have selected the Conservation funding policy. This policy may provide near-term contribution relief; however, because the contributions are based on pay-as-you-go funding, the contributions could be more volatile.
- In general, the Alternative funding policy produces contributions that grow at an annual rate of 7%, which is 3.25 percentage points higher than the assumed wage inflation assumption of 3.75%. This policy produces an ever-increasing contribution pattern for which it may be difficult to budget. As of July 1, 2016, 25 of the 53 plans are still using the Alternative funding policy.
- Weirton Firemen's Pension and Relief Fund closed their plan to new entrants during fiscal year end 2016. This plan is financed using the Optional funding policy as of July 1, 2016, a change from the Alternative funding policy as of July 1, 2015.
- At the end of 30 years, only 6 out of 25 Alternative plans are projected to have contribution rates that are less than 40% of pay, and only one alternative plan is projected to never have a contribution rate exceeding 40% of pay. Also after 30 years, only 9 out of 26 Alternative plans are projected to have funded ratios that exceed 80%.
- One key concern of the Alternative funding policy is the level of required annual contributions relative to the net employer normal cost and amortization of the unfunded actuarial liability. A sound funding policy generally finances, on an annual basis, the normal cost plus a portion, generally 6% or more of the unfunded actuarial liability.

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The following table shows a distribution of FY 2018 and projected FY 2038 Alternative funding policy contributions, made by the sponsor and State, expressed in terms of the net normal cost plus a percentage of the unfunded actuarial liability.

Employer Contributions Plus State Premium Tax Allocation	Number of Alternative Plans Satisfying Conditions in	
	FY 2018	FY 2038
80% to 90% of the Net Normal Cost	3	0
90% to 100% of the Net Normal Cost	3	0
100% of Net Normal Cost plus 0% to 2% of Unfunded Actuarial Liability	11	9
100% of Net Normal Cost plus 2% to 4% of Unfunded Actuarial Liability	5	4
100% of Net Normal Cost plus 4% to 6% of Unfunded Actuarial Liability	2	2
100% of Net Normal Cost plus 6% or more of Unfunded Actuarial Liability (Sound Policy)	1	10

- In fiscal year 2018, only one of the 25 Alternative plans, Star City Policemen’s Pension and Relief Fund, is expected to be contributing at a level that approximates a sound funding basis. This increases to ten out of the 25 Alternative plans when we look at projected contributions in Fiscal Year 2038. (However, that takes into account 20 years of 7% increases in the annual contribution requirement.)
- For purposes of evaluating the Optional and Conservation funding policies, we performed open group projections for Standard and Alternative plans, and assumed the sponsor would select either the Optional or Conservation funding policy in the year that employer contributions are lower under these policies. Based on this rule, all Standard plans would experience a reduction in employer contribution if the Optional funding policy was adopted in FY 2018. This occurs because the net employer normal cost rate for the local plan is higher than the statutory contribution rate of 8.5% to 10.5% of pay under the Municipal Police Officers and Firefighters Retirement System.

## Executive Summary

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- For the Alternative plans, the year that Optional or Conservation funding policy contributions are lower was not as apparent. The following table shows the year when contributions under the Optional or Conservation funding policy are expected to be lower than contributions under the Alternative funding policy:

Year Municipality Contributions are lower	Number of Alternative Plans	
	If Optional Policy is selected	If Conservation Policy is selected
2018	1	7
2019	0	0
2020 to 2029	2	7
2030 to 2039	3	5
2040 to 2050	3	6
Never	16	0

- This table shows that only one Alternative plan is projected to receive immediate contribution relief if the Optional funding policy is selected in 2018. This table also shows that seven Alternative plans are projected to receive immediate contribution relief if the Conservation funding policy is selected in 2018.
- The Optional funding policy is based on sound actuarial principles and is projected to produce a reasonable pattern of contributions and funded ratios. The Conservation funding policy depends on the level of actual retirements and benefit payments made during the year, and could produce significant contribution volatility for the sponsor. The volatility is even greater for smaller plans that have fewer active members. For example, one or two unexpected retirements could significantly increase the sponsor’s contribution.
- The Optional and Conservation funding policies may not be viable options for many of the Alternative plans. In addition, we strongly encourage plan sponsors to consider not only the affordability of the funding policy but also the projected patterns of contributions and funded ratios in future years.
- Sponsors using the Alternative funding policy may want to consider making additional contributions in excess of the statutory minimum to ensure a reasonable pattern of growth in the funded ratio.
- Certain plans satisfied the minimum standard for “actuarial soundness” or “solvency” as defined in the statutes. We understand that the minimum requirement to satisfy the statutory solvency

## Executive Summary

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test includes a demonstration that assets are projected to be greater than zero over a 15-year period. However, a plan could satisfy the minimum statutory standard for solvency during the first 15 years and may either (i) run out assets after the initial 15-year period, or (ii) have very low funded ratios during the projection period. We recommend that such plans make additional contributions over the statutory minimum requirement.

- The solvency projections assume the sponsor will make the minimum statutory requirement. However, a few plans have a history of making less than the statutory minimum and have forfeited State contributions provided through the premium tax allocation. For such plans, we recommend projecting sponsor contributions for purposes of the 15-year solvency test, based on the sponsor's recent experience, unless the sponsor has adopted a formal policy to correct the statutory funding deficiency.
- The Plans in the aggregate experienced unfavorable assets returns during plan the year end June 30, 2016. The average annual return was 1.3% compared to the average annual assumed return of 5.1%.

Other observations include:

- Our actuarial valuations assume the sponsor is required to contribute at least the normal cost in order to receive the State premium tax allocation. Two plans with a funded ratio in excess of 100% as of July 1, 2016, are projected to experience an increasing funded ratio. At some point, the sponsor may no longer need additional contributions. For example, a plan that is at least 125% funded on a present value of future benefit basis, may have a sufficient cushion for future adverse experience. The following two plans have funded ratios above 100% as of July 1, 2016:
  - Oak Hill Policemen's Pension and Relief Fund
  - Welch Policemen's Pension and Relief Fund
- One of the key factors used to set the discount rate is the percentage of assets allocated to equities. If available, we used the target equity asset allocation contained in the Plan's investment policy. Otherwise, we used the percentage of assets invested in equities as of the valuation date. Our preference is to use the target allocation in the investment policy. We strongly encourage that all plans provide a copy of their investment policy.
- The discount rate increased for five plans:
  - Bluefield Policemen's Pension and Relief Fund
  - Clarksburg Firemen's Pension and Relief Fund
  - Elkins Firemen's Pension and Relief Fund
  - Nitro Policemen's Pension and Relief Fund
  - Weirton Firemen's Pension and Relief Fund
- The discount rate decreased for one plan:
  - Logan Policemen's Pension and Relief Fund

## Executive Summary

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- Two plans need additional employer contributions to satisfy the 15-year solvency test:
  - Weirton Policemen’s Pension and Relief Fund
  - St. Albans Firemen’s Pension and Relief Fund
- As of June 30, 2016, two plans have members participating in the Deferred Retirement Option Plan (DROP):
  - St. Albans Firemen’s Pension and Relief Fund
  - Wheeling Firemen’s Pension and Relief Fund
- GASB Statement No. 67 replaced GASB Statement No. 25 for pension plan financial reporting requirements (effective in fiscal year ending June 30, 2014) and GASB Statement No. 68 replaced GASB Statement No. 27 for employer financial reporting (effective in fiscal year ending June 30, 2015). For plans that are projected to have zero assets in the future, on a closed group basis, the discount rate used for GASB Statement Nos. 67 and 68 financial reporting purposes will be based on a blended rate of the long-term investment return rate and a 20-year tax-exempt municipal bond index rate. Under the new accounting standards, the unfunded actuarial liability will need to be recognized on the plan sponsor’s balance sheet. The new accounting standards will not impact the current contribution policies. GRS will be providing a separate GASB Statement Nos. 67 and 68 report to each plan sponsor.

The remainder of the report provides additional details supporting the preceding findings and observations.

## **SECTION II**

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### **ACTUARIAL VALUATION RESULTS**

# Actuarial Valuation Results

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## Actuarial Valuation Results as of July 1, 2016

### Actuarial Valuation Methodology

- Individual actuarial valuations as of July 1, 2016, were performed for each Fund that participated in the study. We received usable census and asset information for all 53 Funds in the State. The table on page II-9 shows a summary of the key actuarial valuation results as of July 1, 2016, for the participating Funds. The results are broken out among Funds that have elected the Standard, Alternative, Optional or Conservation funding policies.
- The actuarial valuations were based on assumptions and methods recommended by GRS, in the report *2016 Experience Review for the Years July 1, 2009, to July 1, 2014*, and approved by the Municipal Pensions Oversight Board.
- A gain/loss analysis of changes in assets and liabilities from the previous valuation was performed. In addition, the actuarial projections from the current valuation were analyzed and trends were reviewed.
- Actuarial projections (40-year open group) were performed assuming the employer would make contributions under the funding policy selected by the Plan sponsor – either the Standard funding policy, the Alternative funding policy, the Optional funding policy or the Conservation funding policy.
- The key indicators used to assess the funding adequacy were the funded ratio and the employer contribution expressed as a percentage of payroll. The funded ratio is defined as the market value of assets divided by the actuarial accrued liability. In our opinion, a Fund that has a funded ratio of less than 70% or a required contribution rate in excess of 30% of payroll could be at financial risk of not being sustainable at some point in the future – i.e., not being able to pay the promised benefits, or of having a contribution requirement that is too large to be affordable.

### Key findings for Plans using the Standard Funding Policy

- Five plans, (or about 9.4% of all 53 participating Funds), covering only 1.8% of plan participants, and 1.1% of total liabilities are financed using the Standard funding policy.
- For Funds using the Standard funding policy, the funded ratios as of July 1, 2016, range from 30% to 73%.
- Four Funds using the Standard funding policy are open to new entrants. For these four Funds, the employer contribution rates range from 21% to 38% of payroll for fiscal year end 2017 and 35% to 60% of payroll for fiscal year end 2018. The average employer contribution rate is 31% of payroll for fiscal year end 2017 and 42% of payroll for fiscal year end 2018.

## Actuarial Valuation Results

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- For the one Fund using the Standard funding policy that is closed to new entrants, the employer contribution rate is 76% of expected benefit payments for fiscal year end 2017, and 78% of expected benefit payments for fiscal year end 2018.
- The average funded ratio for all Standard plans is 59%. The unfunded actuarial accrued liability for Funds using the Standard funding policy is approximately \$7.1 million or 0.6% of the total unfunded liabilities for all Funds.
- On a projected basis, the funded ratio for all Funds using the Standard funding policy increases steadily and approaches 100% by 2031 (as required by State Statutes). In addition, the projected contribution rates are generally level or decline steadily. These relationships are a direct consequence of the funding method and are consistent with the historical actuarial valuation results.

### Key findings for Plans using the Alternative Funding Policy

- Twenty-five plans (or about 47.2% of all 53 participating Funds), covering 50.0% of plan participants, are financed using the Alternative funding policy.
- The average employer contribution rate is 37% of payroll for FY 2017 and 37% of payroll for FY 2018.
- The average funded ratio is only 21%. The unfunded actuarial accrued liability for Funds using the Alternative policy is approximately \$571 million or 48.7% of the total unfunded liabilities for all Funds.
- After 30 years only 9 out of 25 Alternative Plans are projected to be at least 80% funded.

### Key findings for Plans that switched from the Alternative Funding Policy to the Optional Funding Policy

- Eleven plans that were previously using the Alternative funding policy (or about 20.8% of all 53 participating Funds), covering 26.6% of plan participants, are now financed using the Optional funding policy.
- The average employer contribution rate is 106% of payroll for FY 2017 and 109% of payroll for FY 2018.
- The average funded ratio is only 30%. The unfunded actuarial accrued liability for these Funds is approximately \$266 million or 22.6% of the total unfunded liabilities for all Funds.
- Under the Optional funding policy, all plans that switched from Alternative funding policy are by definition projected to be 100% funded by the end of the amortization period in 40 years. However, the funded ratios will increase at a very slow rate for many years which leave the plans vulnerable if there is another significant market downturn.



# Actuarial Valuation Results

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- Contributions to the closed local plans are projected to decrease in future years as new hires enter the Municipal Police Officers and Firefighters Retirement System.

## Key findings for Plans that switched from the Standard Funding Policy to the Optional Funding Policy

- Ten plans, (or about 18.9% of all 53 participating Funds), covering only 2.5% of plan participants, and 1.8% of total liabilities are financed using the Optional funding policy that switched from the Standard funding policy.
- The average employer contribution rate is 63% of payroll for FY 2017 and 59% of payroll for FY 2018.
- The average funded ratio for these ten plans is 69% and the unfunded actuarial accrued liability is approximately \$8.6 million or 0.7% of the total unfunded liabilities for all Funds.
- On a projected basis, the funded ratio for these Funds increases steadily and approaches 100% by 2031 (as required by State Statutes). In addition, the projected contribution rates are generally level or decline steadily. These relationships are a direct consequence of the funding method and are consistent with the historical valuation results.

## Key Findings for Plans using the Conservation Funding Policy

- Two plans (or about 3.8% of all 53 participating Funds), covering 19.1% of plan participants, are financed using the Conservation funding policy.
- The average employer contribution rate is 85% of payroll for FY 2017 and 88% of payroll for FY 2018.
- The average funded ratio is only 9.1%. The unfunded actuarial accrued liability for Funds using the Conservation funding policy is approximately \$321 million or 27.4% of the total unfunded liabilities for all Funds.
- Employer contributions will be used directly to pay benefits not covered by member contributions or the premium tax allocation. As such, employer contributions for sponsors currently using the Conservation funding policy plans are projected to increase each year for the next 20 years as projected benefit payments increase.
- The Conservation funding policy defers contributions and produces virtually no significant growth in the funded ratio until the last 10 years of the projection period. This policy is not consistent with generally accepted actuarial principles.

## Historical Comparison of Funded Ratios and Contribution Rates by Funding Policy

Funds using the Alternative funding policy, in general, have much lower funded ratios, when compared to Funds using the Standard funding policy. The following tables compare the historical averages of funded ratios and contributions rates at each respective valuation date:

## Actuarial Valuation Results

Funded Ratio As of July 1	Standard Policy Plans		Alternative Policy Plans		Optional Policy Plans From Standard		Optional Policy Plans From Alternative		Conservation Policy Plans	
	Number	Average	Number	Average	Number	Average	Number	Average	Number	Average
2016	5	59%	25	21%	10	69%	11	30%	2	9%
2015	5	62%	26	22%	10	67%	10	28%	2	9%
2014	5	67%	28	26%	10	71%	8	29%	2	9%
2013	8	55%	31	25%	7	70%	5	23%	2	8%
2012	8	47%	31	23%	7	63%	5	20%	2	7%
2011	9	50%	31	24%	6	62%	5	18%	2	7%

As of the July 1, 2016 actuarial valuation, 10 Standard plans selected the Optional funding policy, 11 Alternative plans selected the Optional funding policy and two Alternative plans selected the Conservation funding policy.

Employer Contribution Rate <sup>2</sup> For FY Beginning July 1	Standard Policy Plans		Alternative Policy Plans		Optional Policy Plans From Standard		Optional Policy Plans From Alternative		Conservation Policy Plans	
	Number	Average <sup>1</sup>	Number	Average	Number	Average	Number	Average	Number	Average
2017	4	45%	25	37%	10	59%	11	109%	2	88%
2016	4	37%	25	37%	10	63%	11	106%	2	85%
2015	4	28%	26	35%	10	49%	10	86%	2	73%
2014	4	36%	28	34%	10	43%	8	88%	2	67%
2013	7	47%	31	36%	7	44%	5	101%	2	53%
2012	7	42%	31	33%	7	36%	5	95%	2	50%
2011	8	51%	31	32%	6	47%	5	97%	2	49%

<sup>1</sup> One outlying Standard funding policy Fund, excluded from this table, is closed to new employees, has six members in payment status, no active members and no payroll.

<sup>2</sup> As a percentage of payroll.

- Sponsors using the Standard funding policy and former Standard plans that selected the Optional funding policy are required to contribute the net normal cost plus a 15-year (from July 1, 2016) closed level dollar amortization of the unfunded actuarial liability. By definition, these Funding Policies produce a projected funded ratio of 100% at the end of 15 years and are consistent with generally accepted actuarial standards of practice.
- Because the net employer normal cost rate for Standard plans (generally around 26% of pay) is higher than the statutory contribution rate of 8.5% to 10.5% of pay under the Municipal Police Officers and Firefighters Retirement System, all Standard plans would experience a reduction in employer contributions if the Optional funding policy was adopted, with no significant impact to the funded ratio. In fact, ten Standard plans recognized this relationship and converted from the Standard funding policy to the Optional funding policy prior to the July 1, 2016, actuarial valuation.

## Actuarial Valuation Results

- Sponsors using the Alternative funding policy are required to contribute 107% of the prior year’s contribution. The Alternative funding policy is not consistent with generally accepted actuarial standards of practice because the policy does not reflect emerging gains and losses and may not produce an actuarially sound pattern of contributions and funded ratio. As a direct result of this funding policy, Alternative plans are on average less than half as well funded as Standard plans.
- Unlike Standard plans, Alternative plans are generally not expected to receive immediate contribution relief from switching to the Optional funding policy because the Alternative funding policy contributions in many cases are considerably lower than the actuarially based contributions defined under the Optional policy. However, plan sponsors currently using the Alternative funding policy may find it more affordable in the long run to switch to the Optional funding policy even if it means an increase in the employer contributions in the short term.
- As an alternative to switching to the Optional funding policy, sponsors of Alternative plans may want to consider making additional contributions in excess of the statutory minimum to ensure a reasonable pattern of growth in the funded ratio.
- Standard plans and former Standard plans that have selected the Optional funding policy are projected to be 100% funded by the end of the 15-year amortization period in 2031. Under the Alternative funding policy, only 1 plan, Star City Policemen’s Pension and Relief Fund, is projected to be fully funded by 2031.
- The following table compares the percentage of funds that are projected to be fully funded by 2031 for each historical valuation:

Valuation As of July 1	Percentage of Plans that are Projected to be Fully Funded by 2031				
	Standard	Alternative	Optional from Standard	Optional from Alternative <sup>a</sup>	Conservation
2016	100%	4%	100%	0%	0%
2015	100%	4%	100%	0%	0%
2014	100%	18%	100%	13%	0%
2013	100%	19%	100%	0%	0%
2012	100%	10%	100%	0%	0%
2011	100%	10%	100%	20%	0%

<sup>a</sup> Former Alternative plans that selected the Optional funding policy are projected to be fully funded by 2050.

## Actuarial Valuation Results

### Comparison of Historical Actuarial Valuation Results

The following table compares basic historical data for plans that have participated in the actuarial valuation studies. Pay has historically decreased slightly over the last four actuarial valuation cycles, and total benefits paid have increased by approximately 3% to 4% per year.

(\$ in Millions)	2016	2015	2014	2013	2012
Participating Plans	53	53	53	53	53
Payroll	\$76.2	\$76.4	\$77.8	\$78.6	\$80.1
Benefits Paid	\$64.1	\$62.0	\$59.5	\$57.9	\$56.1

The following table compares historical actuarial information. The key observation is that the 2016 funded ratio and normal cost rate remained approximately the same from 2015.

(\$ in Millions as of July 1)	2016	2015	2014	2013	2012
Assets	\$329.4	\$321.2	\$308.0	\$272.3	\$245.6
Liability	\$1,503.8	\$1,481.5	\$1,272.9	\$1,258.9	\$1,243.9
Funded Ratio	22%	22%	24%	22%	20%
Net Employer Normal Cost % of Pay	41%	41%	29%	29%	30%

The following table compares historical contributions. The employer contribution rates have increased primarily because contributions under the Alternative funding policy increase at an annual rate of 7% while payroll has increased by between approximately 3% to 6% annually. The State contributions depend on the premium volume for property casualty insurance.

(Plan year beginning July 1) (\$ in Millions)	2017	2016	2015	2014	2013
Net Employer Contributions	\$48.2	\$46.7	\$41.2	\$41.1	\$39.6
(% of Pay)	62%	61%	54%	53%	50%
State Premium Tax Allocation	\$18.2	\$17.7	\$16.8	\$16.5	\$15.9
(% of Pay)	23%	23%	22%	21%	20%

## Actuarial Valuation Results

The following table compares the funded ratios and the employer contribution rates under the various funding policies. In general, some funded ratios changed due to economic and/or demographic experience. The changes in funded ratios and contribution rates were also impacted by plans that switched from either the Alternative or Standard funding policy to the Optional funding policy. During the plan year ended June 30, 2016, one Alternative plan and no Standard plans switched to the Optional funding policy.

<b>Funded Ratio as of July 1</b> <b>(\$ in Millions)</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
- Standard Plans	NA	59%	62%	67%	55%
- Alternative Plans	NA	21%	22%	26%	25%
- Optional from Standard	NA	69%	67%	71%	70%
- Optional from Alternative	NA	30%	28%	29%	23%
- Conservation Plans	NA	9%	9%	9%	8%
<b>Contributions Rates % of Pay</b> <b>(Plan year beginning July 1)</b>					
- Standard Plans	45%	37%	28%	36%	47%
- Alternative Plans	37%	37%	35%	34%	36%
- Optional from Standard	59%	63%	49%	43%	44%
- Optional from Alternative	109%	106%	86%	88%	101%
- Conservation Plans	88%	85%	73%	67%	53%

The details of the historical actuarial valuations are shown on pages II-10 and Appendix A in Section VIII. A gain/loss analysis, reconciling the unfunded liability from June 30, 2015 to June 30, 2016, is shown on pages II-11 and II-12. During the plan year ending June 30, 2016, the Funds in the aggregate experienced an investment return on the market value of assets of approximately 1.3%, which compares to an expected return of approximately 5.1%. The table on the following page compares the contribution requirements between the FYE 2017 and FYE 2018.

## Actuarial Valuation Results

	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans <sup>a</sup>
Participating Plans	5	25	10	11	2	53
<b>FYE 2017 Contributions</b>						
Employer Contributions <sup>a</sup>	\$644,224	\$15,381,727	\$1,157,262	\$17,738,072	\$11,774,156	\$46,695,441
State Premium Tax Allocation	\$348,114	\$8,651,448	\$624,756	\$4,709,738	\$3,409,013	\$17,743,069
Employee Contributions	\$125,795	\$3,517,682	\$152,409	\$1,169,186	\$1,149,444	\$6,114,516
<b>FYE 2018 Contributions</b>						
Employer Contributions <sup>a</sup>	\$808,184	\$16,240,789	\$1,061,047	\$17,862,312	\$12,202,524	\$48,174,856
State Premium Tax Allocation	\$349,785	\$8,979,407	\$653,730	\$4,733,319	\$3,472,770	\$18,189,011
Employee Contributions	\$140,964	\$3,615,735	\$139,397	\$1,219,821	\$1,113,194	\$6,229,111

<sup>a</sup> For plans under the Alternative funding policy, includes any additional contributions required to satisfy both 15-year solvency tests.

# Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2016

	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans <sup>a</sup>
<b>Participating Plans</b>	5	25	10	11	2	53
<b>Plan Membership</b>						
(a) Actives	38	846	40	339	239	1,502
(b) Annuitants	27	987	53	629	458	2,154
(c) Inactives	0	10	0	11	6	27
(d) Total	65	1,843	93	979	703	3,683
Payroll	\$1,722,068	\$41,906,201	\$1,838,931	\$16,790,477	\$13,914,926	\$76,172,603
Expected Benefit Payments	\$733,253	\$29,030,022	\$1,299,184	\$18,500,450	\$14,498,134	\$64,061,043
<b>Actuarial Accrued Liabilities</b>						
(a) Actives	\$8,008,341	\$260,034,823	\$9,458,903	\$112,192,511	\$108,607,370	\$498,301,948
(b) Annuitants	\$9,169,509	\$458,352,014	\$18,202,799	\$263,109,418	\$240,239,843	\$989,073,583
(c) Inactives	\$0	\$5,836,562	\$0	\$5,900,245	\$4,682,522	\$16,419,329
(d) Total Liabilities	\$17,177,850	\$724,223,399	\$27,661,702	\$381,202,174	\$353,529,735	\$1,503,794,860
Market Value of Assets	\$10,127,704	\$152,878,977	\$19,053,180	\$115,237,754	\$32,107,937	\$329,405,552
Unfunded Liability	\$7,050,146	\$571,344,422	\$8,608,522	\$265,964,420	\$321,421,798	\$1,174,389,308
Funded Ratio	59%	21%	69%	30%	9%	22%
Net Employer Normal Cost (% of Payroll)	\$451,236 26%	\$18,168,814 43%	\$567,352 31%	\$6,032,613 36%	\$6,258,019 45%	\$31,478,034 41%
<b>FYE 2017 Contributions</b>						
Employer Contributions <sup>b</sup> (% of Payroll)	\$644,224 37%	\$15,381,727 37%	\$1,157,262 63%	\$17,738,072 106%	\$11,774,156 85%	\$46,695,441 61%
State Premium Tax Allocation (% of Payroll)	\$348,114 20%	\$8,651,448 21%	\$624,756 34%	\$4,709,738 28%	\$3,409,013 24%	\$17,743,069 23%
Employee Contributions (% of Payroll)	\$125,795 7.3%	\$3,517,682 8.4%	\$152,409 8.3%	\$1,169,186 7.0%	\$1,149,444 8.3%	\$6,114,516 8.0%
<b>FYE 2018 Contributions</b>						
Employer Contributions <sup>b</sup> (% of Payroll)	\$808,184 45%	\$16,240,789 37%	\$1,061,047 59%	\$17,862,312 109%	\$12,202,524 88%	\$48,174,856 62%
State Premium Tax Allocation (% of Payroll)	\$349,785 20%	\$8,979,407 21%	\$653,730 36%	\$4,733,319 29%	\$3,472,770 25%	\$18,189,011 23%
Employee Contributions (% of Payroll)	\$140,964 7.9%	\$3,615,735 8.3%	\$139,397 7.7%	\$1,219,821 7.4%	\$1,113,194 8.0%	\$6,229,111 8.0%
<b>Additional 2018 Solvency Cont.</b>						
- To Receive State Allocation	NA	NA	NA	NA	NA	\$0
- And to provide COLA Benefits	NA	\$88,683	NA	NA	NA	\$88,683

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> For plans under the Alternative funding policy, includes any additional contributions required to satisfy both 15-year solvency tests.

# Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2015

	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans <sup>a</sup>
<b>Participating Plans</b>	5	26	10	10	2	53
<b>Plan Membership</b>						
(a) Actives	37	856	46	344	255	1,538
(b) Annuitants	27	1,012	51	602	456	2,148
(c) Inactives	0	10	0	10	6	26
(d) Total	64	1,878	97	956	717	3,712
Payroll	\$1,541,962	\$41,392,088	\$2,038,032	\$16,962,025	\$14,467,603	\$76,401,710
Expected Benefit Payments	\$705,175	\$28,875,583	\$1,209,723	\$17,047,842	\$14,138,386	\$61,976,709
<b>Actuarial Accrued Liabilities</b>						
(a) Actives	\$6,713,933	\$252,685,302	\$10,111,282	\$114,292,742	\$108,908,937	\$492,712,196
(b) Annuitants	\$9,509,329	\$469,779,180	\$17,325,089	\$242,468,982	\$235,474,388	\$974,556,968
(c) Inactives	\$0	\$5,302,582	\$0	\$5,286,759	\$3,618,452	\$14,207,793
(d) Total Liabilities	\$16,223,262	\$727,767,064	\$27,436,371	\$362,048,483	\$348,001,777	\$1,481,476,957
Market Value of Assets	\$10,099,312	\$161,018,878	\$18,361,406	\$101,780,296	\$29,970,878	\$321,230,770
Unfunded Liability	\$6,123,950	\$566,748,186	\$9,074,965	\$260,268,187	\$318,030,899	\$1,160,246,187
Funded Ratio	62%	22%	67%	28%	9%	22%
Net Employer Normal Cost (% of Payroll)	\$400,146 26%	\$17,926,150 43%	\$649,969 32%	\$5,922,639 35%	\$6,521,259 45%	\$31,420,163 41%
<b>FYE 2016 Contributions</b>						
Employer Contributions <sup>b</sup> (% of Payroll)	\$431,778 28%	\$14,641,449 35%	\$999,811 49%	\$14,555,253 86%	\$10,526,610 73%	\$41,154,901 54%
State Premium Tax Allocation (% of Payroll)	\$320,929 21%	\$8,417,595 20%	\$436,192 21%	\$4,395,833 26%	\$3,182,420 22%	\$16,752,969 22%
Employee Contributions (% of Payroll)	\$111,989 7.3%	\$3,363,335 8.1%	\$182,652 9.0%	\$1,184,701 7.0%	\$1,157,409 8.0%	\$6,000,086 7.9%
<b>FYE 2017 Contributions</b>						
Employer Contributions <sup>b</sup> (% of Payroll)	\$644,224 40%	\$15,464,658 36%	\$1,157,261 58%	\$17,255,550 107%	\$12,006,919 83%	\$46,528,612 60%
State Premium Tax Allocation (% of Payroll)	\$348,114 21%	\$8,865,357 21%	\$461,514 23%	\$4,495,829 28%	\$3,409,013 24%	\$17,579,827 23%
Employee Contributions (% of Payroll)	\$125,795 7.7%	\$3,517,682 8.2%	\$152,409 7.6%	\$1,169,186 7.2%	\$1,154,937 8.0%	\$6,120,009 7.9%
<b>Additional 2017 Solvency Cont.</b>						
- To Receive State Allocation	NA	NA	NA	NA	NA	\$0
- And to provide COLA Benefits	NA	\$104,649	NA	NA	NA	\$104,649

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> For plans under the Alternative funding policy, includes any additional contributions required to satisfy both 15-year solvency tests.



# Actuarial Valuation Results

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## (Gain) / Loss Analysis

The Funds experienced an aggregate actuarial gain of \$6,270,542 during the plan year ending June 30, 2016. The key factors contributing to the experience gain included:

- **Asset Performance:** The Funds, in the aggregate, experienced an investment return of approximately 1.3% on the market value of assets during the plan year ending June 30, 2016, which compares to the average expected annual return of 5.1%. The difference in actual versus expected return produced an asset loss of \$11,979,941.
  
- **Demographic Experience:** An actuarial valuation is based on the expectation of certain events such as salary increases, retirement, disability, mortality, and termination. Demographic or liability experience gains and losses are generated when the actual occurrence of such events are different from the expectation. Between June 30, 2015 and June 30, 2016, the Funds experienced an aggregate net liability gain of \$18,250,483. The net liability gain of \$18,250,483 (or 1.2% of expected liabilities) is within the range of reasonable variation and is primarily the result of the following factors:
  - Salary growth rates during the plan year July 1, 2015, to June 30, 2016, that were less than the assumed rate of approximately 5%; and
  - Cost-of-living adjustments during the plan year July 1, 2015, to June 30, 2016, that were less than the assumed rate of 2.75%.

# Actuarial Valuation Results

## (Gain) / Loss Analysis

Experience (gain) loss for plan year ending June 30, 2016						
	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans
Participating Plans:	5	25	10	11	2	53
1. (a) Liability as of 7/1/2015	\$16,223,262	\$713,425,178	\$27,436,371	\$376,390,369	\$348,001,777	\$1,481,476,957
(b) Normal Cost due 7/1/2015	511,543	20,745,611	788,388	7,515,606	7,655,157	37,216,305
(c) Interest on (a) and (b) to 6/30/2016 <sup>a</sup>	1,032,540	32,754,666	1,666,093	19,850,318	15,832,321	71,135,938
(d) Benefit Payments with interest to 6/30/2016 <sup>a</sup>	717,362	28,359,534	1,406,794	18,044,583	14,453,633	62,981,906
(e) Effect of Assumption Changes	151,137	(4,035,217)	(95,131)	(822,740)	0	(4,801,951)
(f) Expected Liability at 7/1/2016 [(a) + (b) + (c) - (d) + (e)]	17,201,120	734,530,704	28,388,927	384,888,970	357,035,622	1,522,045,343
(g) Actual Liability at 7/1/2016	\$17,177,850	\$724,223,399	\$27,661,702	\$381,202,174	\$353,529,735	\$1,503,794,860
(h) Liability (Gain)/Loss [(g) - (f)]	<b>(\$23,270)</b>	<b>(\$10,307,305)</b>	<b>(\$727,225)</b>	<b>(\$3,686,796)</b>	<b>(\$3,505,887)</b>	<b>(\$18,250,483)</b>
2. (a) Market Value of Assets as of 7/1/2015	\$10,015,533	\$151,819,750	\$18,552,537	\$110,117,559	\$29,970,878	\$320,476,257
(b) Interest on (a) and (b) to 6/30/2016 <sup>a</sup>	637,917	7,171,738	1,144,119	5,736,585	1,347,735	16,038,094
(c) Contributions with interest to 6/30/2016 <sup>a</sup>	821,959	27,715,757	1,597,727	22,466,238	15,251,367	67,853,048
(d) Benefit Payments with interest to 6/30/2016 <sup>a</sup>	717,362	28,359,534	1,406,794	18,044,583	14,453,633	62,981,906
(e) Expected Assets at 6/30/2016 [(a) + (b) + (c) - (d)]	10,758,047	158,347,711	19,887,589	120,275,799	32,116,347	341,385,493
(f) Actual Assets at 7/1/2016	\$10,127,704	\$152,878,977	\$19,053,180	\$115,237,754	\$32,107,937	\$329,405,552
(g) Asset (Gain)/Loss [(e) - (f)]	<b>\$630,343</b>	<b>\$5,468,734</b>	<b>\$834,409</b>	<b>\$5,038,045</b>	<b>\$8,410</b>	<b>\$11,979,941</b>
3. Total (Gain)/Loss [1(h) + 2(g)]	<b>\$607,073</b>	<b>(\$4,838,571)</b>	<b>\$107,184</b>	<b>\$1,351,249</b>	<b>(\$3,497,477)</b>	<b>(\$6,270,542)</b>

<sup>a</sup> Interest based on assumptions used for each specific plan as of June 30, 2015.

<sup>b</sup> 10 plans restated their Market Value of Assets as of June 30, 2015 by \$(754,513).

## Actuarial Valuation Results

### Actuarial Valuation Data as of July 1, 2016

#### Summary of Participant Activity – All Plans Combined

	Actives	Retirees	Disabled	Deferred Vested	Spouses and Beneficiaries	Totals
<b>Total Participants July 1, 2015:</b>	<b>1,538</b>	<b>1,342</b>	<b>300</b>	<b>26</b>	<b>506</b>	<b>3,712</b>
New Actives:	65					<b>65</b>
Returned to Actives Status:	9		(5)			<b>4</b>
Data Corrections/Other Changes:	4					<b>4</b>
Vested Terminations:	(7)			7		<b>0</b>
Non-Vested Terminations:	(50)			(1)		<b>(51)</b>
Disabled:	(9)		10	(1)		<b>0</b>
Retirements:	(47)	52	(1)	(4)		<b>0</b>
Deaths with Beneficiary:	(1)	(19)	(6)		29	<b>3</b>
Deaths w/o Beneficiary:		(13)	(6)		(32)	<b>(51)</b>
Expired Annuity or Stop Payment:					(3)	<b>(3)</b>
<b>Net Changes:</b>	<b>(36)</b>	<b>20</b>	<b>(8)</b>	<b>1</b>	<b>(6)</b>	<b>(29)</b>
<b>Total Participants June 30, 2016:</b>	<b>1,502</b>	<b>1,362</b>	<b>292</b>	<b>27</b>	<b>500</b>	<b>3,683</b>

## Actuarial Valuation Results

### Distribution of Active Employees by Age and Length of Service – All Plans Combined

Attained Age	Years of Service to Valuation Date										Totals	Valuation Payroll <sup>a</sup>
	Less than 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 35			
Under 20	1										1	39,064
20-24	25	44									69	2,718,946
25-29	19	88	49	1							157	6,850,252
30-34	10	55	139	47	2						253	11,880,071
35-39	6	20	102	124	29	1					282	14,011,196
40-44	2	4	52	83	132	35					308	16,394,599
45-49		2	2	54	111	119	31				319	18,105,005
50-54			1	2	24	34	17				78	4,469,542
55-59		2		1	3	10	11	4	1		32	1,881,605
60-64							1	1	1		3	190,529
65-69												0
Over 70												0
<b>Totals</b>	<b>63</b>	<b>215</b>	<b>345</b>	<b>312</b>	<b>301</b>	<b>199</b>	<b>60</b>	<b>5</b>	<b>2</b>		<b>1,502</b>	<b>\$ 76,540,808</b>
	<b>Averages</b> _____											
	Age: 39.3 years											
	Service: 12.1 years											
	Annual Pay: \$50,959											

<sup>a</sup> Based on payroll at beginning of plan year.

## Actuarial Valuation Results

### Participants Summary

Active Participants	July 1, 2015	July 1, 2016
Number of Actives	1,538	1,502
Total Annual Pay	\$76,401,710	\$76,540,808
Average Age	39.1	39.3
Average Service	12.1	12.1

Inactive Participants	July 1, 2015		July 1, 2016	
Type	No.	Annual Benefit	No.	Annual Benefit
Retirees	1,342	\$46,381,674	1,362	\$47,779,978
Surviving Spouses	506	\$6,972,377	500	\$7,028,451
Disabled Members	300	\$6,936,009	292	\$6,848,706
Deferred Vested Members	26	\$794,027	27	\$900,492

## **SECTION III**

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### **ACTUARIAL PROJECTIONS – CURRENT FUNDING POLICY**

# Actuarial Projections – Current Funding Policy

## Actuarial Projections – Current Funding Policy – Distribution of Plans

The tables below show a distribution of the number of Plans, by funding policy selected, that are projected to have an employer contribution rate or funded ratio that falls within a certain range. The projections are based on the actuarial valuation as of July 1, 2016. For purposes of comparing the relationship of the projected distributions, we have selected five representative years in the 40-year projection period: 2016, 2026, 2036, 2046, and 2056.

### Funded Ratio Comparison

The table below summarizes the distribution of the projected funded ratios for all Funds.

Projection Period	Target Funded Ratio	2016 Valuation Number of Plans				
		Standard Plans	Alternative Plans	Optional From Standard	Optional From Alternative	Conservation Plans
<b>2016</b>	<b>Greater Than: 20%</b>	5	13	9	10	0
<b>2026</b>	<b>40%</b>	5	5	10	9	0
<b>2036</b>	<b>60%</b>	5	7	10	9	0
<b>2046</b>	<b>80%</b>	5	9	10	9	2
<b>2056</b>	<b>100%</b>	5	12	10	11	2
<b>Of Total Number of Plans:</b>		<b>5</b>	<b>25</b>	<b>10</b>	<b>11</b>	<b>2</b>

### Standard Plans or former Standard Plans that switched to the Optional Funding Policy

Based on the 2016 valuation results, 93% of Standard Plans or former Standard Plans that switched to the Optional funding policy, have a funded ratio greater than 20% as of June 30, 2016, and are projected to be fully funded by 2031. Factors that may cause the projected funded ratio to increase at a slower rate include:

- Emerging actuarial losses in the future, including decreases in assets and increases in liabilities at a rate higher than expected, and
- Actual contributions less than projected contributions.

# Actuarial Projections – Current Funding Policy

## Alternative Plans

Based on the 2016 valuation, 52% of the Alternative plans had a funded ratio of at least 20% as of June 30, 2016.

The projected funded ratios for Alternative plans are expected to increase at a much slower rate than Standard plans. By 2036, only 28% of the Alternative plans are expected to be funded at over 60% compared to 100% for the Standard plans.

Our projections assume sponsors will elect the Standard funding policy if the funded ratio exceeds 80% and the Standard policy contribution is lower than the Alternative policy contribution. Switching to the Standard policy tends to stabilize the growth of the funded ratio. We project that by 2046, 9 of the 25 remaining Alternative funding policy plans, or 36%, will have switched to the Standard funding policy.

## Former Alternative Plans that switched to the Optional Funding Policy

Former Alternative Plans that switched to the Optional funding policy are projected to be fully funded by 2050. Eleven former Alternative Plans, some being very large and underfunded, have selected the Optional funding policy. The Optional funding policy is similar to the Standard Policy with the exception of the amortization period.

## Conservation Plans

Plans using the Conservation funding policy are projected to experience very slow growth in the funded ratio. This policy effectively defers the contributions needed to produce sustainable growth in the funded ratio.

## Contribution Rate Comparison

The table below summarizes the distribution of the projected contribution rates for all Funds. For comparison purposes, we have assumed a target contribution rate of less than 40% for all projection years.

Projection Period	Target Contribution Rate	2016 Valuation Number of Plans				
		Standard Plans	Alternative Plans	Optional From Standard	Optional From Alternative	Conservation Plans
	<b>Less Than:</b>					
<b>2016</b>	<b>40%</b>	4	18	7	2	0
<b>2026</b>	<b>40%</b>	3	13	8	5	0
<b>2036</b>	<b>40%</b>	5	7	10	9	0
<b>2046</b>	<b>40%</b>	5	6	10	11	2
<b>2056</b>	<b>40%</b>	5	11	10	11	2
<b>Of Total Number of Plans:</b>		<b>5</b>	<b>25</b>	<b>10</b>	<b>11</b>	<b>2</b>



## Actuarial Projections – Current Funding Policy

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Under the Optional funding policy and Conservation funding policy, contribution rates are based on contributions and payroll for members in both the local police or fire pension fund and the statewide Municipal Police Officers and Firefighters Retirement System.

### Standard Plans or former Standard Plans that switched to the Optional Policy

The percentage of Standard plans and former Standard plans that have switched to the Optional funding policy with a 2016 contribution rate less than 40% of payroll is 73%. In the long-term, we would expect the contribution rate to decrease as plans become fully funded. Once the plans become fully funded, the contribution rate should approach the employer normal cost rate of approximately 25% to 35%.

### Alternative Plans

Based on the 2016 valuation, 72% of the Alternative plans had a contribution rate for 2016 of less than 40%.

In the short-term, the percentage of Alternative plans with a 2016 contribution rate less than 40% is comparable to the percentage for Standard plans. However, by 2036, only 28% of Alternative plans compared to 100% of Standard plans are projected to have a contribution rate of less than 40%. The Alternative plans with a projected contribution rate of less than 40% generally have reached a funded ratio of 80% and have triggered the Standard funding policy, following a period in which employer contributions rates were very high.

### Former Alternative Plans that switched to the Optional Policy

The Optional plans will eventually produce contribution rates that are less than 40%, as the unfunded actuarial liability decreases.

### Conservation Plans

The Conservation plans are projected to experience an increase in contributions as the number of retired members increases. Eventually, plan obligations will decrease as the number of retirees decreases. However, this is not projected to occur until close to the end of the 40-year projection period.

### Key Observations

The projections indicate that Funds using the Standard funding policy are expected to have stable contribution rates that will produce increasing funded ratios, which ultimately approach 100% by 2031. Funds using the Alternative policy will generally have lower initial contribution rates that increase exponentially and will generally produce funded ratios that increase at a slower rate when compared to the Standard policy. However, several Alternative plans are projected to switch to the Standard funding policy after the funded ratio approaches 80% resulting in a more stable funded ratio and contribution pattern.

## Actuarial Projections – Current Funding Policy

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Optional funding policy plans are projected to experience a steady but slow growth in the funded ratio. Conservation funding policy plans are projected to experience very slow growth in the funded ratio, and contributions are effectively deferred.

## **SECTION IV**

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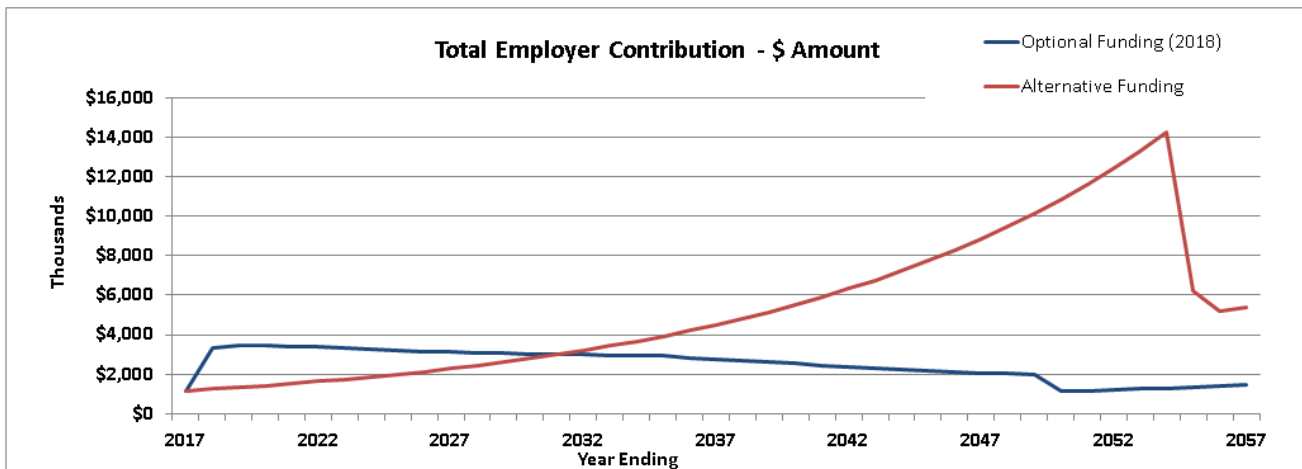
### **ACTUARIAL PROJECTIONS – FUNDING POLICY CHOICES**

# Actuarial Projections – Funding Policy Choices

## Impact of Optional Funding Policy under West Virginia Code §8-22-20(e)(1)

West Virginia Code §8-22-20(e)(1) allows Plan Sponsors using either the Standard or Alternative funding policy to close their current local police officers and firefighters pension Fund, and provide benefits to future members through the statewide cost sharing plan—the Municipal Police Officers and Firefighters Retirement System. The employer’s contributions under the Municipal Police Officers and Firefighters Retirement System are fixed at 10.5% of pay, which is considerably less than the employer’s normal cost rate. The key impact of West Virginia Code §8-22-20(e)(1) with respect to plan funding for Funds financing benefits under the Standard and Alternative funding policies is as follows:

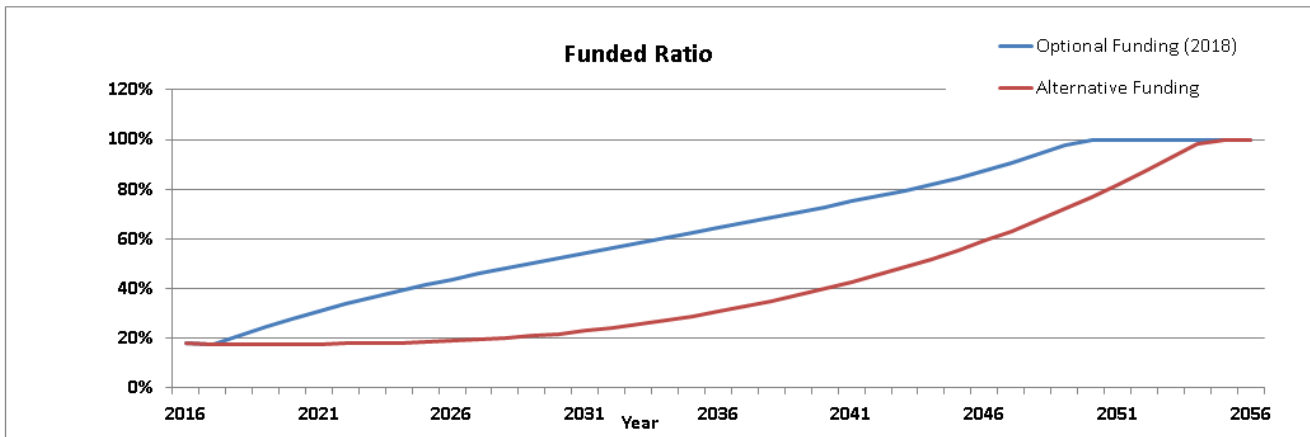
- Sponsors financing benefits under the Standard funding policy are expected to receive immediate contribution relief by switching to the Optional funding policy with no significant impact to the projected funded ratio. This occurs because employer contributions for new entrants under the Municipal Police Officers and Firefighters Retirement System are fixed at 10.5% of pay, whereas the expected employer contributions for new entrants under the local plan are approximately equal to the higher net employer normal cost rate of pay.
- Sponsors currently financing benefits under the Alternative policy are generally not expected to receive immediate contribution relief from switching to the Optional funding policy because the Alternative funding policy contributions in many cases are considerably lower than the actuarially based contributions defined under the Optional funding policy.
- Plan sponsors currently using the Alternative funding policy may find it more affordable in the long run to switch to the Optional funding policy even if it means an increase in the employer contributions in the short term. The following graph, for a typical Alternative funding policy plan, shows the difference in employer contributions between the two funding policies over the next 40 years:



As the above graph illustrates, contributing more under the Optional funding policy for the next 14 years produces significant cost reductions in the following 26 years.

# Actuarial Projections – Funding Policy Choices

The following graph for the average alternative plan shows the impact on the funded ratio between the two funding policies over the next 40 years:



The preceding graphs show: (i) Optional contributions are greater during the first 14 years but lower after the 14th year, and (ii) the Optional funding policy produces higher projected funding ratios when compared to the Alternative funding policy, on average. Some individual plans may not experience this situation.

## **Impact of Conservation Funding Policy under West Virginia §8-22-20 (f)(1)**

West Virginia Code §8-22-20(f)(1) allows Plan Sponsors using the Alternative funding policy to close their current local police officers and firefighters pension Fund, and provide benefits to future members through the statewide cost sharing plan – the Municipal Police Officers and Firefighters Retirement System. The key impact of West Virginia Code §8-22-20(f)(1) with respect to plan funding for Funds currently financing benefits under the Alternative policy follows:

- Sponsors currently financing benefits under the Alternative funding policy are generally not expected to receive immediate contribution relief by switching to the Conservation funding policy because the Alternative funding policy contributions in many cases are considerably lower than the benefit payments (net of member contributions or the premium tax allocation) defined under the Conservation funding policy.

## **SECTION V**

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### **CONCLUSIONS AND RECOMMENDATIONS**

# Conclusions and Recommendations

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## Conclusions and Recommendations

Based on the results of July 1, 2016 valuation and projections, we have the following general conclusions:

- Most Funds using the Standard funding policy, or former Standard plans that elected the Optional funding policy, are using a funding policy which is consistent with actuarial standards and is expected to provide a reasonable level of funding in a reasonable period of time. We recommend that these Funds continue to make contributions based on these policies.
- The other three funding policies available to Plan Sponsors (including the Alternative, Optional from Alternative, and Conservation funding policies) were designed to provide and offer Plan Sponsors additional contribution flexibility and/or affordability. As such, each of these funding policies has some disadvantages as compared to the Standard funding policy.
- Under the Alternative funding policy, contributions are a function of the 1990 contribution (or five-year average since 1984 if greater) increased by 7% each year since 1990. This method of funding does not directly reflect any emerging experience gains or losses. For example, many Funds experienced investment losses in plan years ending June 30, 2008, June 30, 2009, June 30, 2015, and June 30, 2016, and investment gains in the plan years ended June 30, 2011, and June 30, 2014. The Alternative funding policy does not recognize any of these losses or gains.
- The sponsor's initial Alternative contribution effective for plan year 1991 is the greater of 107% of the amount contributed for the plan year ending June 30, 1990, or the five-year average of contributions made since 1984. In many cases, this starting point contribution was so low that the current year's contributions, even with many years of 7% increases, is still significantly less than the normal cost. This means that switching to the Optional funding policy will likely require a large increase in annual contributions.
- One key funding objective for public pension plans is to ensure the funding policy produces inter-generational equity among taxpayers. The Alternative funding policy generally defers the funding of plan costs into the future, creating a financial burden for future taxpayers.
- The Alternative funding policy assumes employer contributions will increase at a rate of 7%. In order to produce a level contribution rate, this funding method would require a 7% increase in payroll. In general, based on historical experience, we would expect annual payroll increases in the 3% to 6% range. Consequently, the Alternative funding policy can eventually produce contribution rates that exceed 100% of payroll.
- Many of the Funds using the Alternative funding policy are very poorly funded and will require a significantly higher level of contributions in the near future in order to bring the funded ratio to a more secure level. We recommend that these Funds consider immediately increasing their level of annual contributions. However, we recognize that affordability is a key concern for these Funds.
- Certain underfunded Funds using the Alternative funding policy may satisfy the minimum statutory standard for solvency; i.e. assets are no less than one dollar over the next 15-year

## Conclusions and Recommendations

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projection period, and therefore do not need additional contributions to provide supplemental COLA benefits. However, for the following plans, the funded ratio is projected to reach very low levels, and we strongly recommend that the plan sponsor make additional contributions in excess of the statutory minimum in order to improve the security of future benefits.

- Fairmont Firemen’s Pension and Relief Fund
  - Martinsburg Firemen’s Pension and Relief Fund
  - Nitro Firemen’s Pension and Relief Fund
  - Princeton Firemen’s Pension and Relief Fund
  - South Charleston Firemen’s Pension and Relief Fund
  - South Charleston Policemen’s Pension and Relief Fund
- Certain underfunded Funds using the Alternative funding policy may not satisfy the minimum statutory standard for solvency; i.e. assets are less than one dollar over the next 15-year projection period, and therefore would need additional contributions to provide supplemental COLA benefits. We strongly recommend that the plan sponsor also make additional contributions in excess of the statutory minimum in order to improve the security of future benefits. These Funds include the following:
    - St. Albans Firemen’s Pension and Relief Fund
    - Weirton Policemen’s Pension and Relief Fund
- Certain underfunded Funds have not received the minimum statutory contribution and have forfeited the premium tax allocation provided by the State. In our projections, we assume that such plans will eventually receive the statutory minimum contribution. Given the lack of funding for these Funds, we may no longer be able to support the assumption that the sponsor will make the statutory minimum contribution in our solvency projections, unless the sponsor adopts a formal policy to correct the statutory funding deficiency. These Funds include the following:
    - Logan Firemen’s Pension and Relief Fund
    - Logan Policemen’s Pension and Relief Fund
    - Point Pleasant Policemen’s Pension and Relief Fund

We understand that the City of Logan has passed an ordinance which allows the collection of additional revenues for the purpose of funding the local Police and Fire pension plans.

- Under the Optional funding policy, contributions to the closed local plan are projected to decrease in future years as new hires enter the Municipal Police Officers and Firefighters Retirement System. At the same time, all Funds under the Optional funding policy by definition are projected to be 100% funded by the end of the amortization period in 40 years. However, the funded ratio for those Funds that are currently very poorly funded will increase at a very slow rate for many years and leave the Fund vulnerable if there is another significant market downturn.
- The Conservation funding policy is basically a “pay-as-you-go” funding method. In other words, employer contributions are based on actual retirements and disabilities. This method does not directly reflect any emerging experience gains or losses. For example, many Funds experienced



## Conclusions and Recommendations

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investment losses in plan years ending June 30, 2008, June 30, 2009, June 30, 2015, and June 30, 2016, and investment gains in the plan years ended June 30, 2011, June 30, 2013, and June 30, 2014. The Conservation funding policy does not recognize any of these losses or gains.

- Employer contributions under the Conservation funding policy are based on actual retirements and disabilities which could vary significantly from year to year based on actual plan experience. There is no mechanism under the Conservation funding policy to smooth out annual fluctuations in contribution requirements.
- Our actuarial valuations assume the sponsor is required to contribute at least the normal cost in order to receive the State premium tax allocation. Two plans with funded ratios in excess of 100% as of July 1, 2015 are projected to experience an increasing funded ratio. At some point, the sponsor may no longer need additional contributions. For example, a plan that is at least 125% funded on a present value of future benefit basis, may have a sufficient cushion for future adverse experience. These Funds include the following:
  - Oak Hill Policemen’s Pension and Relief Fund
  - Welch Policemen’s Pension and Relief Fund
- Because the discount rate depends on the equity allocation, we recommend that the sponsor provide a copy of the fund’s investment policy. If the investment policy is not currently available, we recommend that the sponsor provide documentation on the fund’s target asset allocation.
- GASB No. 67 replaced GASB No. 25 for pension plan financial reporting requirements (effective in fiscal year ending June 30, 2014) and GASB No. 68 replaced GASB No. 27 for employer financial reporting (effective in fiscal year ending June 30, 2015). For plans that are projected to have zero assets in the future, on a closed group basis, the discount rate used for GASB Nos. 67 and 68 financial reporting purposes will be based on a blended rate of the long-term investment return rate and a 20-year tax-exempt municipal bond index rate. Under the new accounting standards, the unfunded actuarial liability will need to be recognized on the plan sponsor’s balance sheet. The new accounting standards will not impact the current statutory contribution policies. GRS provides separate GASB No. 67 reports to each plan sponsor.

## **SECTION VI**

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### **ACTUARIAL ASSUMPTIONS AND METHODS**

## Actuarial Assumptions and Methods

### Discount Rate

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

Funded Ratio as of Valuation Date <sup>1</sup>	Liquidity Ratio <sup>2</sup>	Equity Exposure <sup>3</sup>	Projected Funded Ratio after 15 Years <sup>1</sup>	Discount Rate	Number of Plans Satisfying Conditions
60% or more	10	50% or more	70% or more	6.5%	10 <sup>a</sup>
40% or more	8	40% or more	60% or more	6.0%	5
30% or more	6	30% or more	50% or more	5.5%	8
15% or more	4	n/a	40% or more	5.0%	8
Less than 15%	n/a	n/a	15% or more	4.5%	15
Less than 15%	n/a	n/a	Less than 15%	4.0%	7

<sup>1</sup> 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).

<sup>2</sup> Liquidity ratio equals assets as of the valuation date divided by expected benefits for the year.

<sup>3</sup> Based on investment policy.

Discount Rate

4.0% – 7.0% <sup>a</sup>

<sup>a</sup> One plan, Town of Belle Policemen's Pension and Relief Fund, with a broad investment exposure of the assets invested in the West Virginia Investment Board resulted in a 7.00% discount rate assumption, as approved by the MPOB.

## Actuarial Assumptions and Methods

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**The premium tax allocation is projected using the following methodology:**

- (1) The Base Allocation for all Pension and Relief Funds 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”).
- (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 both the Base Allocation and the Excess Allocation assigned to the individual plan. Consequently, the projections do not include any reallocation of Expired Premium Tax Allocation for plan years beginning on and after July 1, 2018.
- (4) The total available premium tax allocation, net of expenses, as of September 1, 2017, includes a Base Allocation of \$8,709,689, an Excess Allocation of \$9,190,019, and an Expired Premium Tax Allocation of \$289,303.
- (5) Based on the average number of plan participants for the 12 month period ending June 30, 2016, all Pension and Relief Funds reported a total of 1,711 eligible active members, and 2,166 eligible retired members.
- (6) The total premium tax allocation was assumed to increase by 2.75% in calendar years ending on and after 2018.

## Actuarial Assumptions and Methods

General Inflation	2.75%
Expected Salary Increase	General Inflation: 2.75% <i>plus</i>
Service-based Increase:	Wage Inflation increment: 1.00% <i>plus</i>
	Years of
	<u>Service</u> <u>Increase</u>
	1                                      20.00%
	2                                      6.50%
	3                                      3.50%
	4                                      2.75%
	5-9                                    2.50%
	10-29                                2.00%
	30-34                                1.25%
	after 34 years of service      0.00%
Post-retirement COLA	2.75% on first \$15,000 of Annual Benefit and on the accumulated supplemental pension amounts for prior years.
Increase in State Insurance Premium Tax Allocation	2.75% on and after year 1
Cost Method	Entry–Age–Normal Level–Percentage–of–Pay

## Actuarial Assumptions and Methods

<p><i>Amortization Policies:</i></p> <p>Alternative Plans and former Alternative Plans that selected the Conservation Policy</p> <p>Standard Plans and former Standard Plans that selected the Optional Policy</p> <p>Former Alternative Plans that selected the Optional Policy</p>	<p>For GASB 67/68 Accounting: 30 – Year Closed Level-Percentage-of-Pay Amortization (from July 1, 2010 – 24 years remaining as of July 1, 2016).</p> <p>For funding and GASB 67/68 Accounting: 40-Year Closed Level-Dollar Amortization (from July 1, 1991 – 15 years remaining as of July 1, 2016)</p> <p>For funding: 40-Year Closed Level-Dollar Amortization (from January 1, 2010 – 33.5 years remaining as of July 1, 2016). For GASB 67/68 Accounting: 30-Year Closed Level-Percentage-of-Pay Amortization (from July 1, 2010 – 24 years remaining as of July 1, 2016)</p>										
<p>Asset Method</p>	<p>Market Value</p>										
<p>Turnover</p>	<p>Sample Rates –</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Age</u></th> <th style="text-align: center;"><u>Rates</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">25</td> <td style="text-align: center;">9%</td> </tr> <tr> <td style="text-align: center;">35</td> <td style="text-align: center;">4%</td> </tr> <tr> <td style="text-align: center;">45</td> <td style="text-align: center;">2%</td> </tr> <tr> <td style="text-align: center;">50</td> <td style="text-align: center;">0%</td> </tr> </tbody> </table>	<u>Age</u>	<u>Rates</u>	25	9%	35	4%	45	2%	50	0%
<u>Age</u>	<u>Rates</u>										
25	9%										
35	4%										
45	2%										
50	0%										
<p>Retirement</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Age</u></th> <th style="text-align: center;"><u>Rates<sup>a</sup></u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">50</td> <td style="text-align: center;">45%</td> </tr> <tr> <td style="text-align: center;">51-55</td> <td style="text-align: center;">30%</td> </tr> <tr> <td style="text-align: center;">56-59</td> <td style="text-align: center;">35%</td> </tr> <tr> <td style="text-align: center;">60</td> <td style="text-align: center;">100%</td> </tr> </tbody> </table> <p><sup>a</sup>Terminated vested participants are assumed to retire at age 50.</p>	<u>Age</u>	<u>Rates<sup>a</sup></u>	50	45%	51-55	30%	56-59	35%	60	100%
<u>Age</u>	<u>Rates<sup>a</sup></u>										
50	45%										
51-55	30%										
56-59	35%										
60	100%										

## Actuarial Assumptions and Methods

Mortality	<p>Active: RP-2014 Blue Collar Healthy Employee<sup>b</sup></p> <p>Post-Retirement: RP-2014 Blue Collar Healthy Annuitant</p> <p>Disabled: RP-2014 Blue Collar Healthy Annuitant set forward four years</p> <p>Tables above incorporate generational mortality improvement using MP-2014 2-dimensional mortality improvement scales.</p> <p><sup>b</sup> Assumes 10% of deaths are duty-related and 90% are non-duty related.</p>								
Disability	<p>Sample Rates –</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Age</u></th> <th style="text-align: center;"><u>Rates<sup>c</sup></u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">30</td> <td style="text-align: center;">0.22%</td> </tr> <tr> <td style="text-align: center;">40</td> <td style="text-align: center;">0.50%</td> </tr> <tr> <td style="text-align: center;">50</td> <td style="text-align: center;">0.79%</td> </tr> </tbody> </table> <p><sup>c</sup> Assumes 60% duty related and 40% non-duty related.</p>	<u>Age</u>	<u>Rates<sup>c</sup></u>	30	0.22%	40	0.50%	50	0.79%
<u>Age</u>	<u>Rates<sup>c</sup></u>								
30	0.22%								
40	0.50%								
50	0.79%								
Percent Married	90%								
Spouse Age	Females 3 years younger than males								

## Actuarial Assumptions and Methods

Administrative Expenses	Depending on the data provided, administrative expenses were assumed to be either: <ul style="list-style-type: none"> <li>(i) Plan year end June 30, 2016 expense increased by general inflation assumption,</li> <li>(ii) 15% of all reported 2016 expenses, or</li> <li>(iii) 0.25% of expected pay plus 0.25% of expected benefits</li> </ul>
Refunds Paid	Assumes non-vested inactive members as of July 1, 2016, with accumulated member contribution balances will receive a refund of their contributions during plan year end June 30, 2017
Data Adjustments and Assumptions	Assumptions about individual data elements were made on a case-by-case basis and documented in each Plan's actuarial valuation report.
Child Beneficiaries	Future survivor widow benefits are loaded by 12% to estimate 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.
General Projection Methodology	Open group projections assume: <ul style="list-style-type: none"> <li>(iv) Salaries will increase and members will decrement as specified in the actuarial assumption section.</li> <li>(v) Active members who retire, become disabled, die or terminate during the year are replaced with new entrants such that the number of active members remains stable during the projections period. Pay for new entrants in future years is increased by the wage inflation assumption. The average age of a new entrant is based on observed experience over the last five years.</li> <li>(vi) Assets grow at the assumed rate of return.</li> <li>(vii) The sponsor makes the statutory required contribution on a monthly basis.</li> <li>(viii) Non-vested members with accumulated plan balances as of July 1, 2016, will receive a refund during plan year end June 30, 2017.</li> </ul> <p>Closed group projections are the same as the open group projections except active members who retire, become disabled, die, or terminate are <u>not</u> replaced with new entrants.</p>



## **SECTION VII**

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### **SUMMARY OF PRINCIPAL FUNDING POLICIES AND PLAN PROVISIONS**

# Summary of Principal Funding Policies and Plan Provisions

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## Summary of Funding Policies

According to the West Virginia Code §8-22-20, Funds may satisfy the minimum standard for actuarial soundness by using one of the following policies:

### Standard Funding Policy

Contributions under the Standard Funding Policy include:

- The employer contribution equals the normal cost, net of employee contributions, plus a 40-year amortization of the unfunded actuarial liability less the allocable portion of the State premium tax fund for municipal pension and relief funds. The amortization is based on a 40-year closed period commencing on July 1, 1991. As of June 30, 2016, there are 15 years left in the amortization period. The employer contribution cannot be less than the normal cost.
- The employee contributions equal 7.0% of pay for members hired before January 1, 2010, and 9.5% of pay if hired after January 1, 2010. However, if elected by the Board of trustees of the Plan, member contributions may be increased up to 9.5% of pay.
- The State provides a premium tax allocation to the Fund based on the number of plan members and a demonstration that the actuarially determined contributions have been made on a timely basis.

### Alternative Funding Policy

Contributions under the Alternative Funding Policy are determined as follows:

- The sponsor's initial Alternative contribution effective for plan year 1991 is the greater of 107% of the amount contributed for the plan year ending June 30, 1990, or the five-year average of contributions made since 1984.
- Sponsor contributions made in subsequent years cannot be less than 107% of the contribution made in the prior fiscal year.
- The actuary must certify in writing that the Fund is projected to be solvent under the Alternative funding policy for the next consecutive 15-year period. A plan is deemed to be solvent if projected assets are greater than zero over the 15-year projection period.
- Beginning September 1, 2003, any municipality which elected the Alternative funding method has the option of reverting to the Standard funding policy if the plan has an unfunded actuarial liability of no more than twenty-five percent of fund assets. In this case, the standard minimum contribution equals the normal cost plus the amortization of the unfunded liability over a period of not more than 40 years commencing from July 1, 1991, less the allocable portion of the state premium tax fund for municipal pension and relief funds.

# Summary of Principal Funding Policies and Plan Provisions

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- Plan members hired before January 1, 2010, contribute 7.0% of pay; however, if elected by the Board of trustees of the Plan, member contributions may be increased up to 9.5% of pay. Employees hired after January 1, 2010, contribute 9.5% of pay.
- The State provides a premium tax allocation to the Fund based on the number of plan members and a demonstration that the employer's statutory contributions have been made on a timely basis.

## **Optional Funding Policy**

The Optional funding policy is defined in West Virginia Code §8-22-20(e)(1), and is effective for plan years beginning after January 1, 2010. The Optional funding policy is available to plan sponsors using either the Standard funding policy or Alternative funding policy. The key features of the Optional funding policy are summarized below:

The existing local Plan is closed, and new employees are covered in the Municipal Police Officers and Firefighters Retirement System. Contributions to the Municipal Police Officers and Firefighters Retirement System include:

- Employer contributions from 8.5% to 10.5% of pay. Currently, Employers contribute 8.5% of pay.
- Employee contributions of 8.5% of pay.

Contributions to the closed local Plan include:

- Employer contributions equal to the normal cost, net of employee contributions, plus a closed period amortization, on a level dollar basis, of the unfunded actuarial liability net of premium tax allocation applicable to the plan year. The closed amortization period, from July 1, 2016, equals 15 years for Standard Plans and 33.5 years for the Alternative Plans.
- Employee contributions of 7.0% of pay if hired before January 1, 2010, which may be increased by up to 2.5% of pay if elected by the Board of trustees of the Plan. Employees hired after January 1, 2010, contribute 9.5% of pay.
- The premium tax allocation assigned to the Fund for the plan year.

## **Conservation Funding Policy**

The Conservation funding policy is defined in West Virginia Code §8-22-20(f)(1), and is effective for plan years beginning after April 1, 2011. The Conservation funding policy is available to plan sponsors using the Alternative funding policy. The key features of the Conservation funding policy are summarized on the following page:

The existing local Plan is closed, and new employees are covered in the multiple employer statewide plan - Municipal Police Officers and Firefighters Retirement System. Contributions to the Municipal Police Officers and Firefighters Retirement System include:

## Summary of Principal Funding Policies and Plan Provisions

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- Employer contributions from 8.5% to 10.5% of pay. Currently, Employers contribute 8.5% of pay.
- Employee contributions of 8.5% of pay.

Contributions to the closed local Plan are made to two asset accounts as follows:

- The first asset account (Benefit Payment Account) is used to finance benefits and expenses for the fiscal year on a pay-as-you-go basis. Sources to pay current year benefits and expenses include minimum employee contributions of 6.5% of pay, a portion of the premium tax allocation not assigned to the accumulation account as defined below, and employer contributions (typically made from the City's general assets).
- The second account (Accumulation Account) cannot be used to pay benefits and expenses until assets exceed actuarial liabilities (i.e., the funded ratio exceeds 100%). Contributions to the accumulation account include employee contributions of 1.5% of pay and a percentage of premium tax allocation. The percentage of premium tax allocation is based on the amounts needed to produce 100% funding of liabilities in 35 years, from adoption, considering assets from both the benefit payment account and the accumulation account. This account also includes the Fund's assets prior to the adoption of Conservation funding policy.

### Summary of Principal Plan Provisions

**Employee Eligibility** — All compensated employees of the Police and Fire Departments hired before July 1, 2016, provided their respective plan is not closed, are eligible to participate in the Policemen's or Firemen's Pension and Relief Funds respectively.

**Average Annual Compensation** — The average of any three twelve-consecutive-month periods of employment which produces the highest average annual compensation.

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

The *Average Adjusted Salary* is base salary (exclusive of all overtime and other pay) of the year used in determining benefits multiplied by the ratio of total salary (includes all overtime and other pay) to base salary from the respective preceding twelve-consecutive-month period.

**Determining Years of Service Credit (Credited Service)** — The number of years that the member has contributed to the employees retirement and benefit fund.

*Prior Military Service* — A city may provide that members who have been honorably discharged from the military shall receive up to two years prior service credit for military service prior to their employment with the city.

## Summary of Principal Funding Policies and Plan Provisions

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*Current 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.

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 one additional percent for each year so served in active military duty, up to a maximum of four additional percent.

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

**Contributions** — Participating employees contribute from 7.0% to 9.5% of compensation. Participating employees hired on or after January 1, 2010 contribute 9.5% of pay.

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

**Benefit Commencement** — Annual retirement pension benefits commence upon retirement or upon the member attaining age fifty, whichever is later, payable in twelve monthly installments.

**Accrued Benefit** — The annual retirement benefit equals 60% of average annual compensation, not less than \$6,000, plus an additional percentage of average annual compensation for service over 20 years equal to 2% for each year of service between 20 and 25 and 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. Benefits continue for life.

**Disability Retirement** — Members are eligible after earning five years of service. No service requirement if disability is service related.

The monthly disability benefit equals the greater of 60% of monthly salary at disability or \$500. 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.

**Death Benefits** — Members are eligible after earning five years of service. No service requirement if death is service related. Retirees and terminated vested participants are also eligible.

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, twenty percent of the participant's benefit until the child attains eighteen or marries; to each dependent orphaned child, twenty-five percent of the participant's benefit until the child attains eighteen or marries; to each dependent parent, ten percent of the participant's benefit for life, and to each dependent brother or sister, the sum of fifty dollars per

## Summary of Principal Funding Policies and Plan Provisions

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month (but a total not to exceed \$100 per month) until such individual attains the age of eighteen years or marries.

In no case shall the payments to the surviving spouse and children be reduced below sixty-five percent of the total amount paid to all dependents.

**Supplemental Pension Benefits** — 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.

**Termination Benefits** — Any member who terminates employment prior to retirement will be entitled to a refund of 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 the department must repay to the pension fund all sums refunded with interest at the rate of eight percent annual.

## **SECTION VIII**

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### **APPENDIX A – SUMMARY OF HISTORICAL ACTUARIAL VALUATION RESULTS**

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2014

	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans <sup>a</sup>
<b>Participating Plans</b>	5	28	10	8	2	53
<b>Plan Membership</b>						
(a) Actives	35	877	60	370	280	1,622
(b) Annuitants	27	1,013	48	584	452	2,124
(c) Inactives	0	13	3	7	3	26
(d) Total	62	1,903	111	961	735	3,772
Payroll	\$1,444,161	\$41,297,640	\$2,464,079	\$17,425,023	\$15,214,906	\$77,845,809
Expected Benefit Payments	\$704,923	\$28,067,152	\$1,139,009	\$16,240,227	\$13,396,645	\$59,547,956
<b>Actuarial Accrued Liabilities</b>						
(a) Actives	\$5,995,217	\$211,528,073	\$9,399,477	\$102,305,386	\$95,936,122	\$425,164,275
(b) Annuitants	\$8,507,829	\$397,000,949	\$14,306,113	\$207,566,088	\$207,620,199	\$835,001,178
(c) Inactives	\$0	\$6,251,128	\$1,101,984	\$3,706,608	\$1,717,808	\$12,777,528
(d) Total Liabilities	\$14,503,046	\$614,780,150	\$24,807,574	\$313,578,082	\$305,274,129	\$1,272,942,981
Market Value of Assets	\$9,770,625	\$160,472,667	\$17,571,488	\$91,919,545	\$28,219,615	\$307,953,940
Unfunded Liability	\$4,732,421	\$454,307,483	\$7,236,086	\$221,658,537	\$277,054,514	\$964,989,041
Funded Ratio	67%	26%	71%	29%	9%	24%
Net Employer Normal Cost	\$277,019	\$11,865,931	\$592,206	\$4,550,003	\$4,925,615	\$22,210,774
(% of Payroll)	19%	29%	24%	26%	32%	29%
<b>FYE 2015 Contributions</b>						
Employer Contributions <sup>b</sup>	\$523,663	\$14,164,803	\$1,058,273	\$15,330,987	\$9,981,537	\$41,059,263
(% of Payroll)	36%	34%	43%	88%	67%	53%
State Premium Tax Allocation	\$321,062	\$8,362,957	\$440,612	\$4,168,265	\$3,166,977	\$16,459,873
(% of Payroll)	22%	20%	18%	24%	21%	21%
Employee Contributions	\$107,740	\$3,243,431	\$190,434	\$1,252,578	\$1,217,193	\$6,011,376
(% of Payroll)	7.5%	7.9%	7.7%	7.2%	8.0%	7.7%
<b>FYE 2016 Contributions</b>						
Employer Contributions <sup>b</sup>	\$431,778	\$14,785,187	\$999,811	\$14,301,933	\$10,693,548	\$41,212,256
(% of Payroll)	29%	35%	43%	87%	71%	53%
State Premium Tax Allocation	\$320,930	\$8,538,813	\$436,193	\$4,274,614	\$3,182,420	\$16,752,970
(% of Payroll)	22%	20%	19%	26%	21%	22%
Employee Contributions	\$111,989	\$3,363,335	\$182,652	\$1,184,701	\$1,200,509	\$6,043,186
(% of Payroll)	7.6%	8.0%	7.8%	7.2%	8.0%	7.8%
<b>Additional 2016 Solvency Cont.</b>						
- To Receive State Allocation	NA	\$5,300	NA	NA	NA	\$5,300
- And to provide COLA Benefits	NA	\$164,400	NA	NA	NA	\$164,400

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.



# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2013

	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans <sup>a</sup>
<b>Participating Plans</b>	8	31	7	5	2	53
<b>Plan Membership</b>						
(a) Actives	57	1,059	42	206	300	1,664
(b) Annuitants	41	1,240	31	347	451	2,110
(c) Inactives	0	18	2	6	2	28
(d) Total	98	2,317	75	559	753	3,802
Payroll	\$2,366,284	\$48,160,983	\$1,656,835	\$10,293,663	\$16,130,158	\$78,607,923
Expected Benefit Payments	\$992,913	\$32,755,672	\$675,134	\$10,064,167	\$13,389,613	\$57,877,499
<b>Actuarial Accrued Liabilities</b>						
(a) Actives	\$10,140,817	\$246,239,521	\$6,536,368	\$62,961,733	\$95,208,771	\$421,087,210
(b) Annuitants	\$11,590,197	\$461,136,585	\$9,912,901	\$135,637,037	\$205,951,922	\$824,228,642
(c) Inactives	\$0	\$8,471,096	\$577,942	\$3,363,678	\$1,146,560	\$13,559,276
(d) Total Liabilities	\$21,731,014	\$715,847,202	\$17,027,211	\$201,962,448	\$302,307,253	\$1,258,875,128
Market Value of Assets	\$12,026,120	\$177,689,488	\$11,909,170	\$45,980,538	\$24,711,384	\$272,316,700
Unfunded Liability	\$9,704,894	\$538,157,714	\$5,118,041	\$155,981,910	\$277,595,869	\$986,558,428
Funded Ratio	55%	25%	70%	23%	8%	22%
Net Employer Normal Cost (% of Payroll)	\$518,843 22%	\$13,693,709 28%	\$400,773 24%	\$2,982,759 29%	\$5,224,684 32%	\$22,820,768 29%
<b>FYE 2014 Contributions</b>						
Employer Contributions <sup>b</sup> (% of Payroll)	\$1,104,761 47%	\$17,193,356 36%	\$733,460 44%	\$10,421,437 101%	\$10,111,068 53%	\$39,564,082 50%
State Premium Tax Allocation (% of Payroll)	\$467,888 20%	\$9,762,331 20%	\$289,615 17%	\$2,315,398 22%	\$3,073,334 16%	\$15,908,566 20%
Employee Contributions (% of Payroll)	\$173,655 7.3%	\$3,704,059 7.7%	\$124,801 7.5%	\$723,643 7.0%	\$1,290,413 8.0%	\$6,016,571 7.7%
<b>FYE 2015 Contributions</b>						
Employer Contributions <sup>b</sup> (% of Payroll)	\$915,791 38%	\$17,891,406 36%	\$666,145 41%	\$9,959,644 98%	\$10,533,831 66%	\$39,966,817 50%
State Premium Tax Allocation (% of Payroll)	\$497,271 21%	\$10,074,744 20%	\$264,403 16%	\$2,456,478 24%	\$3,166,977 20%	\$16,459,873 21%
Employee Contributions (% of Payroll)	\$180,470 7.5%	\$3,845,662 7.8%	\$121,703 7.6%	\$717,075 7.0%	\$1,277,993 8.0%	\$6,142,903 7.7%
<b>Additional 2015 Solvency Cont.</b>						
- To Receive State Allocation	NA	\$8,000	NA	NA	NA	\$8,000
- And to provide COLA Benefits	NA	\$294,300	NA	NA	NA	\$294,300

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2012

	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans <sup>a</sup>
<b>Participating Plans</b>	8	31	7	5	2	53
<b>Plan Membership</b>						
(a) Actives	54	1,047	47	214	328	1,690
(b) Annuitants	41	1,235	30	349	435	2,090
(c) Inactives	2	14	2	5	2	25
(d) Total	97	2,296	79	568	765	3,805
Payroll	\$2,257,353	\$47,188,291	\$1,822,891	\$10,829,347	\$18,016,906	\$80,114,788
Expected Benefit Payments	\$962,258	\$31,799,022	\$652,237	\$9,841,302	\$12,811,676	\$56,066,495
<b>Actuarial Accrued Liabilities</b>						
(a) Actives	\$9,425,810	\$244,054,976	\$6,354,597	\$62,959,294	\$102,052,640	\$424,847,317
(b) Annuitants	\$11,910,495	\$459,265,394	\$9,554,856	\$134,315,553	\$192,252,521	\$807,298,819
(c) Inactives	\$754,460	\$6,855,334	\$542,148	\$2,488,472	\$1,099,482	\$11,739,896
(d) Total Liabilities	\$22,090,765	\$710,175,704	\$16,451,601	\$199,763,319	\$295,404,643	\$1,243,886,032
Market Value of Assets	\$10,286,118	\$164,540,590	\$10,407,930	\$39,234,716	\$21,095,390	\$245,564,744
Unfunded Liability	\$11,804,647	\$545,635,114	\$6,043,671	\$160,528,603	\$274,309,253	\$998,321,288
Funded Ratio	47%	23%	63%	20%	7%	20%
Net Employer Normal Cost (% of Payroll)	\$543,077 24%	\$14,189,885 30%	\$439,871 24%	\$3,111,036 29%	\$5,795,971 32%	\$24,079,840 30%
<b>FYE 2013 Contributions</b>						
Employer Contributions <sup>b</sup> (% of Payroll)	\$948,695 42%	\$15,748,962 33%	\$649,913 36%	\$10,268,139 95%	\$9,006,949 50%	\$36,622,658 46%
State Premium Tax Allocation (% of Payroll)	\$500,600 22%	\$10,364,023 22%	\$318,378 17%	\$2,476,210 23%	\$3,387,287 19%	\$17,046,498 21%
Employee Contributions (% of Payroll)	\$162,967 7.2%	\$3,561,950 7.5%	\$137,055 7.5%	\$760,692 7.0%	\$1,441,353 8.0%	\$6,064,017 7.6%
<b>FYE 2014 Contributions</b>						
Employer Contributions <sup>b</sup> (% of Payroll)	\$1,104,761 47%	\$17,193,356 36%	\$733,460 44%	\$10,421,437 101%	\$10,111,068 53%	\$39,564,082 50%
State Premium Tax Allocation (% of Payroll)	\$467,888 20%	\$9,762,331 20%	\$289,615 17%	\$2,315,398 22%	\$3,073,334 16%	\$15,908,566 20%
Employee Contributions (% of Payroll)	\$173,655 7.3%	\$3,704,059 7.7%	\$124,801 7.5%	\$723,643 7.0%	\$1,290,413 8.0%	\$6,016,571 7.7%
<b>Additional 2014 Solvency Cont.</b>						
- To Receive State Allocation	NA	\$26,100	NA	NA	NA	\$26,100
- And to provide COLA Benefits	NA	\$342,400	NA	NA	NA	\$342,400

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2011

	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans <sup>a</sup>
Participating Plans	9	31	6	5	2	53
Plan Membership						
(a) Actives	60	1,043	41	228	342	1,714
(b) Annuitants	45	1,222	26	345	436	2,074
(c) Inactives	2	17	2	2	2	25
(d) Total	107	2,282	69	575	780	3,813
Payroll	\$2,372,552	\$45,188,591	\$1,454,996	\$11,013,903	\$18,088,004	\$78,118,046
Expected Benefit Payments	\$1,008,409	\$30,440,731	\$535,144	\$9,510,954	\$12,360,288	\$53,855,526
Actuarial Accrued Liabilities						
(a) Actives	\$9,454,191	\$232,770,392	\$5,017,183	\$60,477,604	\$95,875,431	\$403,594,801
(b) Annuitants	\$13,051,284	\$437,117,870	\$8,016,378	\$131,061,049	\$185,353,388	\$774,599,969
(c) Inactives	\$680,468	\$7,550,252	\$487,265	\$840,177	\$1,046,188	\$10,604,350
(d) Total Liabilities	\$23,185,943	\$677,438,514	\$13,520,826	\$192,378,830	\$282,275,007	\$1,188,799,120
Market Value of Assets	\$11,572,237	\$161,461,617	\$8,437,958	\$34,697,287	\$19,913,060	\$236,082,159
Unfunded Liability	\$11,613,706	\$515,976,897	\$5,082,868	\$157,681,543	\$262,361,947	\$952,716,961
Funded Ratio	50%	24%	62%	18%	7%	20%
Net Employer Normal Cost (% of Payroll)	\$582,261 25%	\$13,940,854 31%	\$348,714 24%	\$3,351,670 30%	\$5,931,071 33%	\$24,154,570 31%
Employer Contributions <sup>b</sup> (% of Payroll)	\$1,210,963 51%	\$14,653,455 32%	\$688,184 47%	\$10,697,857 97%	\$8,826,759 49%	\$36,077,218 46%
Additional Solvency Cont.						
- To Receive State Allocation	NA	\$49,700	NA	NA	NA	\$49,700
- To Provide COLA Benefits	NA	\$412,800	NA	NA	NA	\$412,800
Employee Contributions (% of Payroll)	\$168,613 7%	\$3,340,093 7%	\$105,842 7%	\$771,798 7%	\$1,447,041 8%	\$5,833,387 7%
State Premium Tax Allocation (% of Payroll)	\$465,857 20%	\$9,589,663 21%	\$302,959 21%	\$2,485,488 23%	\$3,325,087 18%	\$16,169,054 21%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2010

	Standard Policy	Alternative Policy	Optional Policy From Standard	Optional Policy From Alternative	Conservation Policy	All Plans <sup>a</sup>
Participating Plans	14	32	1	4	2	53
Plan Membership						
(a) Actives	102	1,060	3	221	373	1,759
(b) Annuitants	67	1,213	5	336	430	2,051
(c) Inactives	3	17	0	2	3	25
(d) Total	172	2,290	8	559	806	3,835
Payroll	\$3,795,035	\$45,071,900	\$92,237	\$9,461,141	\$18,682,917	\$77,103,230
Expected Benefit Payment:	\$1,406,298	\$29,407,920	\$144,227	\$9,054,976	\$11,825,294	\$51,838,715
Actuarial Accrued Liabilities						
(a) Actives	\$15,361,788	\$239,608,193	\$108,201	\$59,901,808	\$99,195,128	\$414,175,118
(b) Annuitants	\$20,567,424	\$428,940,757	\$2,147,331	\$128,583,898	\$175,826,505	\$756,065,915
(c) Inactives	\$1,006,182	\$8,196,343	\$0	\$470,098	\$1,744,672	\$11,417,295
(d) Total	\$36,935,394	\$676,745,293	\$2,255,532	\$188,955,804	\$276,766,305	\$1,181,658,328
Market Value of Assets	\$16,397,598	\$147,483,305	\$1,295,724	\$22,135,392	\$18,158,879	\$205,470,898
Unfunded Liability	\$20,537,796	\$529,261,988	\$959,808	\$166,820,412	\$258,607,426	\$976,187,430
Funded Ratio	44%	22%	57%	12%	7%	17%
Net Employer Normal Cost (% of Payroll)	\$1,059,028 28%	\$14,032,690 31%	\$28,397 31%	\$3,351,223 35%	\$5,976,689 32%	\$24,448,027 32%
Employer Contributions <sup>b</sup> (% of Payroll)	\$1,247,458 33%	\$13,702,790 30%	\$41,485 45%	\$9,779,829 103%	\$5,819,568 31%	\$30,591,130 40%
Additional Solvency Cont. (% of Payroll)	\$0 0%	\$103,700 0%	\$0 0%	\$0 0%	\$0 0%	\$103,700 0%
Employee Contributions (% of Payroll)	\$267,404 7%	\$3,276,495 7%	\$6,957 8%	\$743,384 8%	\$1,494,634 8%	\$5,788,874 8%
State Premium Allocation (% of Payroll)	\$770,495 20%	\$10,085,334 22%	\$34,660 38%	\$2,490,451 26%	\$3,559,970 19%	\$16,940,910 22%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2009

	Standard Policy	Alternative Policy	All Plans <sup>a</sup>
Participating Plans	14	37	51
Plan Membership			
(a) Actives	101	1,641	1,742
(b) Annuitants	67	1,978	2,045
(c) Inactives	3	15	18
(d) Total	171	3,634	3,805
Payroll	\$3,573,526	\$71,580,258	\$75,153,784
Expected Benefit Payments	\$1,390,383	\$48,832,891	\$50,223,275
Actuarial Accrued Liabilities			
(a) Actives	\$11,789,127	\$301,411,654	\$313,200,781
(b) Annuitants	\$17,477,678	\$604,165,298	\$621,642,976
(c) Inactives	\$788,784	\$6,014,992	\$6,803,776
(d) Total	\$30,055,589	\$911,591,944	\$941,647,533
Market Value of Assets	\$15,693,437	\$171,175,902	\$186,869,340
Unfunded Liability	\$14,362,152	\$740,416,042	\$754,778,193
Funded Ratio	52%	19%	20%
Net Employer Normal Cost (% of Payroll)	\$762,890 21%	\$16,133,448 23%	\$16,896,338 22%
Employer Contributions <sup>b</sup> (% of Payroll)	\$1,224,637 34%	\$27,967,262 39%	\$29,191,899 39%
Additional Solvency Contributions (% of Payroll)	\$0 0%	\$474,000 1%	\$474,000 1%
Employee Contributions (% of Payroll)	\$250,146 7%	\$5,263,059 7%	\$5,513,205 7%
STO Contributions (% of Payroll)	\$792,755 22%	\$16,126,389 23%	\$16,919,144 23%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2007

	Standard Policy	Alternative Policy	All Plans <sup>a</sup>
Participating Plans	13	34	47
Plan Membership			
(a) Actives	98	1,520	1,618
(b) Annuitants	61	1,793	1,854
(c) Inactives	2	12	14
(d) Total	161	3,325	3,486
Payroll	\$3,251,345	\$63,275,523	\$66,526,868
Expected Benefit Payments	\$1,202,195	\$42,095,395	\$43,297,589
Actuarial Accrued Liabilities			
(a) Actives	\$10,063,087	\$267,421,335	\$277,484,422
(b) Annuitants	\$14,875,664	\$530,001,592	\$544,877,256
(c) Inactives	\$810,110	\$4,661,022	\$5,471,132
(d) Total	\$25,748,861	\$802,083,949	\$827,832,810
Market Value of Assets	\$15,313,492	\$176,162,897	\$191,476,389
Unfunded Liability	\$10,435,369	\$625,921,052	\$636,356,421
Funded Ratio	59%	22%	23%
Net Employer Normal Cost (% of Payroll)	\$702,981 22%	\$14,351,782 23%	\$15,054,763 23%
Employer Contributions <sup>b</sup> (% of Payroll)	\$963,272 30%	\$23,142,236 37%	\$24,105,508 36%
Additional Solvency Contributions (% of Payroll)	\$0 0%	\$122,200 0%	\$122,200 0%
Employee Contributions (% of Payroll)	\$227,596 7%	\$4,658,652 7%	\$4,886,248 7%
STO Contributions (% of Payroll)	\$723,782 22%	\$15,609,895 25%	\$16,333,677 25%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2006

	Standard Policy	Alternative Policy	All Plans <sup>a</sup>
Participating Plans	13	36	49
Plan Membership			
(a) Actives	98	1,576	1,674
(b) Annuitants	59	1,870	1,929
(c) Inactives	3	16	19
(d) Total	160	3,462	3,622
Payroll	\$3,172,617	\$64,238,581	\$67,411,198
Expected Benefit Payments	\$1,130,221	\$42,330,567	\$43,460,788
Actuarial Accrued Liabilities			
(a) Actives	\$9,855,624	\$273,763,730	\$283,619,354
(b) Annuitants	\$14,153,641	\$537,519,952	\$551,673,593
(c) Inactives	\$1,140,177	\$6,521,924	\$7,662,101
(d) Total	\$25,149,442	\$817,805,606	\$842,955,048
Market Value of Assets	\$13,949,937	\$169,437,715	\$183,387,652
Unfunded Liability	\$11,199,505	\$648,367,891	\$659,567,396
Funded Ratio	55%	21%	22%
Net Employer Normal Cost	\$687,676	\$14,784,563	\$15,472,239
(% of Payroll)	22%	23%	23%
Employer Contributions <sup>b</sup>	\$959,122	\$22,286,154	\$23,245,276
(% of Payroll)	30%	35%	34%
Additional Solvency Contributions	\$0	\$318,400	\$318,400
(% of Payroll)	0%	0%	0%
Employee Contributions	\$222,084	\$4,518,957	\$4,741,041
(% of Payroll)	7%	7%	7%
STO Contributions	\$719,852	\$15,722,898	\$16,442,750
(% of Payroll)	23%	24%	24%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2005

	Standard Policy	Alternative Policy	All Plans <sup>a</sup>
Participating Plans	13	36	49
Plan Membership			
(a) Actives	98	1,538	1,636
(b) Annuitants	56	1,843	1,899
(c) Inactives	3	16	19
(d) Total	157	3,397	3,554
Payroll	\$3,090,873	\$60,575,277	\$63,666,150
Expected Benefit Payments	\$1,000,615	\$38,986,489	\$39,987,104
Actuarial Accrued Liabilities			
(a) Actives	\$9,572,481	\$259,044,462	\$268,616,943
(b) Annuitants	\$13,194,282	\$495,728,632	\$508,922,914
(c) Inactives	\$1,152,250	\$6,702,706	\$7,854,956
(d) Total	\$23,919,013	\$761,475,800	\$785,394,813
Market Value of Assets	\$13,274,806	\$160,330,681	\$173,605,487
Unfunded Liability	\$10,644,207	\$601,145,119	\$611,789,326
Funded Ratio	55%	21%	22%
Net Employer Normal Cost	\$734,723	\$15,521,855	\$16,256,578
(% of Payroll)	24%	26%	26%
Employer Contributions <sup>b</sup>	\$966,163	\$21,855,312	\$22,821,475
(% of Payroll)	31%	36%	36%
Additional Solvency Contributions	\$0	\$148,100	\$148,100
(% of Payroll)	0%	0%	0%
Employee Contributions	\$216,362	\$4,240,270	\$4,456,632
(% of Payroll)	7%	7%	7%
STO Contributions	\$684,373	\$14,788,263	\$15,472,636
(% of Payroll)	22%	24%	24%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.



# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2004

	Standard Policy	Alternative Policy	All Plans <sup>a</sup>
Participating Plans	11	38	49
Plan Membership			
(a) Actives	82	1,556	1,638
(b) Annuitants	44	1,838	1,882
(c) Inactives	4	19	23
(d) Total	130	3,413	3,543
Payroll	\$2,645,345	\$58,164,328	\$60,809,673
Expected Benefit Payments	\$817,375	\$37,232,629	\$38,050,004
Actuarial Accrued Liabilities			
(a) Actives	\$8,715,444	\$247,124,232	\$255,839,676
(b) Annuitants	\$9,906,433	\$479,290,042	\$489,196,475
(c) Inactives	\$1,735,383	\$8,214,836	\$9,950,219
(d) Total	\$20,357,260	\$734,629,110	\$754,986,370
Market Value of Assets	\$11,337,047	\$153,631,629	\$164,968,676
Unfunded Liability	\$9,020,213	\$580,997,481	\$590,017,694
Funded Ratio	56%	21%	22%
Net Employer Normal Cost	\$634,768	\$14,888,690	\$15,523,458
(% of Payroll)	24%	26%	26%
Employer Contributions <sup>b</sup>	\$863,889	\$21,083,233	\$21,947,122
(% of Payroll)	33%	36%	36%
Additional Solvency Contributions	\$0	\$297,800	\$297,800
(% of Payroll)	0%	1%	0%
Employee Contributions	\$185,175	\$4,071,500	\$4,256,675
(% of Payroll)	7%	7%	7%
STO Contributions	\$554,688	\$12,630,939	\$13,185,627
(% of Payroll)	21%	22%	22%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2003

	Standard Policy	Alternative Policy	All Plans <sup>a</sup>
Participating Plans	13	38	51
Plan Membership			
(a) Actives	90	1,574	1,664
(b) Annuitants	54	1,803	1,857
(c) Inactives	4	20	24
(d) Total	148	3,397	3,545
Payroll	\$2,622,810	\$57,048,004	\$59,670,814
Expected Benefit Payments	\$930,283	\$34,850,467	\$35,780,750
Actuarial Accrued Liabilities			
(a) Actives	\$8,240,132	\$238,615,771	\$246,855,903
(b) Annuitants	\$11,489,270	\$432,861,565	\$444,350,835
(c) Inactives	\$1,234,644	\$7,621,597	\$8,856,241
(d) Total	\$20,964,046	\$679,098,933	\$700,062,979
Market Value of Assets	\$11,821,357	\$141,967,245	\$153,788,602
Unfunded Liability	\$9,142,689	\$537,131,688	\$546,274,377
Funded Ratio	56%	21%	22%
Net Employer Normal Cost	\$609,926	\$14,087,362	\$14,697,288
(% of Payroll)	23%	25%	25%
Employer Contributions <sup>b</sup>	\$869,831	\$19,551,652	\$20,421,483
(% of Payroll)	33%	34%	34%
Additional Solvency Contributions	\$0	\$523,600	\$523,600
(% of Payroll)	0%	1%	1%
Employee Contributions	\$183,597	\$3,993,360	\$4,176,957
(% of Payroll)	7%	7%	7%
STO Contributions	\$549,204	\$10,028,187	\$10,577,391
(% of Payroll)	21%	18%	18%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

# Appendix A – Summary of Historical Actuarial Valuation Results

## Summary of Key Valuation Results as of July 1, 2002

	Standard Policy	Alternative Policy	All Plans <sup>a</sup>
Participating Plans	11	38	49
Plan Membership			
(a) Actives	81	1,608	1,689
(b) Annuitants	47	1,768	1,815
(c) Inactives	3	11	14
(d) Total	131	3,387	3,518
Payroll	\$2,298,860	\$55,330,792	\$57,629,652
Expected Benefit Payments	\$762,622	\$32,488,541	\$33,251,164
Actuarial Accrued Liabilities			
(a) Actives	\$7,695,680	\$229,543,573	\$237,239,253
(b) Annuitants	\$9,205,427	\$408,061,797	\$417,267,224
(c) Inactives	\$589,689	\$4,514,105	\$5,103,794
(d) Total	\$17,490,796	\$642,119,475	\$659,610,271
Market Value of Assets	\$10,560,331	\$137,697,562	\$148,257,893
Unfunded Liability	\$6,930,465	\$504,421,913	\$511,352,378
Funded Ratio	60%	21%	22%
Net Employer Normal Cost (% of Payroll)	\$519,401	\$13,793,772	\$14,313,173
Employer Contributions <sup>b</sup> (% of Payroll)	\$656,205 29%	\$17,520,877 32%	\$18,177,082 32%
Additional Solvency Contributions (% of Payroll)	\$0 0%	\$476,400 1%	\$476,400 1%
Employee Contributions (% of Payroll)	\$160,922 7%	\$3,873,158 7%	\$4,034,080 7%
STO Contributions (% of Payroll)	\$490,542 21%	\$9,443,944 17%	\$9,934,487 17%

<sup>a</sup> All Funds participating in the Study.

<sup>b</sup> Includes additional contributions required to satisfy the 15-year solvency test.

## **SECTION IX**

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### **APPENDICES B THROUGH G – PROJECTION DATA**

## Appendix B – Summary of Valuation Results

Municipality	Charleston		Huntington		Morgantown		Parkersburg		Wheeling	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
<b>Plan Membership</b>										
-Actives	114	125	71	73	69	48	67	57	58	72
-Annuitants	221	237	133	179	64	56	75	98	107	129
-Inactives	5	1	2	2	0	0	1	0	0	4
<b>Total</b>	<b>340</b>	<b>363</b>	<b>206</b>	<b>254</b>	<b>133</b>	<b>104</b>	<b>143</b>	<b>155</b>	<b>165</b>	<b>205</b>
<b>Payroll</b>	\$6,876,181	\$7,038,745	\$4,483,206	\$3,623,803	\$4,054,650	\$2,590,922	\$3,105,892	\$2,789,195	\$2,754,033	\$3,263,322
<b>Expected Benefit Payments</b>	\$7,097,392	\$7,400,742	\$4,454,246	\$5,742,385	\$2,159,228	\$1,603,661	\$2,302,215	\$2,717,466	\$2,849,026	\$3,371,639
<b>Actuarial Accrued Liabilities</b>										
-Actives	\$50,483,462	\$58,123,908	\$33,279,464	\$28,314,517	\$24,298,924	\$18,958,892	\$18,670,503	\$20,051,870	\$16,404,206	\$20,960,062
-Annuitants	\$118,203,314	\$122,036,529	\$61,032,300	\$88,555,848	\$34,896,346	\$25,176,749	\$37,887,125	\$40,493,529	\$38,860,166	\$46,844,458
-Inactives	\$3,924,729	\$757,793	\$1,009,978	\$1,484,125	\$0	\$0	\$678,297	\$0	\$0	\$1,950,322
<b>Total</b>	<b>\$172,611,505</b>	<b>\$180,918,230</b>	<b>\$95,321,742</b>	<b>\$118,354,490</b>	<b>\$59,195,270</b>	<b>\$44,135,641</b>	<b>\$57,235,925</b>	<b>\$60,545,399</b>	<b>\$55,264,372</b>	<b>\$69,754,842</b>
<b>Market Value of Assets</b>	\$17,122,419	\$14,985,518	\$29,989,819	\$20,503,236	\$13,826,768	\$11,138,652	\$10,211,825	\$13,098,932	\$19,834,631	\$20,727,586
<b>Unfunded Actuarial Accrued Liability</b>	\$155,489,086	\$165,932,712	\$65,331,923	\$97,851,254	\$45,368,502	\$32,996,989	\$47,024,100	\$47,446,467	\$35,429,741	\$49,027,256
<b>Funded Ratio</b>	10%	8%	31%	17%	23%	25%	18%	22%	36%	30%
<b>Net Employer Normal Cost</b>	\$3,058,929	\$3,199,090	\$1,480,214	\$1,676,423	\$1,624,631	\$1,178,804	\$1,366,846	\$1,093,793	\$872,614	\$1,155,427
<b>Contributions FYE 2017</b>										
Employer Contribution *	\$5,799,404	\$5,974,752	\$4,561,500	\$6,233,758	\$825,217	\$669,926	\$1,164,875	\$2,568,735	\$2,301,806	\$3,315,638
( % of Payroll )	84%	85%	102%	172%	20%	26%	38%	92%	84%	102%
State Premium Tax Allocation	\$1,698,684	\$1,710,329	\$1,094,555	\$1,135,084	\$629,967	\$485,359	\$683,470	\$654,545	\$767,103	\$964,251
Employee Contribution	\$574,939	\$574,505	\$313,824	\$253,666	\$385,192	\$199,176	\$242,719	\$208,269	\$208,658	\$237,172
<b>Contributions FYE 2018</b>										
Employer Contribution *	\$5,947,860	\$6,254,664	\$4,577,888	\$6,155,149	\$882,982	\$716,821	\$1,246,416	\$2,748,546	\$2,383,505	\$3,464,623
( % of Payroll )	85%	90%	105%	169%	21%	27%	38%	95%	91%	109%
State Premium Tax Allocation	\$1,737,631	\$1,735,139	\$1,098,776	\$1,107,233	\$691,798	\$507,846	\$713,738	\$659,778	\$764,859	\$992,904
Employee Contribution	\$550,094	\$563,100	\$306,517	\$254,405	\$402,479	\$209,335	\$257,963	\$219,276	\$198,755	\$262,378
<b>Additional 2018 Solvency Contribution <sup>b</sup></b>										
- To Receive State Tax Premium Allocation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
- And to provide Supplemental COLA Benefits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Interest Rate</b>	4.5%	4.5%	5.5%	4.5%	4.5%	4.5%	4.5%	5.0%	5.5%	5.5%
<b>Funding Policy</b>	Conservation	Conservation	Optional from Alternative	Optional from Alternative	Alternative	Alternative	Alternative	Alternative	Optional from Alternative	Optional from Alternative

<sup>a</sup> Includes additional solvency contributions.

<sup>b</sup> Additional contributions needed in 2018 to satisfy the 15-year solvency test.

## Appendix B – Summary of Valuation Results

Municipality	Beckley		Bluefield		Clarksburg		Fairmont		Martinsburg	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
<b>Plan Membership</b>										
-Actives	46	39	26	16	44	42	35	39	45	36
-Annuitants	49	55	23	39	47	53	45	56	41	36
-Inactives	2	0	1	2	2	0	1	0	0	0
Total	97	94	50	57	93	95	81	95	86	72
<b>Payroll</b>	\$2,217,255	\$2,080,112	\$1,025,108	\$684,729	\$2,085,929	\$1,919,071	\$1,598,037	\$1,831,847	\$2,543,082	\$1,962,902
<b>Expected Benefit Payments</b>	\$1,571,207	\$1,906,216	\$572,522	\$838,548	\$1,194,883	\$1,253,390	\$1,271,614	\$1,579,447	\$1,353,041	\$1,332,415
<b>Actuarial Accrued Liabilities</b>										
-Actives	\$10,366,578	\$16,793,658	\$3,826,023	\$3,405,831	\$9,680,804	\$13,753,381	\$9,457,501	\$16,420,894	\$13,279,926	\$12,964,993
-Annuitants	\$23,611,178	\$28,095,942	\$7,400,509	\$14,382,983	\$17,510,440	\$18,219,924	\$18,822,249	\$25,339,622	\$23,280,911	\$22,679,659
-Inactives	\$1,110,412	\$0	\$432,868	\$1,116,320	\$1,022,021	\$0	\$945,073	\$0	\$0	\$0
Total	\$35,088,168	\$44,889,600	\$11,659,400	\$18,905,134	\$28,213,265	\$31,973,305	\$29,224,823	\$41,760,516	\$36,560,837	\$35,644,652
<b>Market Value of Assets</b>	\$20,031,672	\$16,966,940	\$5,058,689	\$3,980,319	\$5,491,795	\$5,649,638	\$4,996,897	\$1,690,420	\$7,869,158	\$2,564,464
<b>Unfunded Actuarial Accrued Liability</b>	\$15,056,496	\$27,922,660	\$6,600,711	\$14,924,815	\$22,721,470	\$26,323,667	\$24,227,926	\$40,070,096	\$28,691,679	\$33,080,188
<b>Funded Ratio</b>	57%	38%	43%	21%	19%	18%	17%	4%	22%	7%
<b>Net Employer Normal Cost</b>	\$771,250	\$991,604	\$264,061	\$290,756	\$781,895	\$776,547	\$683,621	\$1,005,084	\$1,113,051	\$984,369
<b>Contributions FYE 2017</b>										
Employer Contribution *	\$480,405	\$629,462	\$315,470	\$388,866	\$940,290	\$949,252	\$714,519	\$987,129	\$547,400	\$663,971
( % of Payroll )	22%	30%	31%	57%	45%	49%	45%	54%	22%	34%
State Premium Tax Allocation	\$487,562	\$428,814	\$243,862	\$203,346	\$421,449	\$445,631	\$367,668	\$434,016	\$436,496	\$350,495
Employee Contribution	\$172,083	\$155,264	\$85,093	\$56,946	\$166,262	\$142,990	\$129,884	\$157,279	\$213,703	\$162,567
<b>Contributions FYE 2018</b>										
Employer Contribution *	\$514,033	\$673,524	\$337,553	\$416,087	\$1,006,110	\$1,015,700	\$764,535	\$1,056,228	\$585,718	\$710,449
( % of Payroll )	22%	32%	31%	58%	46%	52%	47%	57%	22%	35%
State Premium Tax Allocation	\$515,032	\$443,192	\$263,027	\$214,635	\$437,291	\$442,818	\$376,317	\$434,483	\$427,263	\$359,039
Employee Contribution	\$181,658	\$166,225	\$92,543	\$61,308	\$177,333	\$148,036	\$135,758	\$160,231	\$225,800	\$171,032
<b>Additional 2018 Solvency Contribution <sup>b</sup></b>										
- To Receive State Tax Premium Allocation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
- And to provide Supplemental COLA Benefits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Interest Rate</b>	5.5%	4.5%	6.0%	4.5%	5.0%	5.0%	4.5%	4.0%	4.5%	4.0%
<b>Funding Policy</b>	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative

<sup>a</sup> Includes additional solvency contributions.

<sup>b</sup> Additional contributions needed in 2018 to satisfy the 15-year solvency test.

## Appendix B – Summary of Valuation Results

Municipality	Moundsville		South Charleston		St. Albans		Vienna	Weirton		Belle	Charles Town
	Police	Fire	Police	Fire	Police	Fire	Police	Police	Fire	Police	Police
<b>Plan Membership</b>											
-Actives	9	4	40	37	24	20	20	34	23	1	0
-Annuitants	12	15	34	41	18	25	13	50	20	5	6
-Inactives	3	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>24</b>	<b>19</b>	<b>74</b>	<b>78</b>	<b>42</b>	<b>45</b>	<b>33</b>	<b>84</b>	<b>43</b>	<b>6</b>	<b>6</b>
<b>Payroll</b>	\$440,540	\$160,821	\$1,828,610	\$1,914,061	\$1,078,997	\$912,222	\$997,461	\$1,740,164	\$1,026,836	\$49,053	\$0
<b>Expected Benefit Payments</b>	\$305,968	\$328,961	\$922,475	\$1,216,090	\$653,826	\$855,063	\$413,447	\$1,580,422	\$673,141	\$145,564	\$108,607
<b>Actuarial Accrued Liabilities</b>											
-Actives	\$2,607,704	\$1,103,521	\$10,773,944	\$14,584,507	\$4,626,304	\$6,582,138	\$4,991,642	\$11,326,146	\$5,127,766	\$198,889	\$0
-Annuitants	\$3,263,896	\$4,265,599	\$16,736,790	\$21,518,998	\$9,733,966	\$12,733,006	\$4,931,084	\$25,270,964	\$8,115,312	\$1,636,968	\$1,495,824
-Inactives	\$1,455,820	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$7,327,420</b>	<b>\$5,369,120</b>	<b>\$27,510,734</b>	<b>\$36,103,505</b>	<b>\$14,360,270</b>	<b>\$19,315,144</b>	<b>\$9,922,726</b>	<b>\$36,597,110</b>	<b>\$13,243,078</b>	<b>\$1,835,857</b>	<b>\$1,495,824</b>
<b>Market Value of Assets</b>	\$4,823,799	\$1,224,758	\$2,720,372	\$2,033,787	\$6,314,273	\$2,444,156	\$6,674,873	\$4,028,173	\$9,014,339	\$1,336,443	\$447,261
<b>Unfunded Actuarial Accrued Liability</b>	\$2,503,621	\$4,144,362	\$24,790,362	\$34,069,718	\$8,045,997	\$16,870,988	\$3,247,853	\$32,568,937	\$4,228,739	\$499,414	\$1,048,563
<b>Funded Ratio</b>	66%	23%	10%	6%	44%	13%	67%	11%	68%	73%	30%
<b>Net Employer Normal Cost</b>	\$121,938	\$86,120	\$956,687	\$1,033,346	\$339,958	\$456,692	\$234,140	\$903,957	\$295,896	\$12,628	\$374
<b>Contributions FYE 2017</b>											
Employer Contribution <sup>a</sup>	\$119,182	\$246,979	\$383,643	\$689,624	\$283,361	\$240,553	\$317,089	\$565,368	\$482,523	\$30,395	\$83,964
( % of Payroll )	27%	154%	21%	36%	26%	26%	32%	32%	47%	62%	N/A
State Premium Tax Allocation	\$144,465	\$72,730	\$385,377	\$390,915	\$226,843	\$207,958	\$176,783	\$380,767	\$213,909	\$26,745	\$14,084
Employee Contribution	\$30,838	\$11,257	\$142,686	\$145,097	\$102,505	\$86,661	\$76,172	\$158,740	\$79,582	\$3,434	\$0
<b>Contributions FYE 2018</b>											
Employer Contribution <sup>a</sup>	\$156,817	\$249,560	\$410,498	\$737,898	\$303,196	\$263,881	\$381,363	\$687,138	\$380,791	\$36,753	\$85,506
( % of Payroll )	37%	161%	21%	38%	27%	28%	37%	38%	39%	73%	N/A
State Premium Tax Allocation	\$144,576	\$73,146	\$389,524	\$419,174	\$231,517	\$219,396	\$187,488	\$399,687	\$218,214	\$28,884	\$13,454
Employee Contribution	\$29,862	\$10,850	\$151,674	\$151,170	\$106,349	\$91,128	\$79,703	\$165,149	\$76,374	\$3,528	\$0
<b>Additional 2018 Solvency Contribution <sup>b</sup></b>											
- To Receive State Tax Premium Allocation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
- And to provide Supplemental COLA Benefits	\$0	\$0	\$0	\$0	\$0	\$6,489	\$0	\$82,194	\$0	\$0	\$0
<b>Interest Rate</b>	6.5%	4.5%	4.0%	4.0%	5.5%	4.0%	6.5%	4.0%	6.5%	7.0%	5.0%
<b>Funding Policy</b>	Optional from Alternative	Optional from Alternative	Alternative	Alternative	Alternative	Alternative	Standard	Alternative	Optional from Alternative	Optional from Standard	Standard

<sup>a</sup> Includes additional solvency contributions.

<sup>b</sup> Additional contributions needed in 2018 to satisfy the 15-year solvency test.

## Appendix B – Summary of Valuation Results

Municipality	Chester		Dunbar		Elkins		Grafton		Logan		Nitro	
	Police	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire	
<b>Plan Membership</b>												
-Actives	3	11	13	7	3	3	2	7	8	17	13	
-Annuitants	5	12	21	10	3	6	6	1	2	12	10	
-Inactives	0	0	0	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>8</b>	<b>23</b>	<b>34</b>	<b>17</b>	<b>6</b>	<b>9</b>	<b>8</b>	<b>8</b>	<b>10</b>	<b>29</b>	<b>23</b>	
<b>Payroll</b>	\$123,514	\$535,150	\$619,269	\$359,239	\$163,492	\$144,260	\$68,362	\$279,370	\$321,722	\$960,443	\$638,967	
<b>Expected Benefit Payments</b>	\$146,345	\$347,944	\$545,238	\$318,240	\$39,889	\$102,763	\$142,681	\$22,974	\$41,881	\$309,495	\$318,922	
<b>Actuarial Accrued Liabilities</b>												
-Actives	\$44,303	\$2,453,796	\$3,503,737	\$1,034,856	\$932,345	\$903,849	\$368,109	\$1,714,866	\$1,257,530	\$4,845,663	\$3,671,442	
-Annuitants	\$2,189,688	\$5,276,339	\$9,409,451	\$4,203,147	\$384,576	\$1,261,190	\$2,408,215	\$227,973	\$324,940	\$5,198,328	\$4,988,116	
-Inactives	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>Total</b>	<b>\$2,233,991</b>	<b>\$7,730,135</b>	<b>\$12,913,188</b>	<b>\$5,238,003</b>	<b>\$1,316,921</b>	<b>\$2,165,039</b>	<b>\$2,776,324</b>	<b>\$1,942,839</b>	<b>\$1,582,470</b>	<b>\$10,043,991</b>	<b>\$8,659,558</b>	
<b>Market Value of Assets</b>	\$1,639,748	\$5,424,299	\$682,046	\$3,004,879	\$1,307,000	\$1,375,162	\$1,536,198	\$692,450	\$673,372	\$3,251,677	\$862,839	
<b>Unfunded Actuarial Accrued Liability</b>	\$594,243	\$2,305,836	\$12,231,142	\$2,233,124	\$9,921	\$789,877	\$1,240,126	\$1,250,389	\$909,098	\$6,792,314	\$7,796,719	
<b>Funded Ratio</b>	73%	70%	5%	57%	99%	64%	55%	36%	43%	32%	10%	
<b>Net Employer Normal Cost</b>	\$21,193	\$167,467	\$271,862	\$97,077	\$44,350	\$50,552	\$19,604	\$101,226	\$94,303	\$363,039	\$271,558	
<b>Contributions FYE 2017</b>												
Employer Contribution <sup>a</sup>	\$25,577	\$167,122	\$415,114	\$236,847	\$57,960	\$100,080	\$102,021	\$107,493	\$110,101	\$166,193	\$154,848	
( % of Payroll )	21%	31%	67%	66%	35%	69%	149%	38%	34%	17%	24%	
State Premium Tax Allocation	\$37,400	\$143,878	\$148,389	\$85,605	\$31,901	\$57,947	\$36,596	\$54,160	\$65,687	\$149,635	\$127,325	
Employee Contribution	\$11,734	\$41,014	\$51,785	\$30,217	\$11,444	\$11,192	\$4,785	\$21,264	\$24,526	\$80,897	\$51,343	
<b>Contributions FYE 2018</b>												
Employer Contribution <sup>a</sup>	\$47,596	\$192,203	\$444,172	\$216,218	\$44,350	\$65,392	\$104,457	\$172,917	\$120,802	\$177,827	\$165,687	
( % of Payroll )	35%	37%	69%	63%	26%	44%	148%	60%	36%	18%	25%	
State Premium Tax Allocation	\$34,837	\$131,879	\$165,524	\$104,185	\$49,028	\$61,773	\$39,167	\$49,589	\$64,417	\$153,124	\$129,091	
Employee Contribution	\$12,797	\$40,160	\$53,853	\$29,217	\$11,771	\$11,521	\$4,936	\$22,438	\$26,027	\$85,888	\$54,621	
<b>Additional 2018 Solvency Contribution <sup>b</sup></b>												
- To Receive State Tax Premium Allocation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
- And to provide Supplemental COLA Benefits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>Interest Rate</b>	6.5%	6.0%	4.5%	6.0%	6.5%	5.5%	6.0%	5.5%	6.0%	5.0%	4.5%	
<b>Funding Policy</b>	Standard	Optional from Alternative	Alternative	Optional from Standard	Optional from Standard	Optional from Standard	Optional from Standard	Standard	Standard	Alternative	Alternative	

<sup>a</sup> Includes additional solvency contributions.

<sup>b</sup> Additional contributions needed in 2018 to satisfy the 15-year solvency test.



## Appendix B – Summary of Valuation Results

Municipality	Oak Hill	Point Pleasant	Princeton		Star City	Welch	Weston		Westover	Williamson	
	Police	Police	Police	Fire	Police	Police	Police	Fire	Police	Police	Fire
<b>Plan Membership</b>											
-Actives	5	6	21	13	5	5	5	6	3	6	6
-Annuitants	6	6	19	15	5	3	4	3	4	8	11
-Inactives	0	0	0	1	0	0	0	0	0	0	0
<b>Total</b>	<b>11</b>	<b>12</b>	<b>40</b>	<b>29</b>	<b>10</b>	<b>8</b>	<b>9</b>	<b>9</b>	<b>7</b>	<b>14</b>	<b>17</b>
<b>Payroll</b>	\$236,871	\$243,936	\$901,229	\$591,104	\$232,406	\$231,369	\$195,405	\$160,759	\$146,944	\$177,175	\$164,833
<b>Expected Benefit Payments</b>	\$158,413	\$123,760	\$531,588	\$360,332	\$80,715	\$81,223	\$71,427	\$70,331	\$115,223	\$123,418	\$233,392
<b>Actuarial Accrued Liabilities</b>											
-Actives	\$1,274,675	\$2,137,869	\$3,296,876	\$4,220,175	\$674,113	\$1,206,377	\$509,105	\$515,897	\$892,829	\$948,033	\$477,545
-Annuitants	\$2,155,732	\$2,160,565	\$7,821,457	\$5,915,030	\$1,228,742	\$1,101,517	\$1,132,113	\$1,156,937	\$1,758,776	\$2,016,871	\$3,721,692
-Inactives	\$0	\$0	\$0	\$531,571	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$3,430,407</b>	<b>\$4,298,434</b>	<b>\$11,118,333</b>	<b>\$10,666,776</b>	<b>\$1,902,855</b>	<b>\$2,307,894</b>	<b>\$1,641,218</b>	<b>\$1,672,834</b>	<b>\$2,651,605</b>	<b>\$2,964,904</b>	<b>\$4,199,237</b>
<b>Market Value of Assets</b>	\$4,010,023	\$759,953	\$3,849,800	\$2,687,005	\$1,428,680	\$2,379,985	\$1,181,721	\$837,424	\$2,161,816	\$1,207,124	\$1,650,739
<b>Unfunded Actuarial Accrued Liability</b>	(\$579,616)	\$3,538,481	\$7,268,533	\$7,979,771	\$474,175	(\$72,091)	\$459,497	\$835,410	\$489,789	\$1,757,780	\$2,548,498
<b>Funded Ratio</b>	117%	18%	35%	25%	75%	103%	72%	50%	82%	41%	39%
<b>Net Employer Normal Cost</b>	\$54,230	\$112,013	\$327,931	\$264,175	\$53,296	\$57,476	\$71,875	\$53,310	\$47,547	\$68,288	\$54,916
<b>Contributions FYE 2017</b>											
Employer Contribution <sup>a</sup>	\$71,630	\$372,850	\$198,672	\$100,642	\$51,892	\$57,342	\$82,558	\$72,137	\$45,579	\$104,997	\$132,430
( % of Payroll )	30%	153%	22%	17%	22%	25%	42%	45%	31%	59%	80%
State Premium Tax Allocation	\$119,395	\$83,675	\$182,018	\$130,285	\$49,256	\$43,847	\$57,093	\$37,058	\$81,952	\$62,926	\$73,779
Employee Contribution	\$18,754	\$17,076	\$75,291	\$44,471	\$19,431	\$17,013	\$17,425	\$13,585	\$10,286	\$14,371	\$13,296
<b>Contributions FYE 2018</b>											
Employer Contribution <sup>a</sup>	\$54,230	\$362,748	\$212,579	\$107,687	\$55,524	\$57,476	\$71,875	\$57,502	\$47,547	\$98,759	\$145,515
( % of Payroll )	25%	150%	22%	18%	23%	27%	37%	37%	31%	57%	88%
State Premium Tax Allocation	\$113,824	\$81,955	\$201,554	\$134,652	\$49,907	\$47,542	\$52,510	\$52,550	\$74,862	\$76,084	\$73,098
Employee Contribution	\$17,530	\$16,953	\$80,704	\$45,602	\$20,622	\$15,757	\$17,511	\$13,119	\$10,671	\$14,019	\$13,383
<b>Additional 2018 Solvency Contribution <sup>b</sup></b>											
- To Receive State Tax Premium Allocation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
- And to provide Supplemental COLA Benefits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Interest Rate</b>	6.5%	5.0%	5.0%	4.5%	6.5%	6.5%	5.5%	6.0%	6.5%	5.0%	5.5%
<b>Funding Policy</b>	Optional from Standard	Optional from Standard	Alternative	Alternative	Alternative	Optional from Standard	Optional from Standard	Optional from Alternative	Optional from Standard	Optional	Optional

<sup>a</sup> Includes additional solvency contributions.

<sup>b</sup> Additional contributions needed in 2018 to satisfy the 15-year solvency test.

## Appendix C – Alternative Plans

### Optional Funding - Year of Crossover<sup>a</sup>

#### Alternative Plans

Plan Name	Year of Crossover FYE	Funded Ratio	Current Funds, Open		Current Funds, Closed		New Cost Sharing Fund		Total to Current closed Fund and New Cost Sharing Fund		Decrease Amount	Decrease % of Pay
			Projected Employer Contribution	Projected Employer Contribution	Projected Employer Contribution	Projected Employer Contribution	Projected Employer Contribution	Projected Employer Contribution	Projected Employer Contribution	Projected Employer Contribution		
			Amount	% of Pay	Amount	% of Pay	Amount	% of Pay	Amount	% of Pay		
Star City Police	2018	80%	\$ 55,524	22%	\$ 53,296	22%	\$ 992	10.5%	\$ 54,288	21%	\$ 1,236	0.5%
Parkersburg Fire	2022	35%	3,602,783	103%	3,493,174	107%	24,757	10.5%	3,517,931	101%	84,852	2.4%
Bluefield Police	2025	60%	542,037	36%	522,685	36%	7,246	10.5%	529,931	35%	12,106	0.8%
Clarksburg Police	2034	60%	2,970,204	66%	2,923,190	69%	25,699	10.5%	2,948,889	66%	21,315	0.5%
Clarksburg Fire	2034	52%	2,998,508	84%	2,929,689	86%	18,873	10.5%	2,948,562	82%	49,946	1.4%
Dunbar Fire	2034	47%	1,311,267	104%	1,259,362	108%	9,298	10.5%	1,268,660	101%	42,607	3.4%
Bluefield Fire	2044	71%	2,416,360	119%	2,387,261	123%	10,714	10.5%	2,397,975	118%	18,385	0.9%
Fairmont Police	2045	80%	4,750,714	97%	4,641,478	100%	26,950	10.5%	4,668,428	95%	82,286	1.7%
St. Albans Police	2045	86%	1,884,021	58%	1,862,961	60%	16,622	10.5%	1,879,583	58%	4,438	0.1%

#### Plans that are projected to remain alternative<sup>b</sup>

Beckley Police	2053	100%	\$ 4,652,857	56%
Beckley Fire	2053	70%	7,190,938	95%
Fairmont Fire	2053	100%	2,936,643	47%
Martinsburg Police	2053	34%	6,253,457	65%
Martinsburg Fire	2053	58%	7,585,166	103%
Morgantown Police	2053	35%	9,427,220	62%
Morgantown Fire	2053	50%	7,653,192	82%
Nitro Police	2053	50%	1,898,589	51%
Nitro Fire	2053	49%	1,768,975	71%
Parkersburg Police	2053	93%	13,307,466	113%
Princeton Police	2053	77%	2,269,622	60%
Princeton Fire	2053	12%	1,149,737	55%
South Charleston Police	2053	27%	4,382,720	63%
South Charleston Fire	2053	67%	7,878,227	116%
St. Albans Fire	2053	26%	2,748,059	82%
Weirton Police	2053	44%	6,458,741	99%

<sup>a</sup> Year of crossover means year sponsor contributions are lower if the sponsor decide to cover new entrants under the statewide cost sharing plan (West Virginia Municipal Police Officers and Firefighters Retirement System).

<sup>b</sup> Alternative contributions are lower during the entire 40-year projection period from 7/1/2016.

## Appendix C – Alternative Plans

Alternative Plans		Conservation Funding - Year of Crossover <sup>a</sup>											
				Current Funds, Open		Current Funds, Closed		New Cost Sharing Fund		Total to Current closed Fund and New Cost Sharing Fund			
		Plan Name	Year of Crossover FYE	Funded Ratio	Projected Employer Contribution Amount	Projected Employer Contribution % of Pay	Projected Employer Contribution Amount	Projected Employer Contribution % of Pay	Projected Employer Contribution Amount	Projected Employer Contribution % of Pay	Projected Employer Contribution Amount	Projected Employer Contribution % of Pay	Decrease Amount <sup>b</sup>
Beckley Police	2042	69%	\$ 2,607,363	49%	\$ 2,606,479	51%	\$ 25,281	10.5%	\$ 2,631,759	50%	(\$24,396)	(0.5)%	
Beckley Fire	2037	29%	2,435,820	60%	2,299,760	59%	17,618	10.5%	2,317,378	57%	118,442	2.9%	
Bluefield Police	2018	46%	337,553	33%	239,057	25%	8,200	10.5%	247,257	24%	90,296	8.9%	
Bluefield Fire	2026	20%	714,914	71%	706,719	73%	3,452	10.5%	710,172	71%	4,742	0.5%	
Clarksburg Police	2018	21%	1,006,110	49%	722,065	37%	12,084	10.5%	734,149	35%	271,961	13.1%	
Clarksburg Fire	2018	19%	1,015,700	56%	816,393	48%	12,283	10.5%	828,676	46%	187,024	10.3%	
Dunbar Fire	2018	7%	444,172	72%	429,580	71%	1,964	10.5%	431,543	70%	12,629	2.0%	
Fairmont Police	2024	20%	1,147,360	57%	1,094,735	58%	10,811	10.5%	1,105,546	55%	41,814	2.1%	
Fairmont Fire	2028	8%	2,077,760	93%	2,070,176	101%	18,825	10.5%	2,089,001	93%	(11,241)	(0.5)%	
Martinsburg Police	2043	20%	3,178,939	51%	3,023,051	50%	28,858	10.5%	3,051,910	49%	127,029	2.0%	
Martinsburg Fire	2034	10%	2,097,363	61%	2,083,272	63%	17,201	10.5%	2,100,473	61%	(3,110)	(0.1)%	
Morgantown Police	2041	20%	4,185,799	45%	4,042,391	46%	50,732	10.5%	4,093,123	44%	92,676	1.0%	
Morgantown Fire	2037	21%	2,592,400	52%	2,509,473	53%	24,695	10.5%	2,534,169	51%	58,231	1.2%	
Nitro Police	2018	32%	177,827	18%	54,845	6%	2,863	10.5%	57,708	6%	120,119	12.2%	
Nitro Fire	2025	13%	266,058	30%	252,210	29%	3,423	10.5%	255,633	28%	10,425	1.2%	
Parkersburg Police	2028	20%	2,451,889	55%	2,352,305	55%	22,771	10.5%	2,375,076	53%	76,813	1.7%	
Parkersburg Fire	2018	24%	2,748,546	100%	2,000,731	77%	14,370	10.5%	2,015,101	73%	733,445	26.7%	
Princeton Police	2024	36%	319,024	26%	311,272	27%	5,915	10.5%	317,188	26%	1,836	0.2%	
Princeton Fire	2050	9%	938,528	52%	931,976	54%	9,656	10.5%	941,633	52%	(3,105)	(0.2)%	
South Charleston Police	2041	14%	1,945,979	45%	1,934,737	47%	22,528	10.5%	1,957,265	46%	(11,286)	(0.3)%	
South Charleston Fire	2033	10%	2,035,884	66%	1,944,577	66%	15,337	10.5%	1,959,915	63%	75,969	2.5%	
St. Albans Police	2027	51%	557,413	35%	519,734	34%	5,499	10.5%	525,232	33%	32,181	2.0%	
St. Albans Fire	2043	6%	1,396,974	63%	1,327,203	63%	11,300	10.5%	1,338,503	60%	58,471	2.6%	
Star City Police	2018	78%	55,524	24%	18,656	8%	1,005	10.5%	19,661	8%	35,863	15.2%	
Weirton Police	2036	5%	2,044,672	59%	2,030,302	62%	17,382	10.5%	2,047,685	60%	(3,013)	(0.1)%	

<sup>a</sup> Year of crossover means year sponsor contributions are lower if the sponsor decides to cover new entrants under the statewide cost sharing plan (West Virginia Municipal Police Officers and Firefighters Retirement System).

<sup>b</sup> The year of cross over for plans with a small negative value occurs at the end of the fiscal year.

## Appendix C – Standard Plans

Standard Plans		Optional Funding - Year of Crossover <sup>a</sup>										Decrease Amount    Decrease % of Pay	
		Current Funds, Open		Current Funds, Closed		New Cost Sharing Fund		Total to Current closed Fund and New Cost Sharing Fund					
		Projected Employer Contribution Amount	Projected Employer Contribution % of Pay	Projected Employer Contribution Amount	Projected Employer Contribution % of Pay	Projected Employer Contribution Amount	Projected Employer Contribution % of Pay	Projected Employer Contribution Amount	Projected Employer Contribution % of Pay				
Plan Name	Year of Crossover FYE	Funded Ratio											
Charles Town Police <sup>1</sup>	2018	31%	\$ 83,964	NA	\$ 83,964	NA	NA	NA	\$ 83,964	NA	NA	NA	
Chester Police	2018	74%	\$ 50,662	35%	48,777	36%	\$ 1,214	10.5%	49,991	34%	\$ 671	0.5%	
Logan Police	2018	42%	178,464	59%	173,958	60%	1,487	10.5%	175,445	58%	3,019	1.0%	
Logan Fire	2018	50%	124,321	36%	122,338	36%	801	10.5%	123,139	36%	1,182	0.3%	
Vienna Police	2018	69%	388,216	36%	378,551	37%	4,718	10.5%	383,269	36%	4,947	0.5%	

<sup>a</sup> Year of crossover means year sponsor contributions are lower if the sponsor decides to cover new entrants under the statewide cost sharing plan (West Virginia Municipal Police Officers and Firefighters Retirement System).

<sup>1</sup> One plan, Charles Town Police is closed to new entrants.

## Appendix D – Comparison of Projected Employer Contribution Rates

Municipality	Charleston		Huntington		Morgantown		Parkersburg		Wheeling	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
<b>Funding Policy</b>	Conservation	Conservation	Optional from Alternative	Optional from Alternative	Alternative	Alternative	Alternative	Alternative	Optional from Alternative	Optional from Alternative
<b>Current Funding Policy</b>										
<b>2016</b>	64%	71%	73%	135%	20%	26%	38%	92%	73%	83%
<b>2026</b>	76%	93%	51%	92%	27%	36%	51%	134%	48%	52%
<b>2036</b>	75%	81%	30%	54%	37%	50%	67%	36%	29%	30%
<b>2046</b>	11%	11%	21%	35%	52%	68%	94%	34%	17%	19%
<b>2056</b>	11%	11%	11%	11%	71%	93%	39%	34%	11%	11%
<b>Optional Funding Policy<sup>a</sup></b>										
<b>2016</b>	NA	NA	73%	135%	20%	26%	38%	92%	73%	83%
<b>2026</b>	NA	NA	51%	92%	27%	36%	51%	88%	48%	52%
<b>2036</b>	NA	NA	30%	54%	37%	50%	67%	53%	29%	30%
<b>2046</b>	NA	NA	21%	35%	52%	68%	94%	29%	17%	19%
<b>2056</b>	NA	NA	11%	11%	71%	93%	39%	11%	11%	11%
<b>Conservation Funding Policy<sup>a</sup></b>										
<b>2016</b>	64%	71%	NA	NA	20%	26%	38%	92%	NA	NA
<b>2026</b>	76%	93%	NA	NA	27%	36%	51%	87%	NA	NA
<b>2036</b>	75%	81%	NA	NA	37%	49%	48%	74%	NA	NA
<b>2046</b>	11%	11%	NA	NA	46%	50%	55%	11%	NA	NA
<b>2056</b>	11%	11%	NA	NA	52%	55%	46%	11%	NA	NA

Under the Optional funding policy and Conservation funding policy, employer contribution rates are based on contributions and payroll for members in both the local police or fire pension fund and the statewide Municipal Police Officers and Firefighters Retirement System.

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower

## Appendix D – Comparison of Projected Employer Contribution Rates

Funding Policy	<u>Beckley</u>		<u>Bluefield</u>		<u>Clarksburg</u>		<u>Fairmont</u>		<u>Martinsburg</u>	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative
<b>Current Funding Policy</b>										
<b>2016</b>	22%	30%	31%	57%	45%	49%	45%	54%	22%	34%
<b>2026</b>	29%	43%	39%	70%	58%	69%	59%	83%	29%	45%
<b>2036</b>	41%	57%	50%	94%	78%	98%	76%	109%	41%	64%
<b>2046</b>	54%	79%	21%	136%	33%	34%	110%	147%	54%	86%
<b>2056</b>	29%	107%	21%	38%	33%	34%	37%	47%	74%	117%
<b>Optional Funding Policy<sup>a</sup></b>										
<b>2016</b>	22%	30%	31%	57%	45%	49%	45%	54%	22%	34%
<b>2026</b>	29%	43%	34%	70%	58%	69%	59%	83%	29%	45%
<b>2036</b>	41%	57%	23%	94%	62%	78%	76%	109%	41%	64%
<b>2046</b>	54%	79%	14%	111%	36%	46%	95%	147%	54%	86%
<b>2056</b>	29%	107%	10%	23%	11%	11%	22%	47%	74%	117%
<b>Conservation Funding Policy<sup>a</sup></b>										
<b>2016</b>	22%	30%	31%	57%	45%	49%	45%	54%	22%	34%
<b>2026</b>	29%	43%	34%	65%	40%	56%	52%	83%	29%	45%
<b>2036</b>	41%	55%	33%	58%	45%	63%	43%	75%	41%	60%
<b>2046</b>	47%	52%	11%	65%	42%	41%	55%	63%	46%	58%
<b>2056</b>	14%	54%	11%	46%	11%	11%	42%	52%	52%	59%

*Under the Optional funding policy and Conservation funding policy, employer contribution rates are based on contributions and payroll for members in both the local police or fire pension fund and the statewide Municipal Police Officers and Firefighters Retirement System.*

*<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower*

## Appendix D – Comparison of Projected Employer Contribution Rates

Funding Policy	<u>Moundville</u>		<u>South Charleston</u>		<u>St. Albans</u>		<u>Vienna</u>	<u>Weirton</u>		<u>Belle</u>	<u>Charles Town</u>
	Police	Fire	Police	Fire	Police	Fire	Police	Police	Fire	Police	Police <sup>b</sup>
	Optional from Alternative	Optional from Alternative	Alternative	Alternative	Alternative	Alternative	Standard	Alternative	Optional from Alternative	Optional from Standard	Standard
<b>Current Funding Policy</b>											
2016	20%	125%	21%	36%	26%	26%	32%	32%	48%	35%	67%
2026	14%	82%	27%	53%	34%	35%	29%	44%	20%	32%	85%
2036	11%	44%	38%	69%	45%	51%	21%	59%	13%	11%	1%
2046	11%	31%	52%	95%	65%	68%	19%	82%	11%	11%	1%
2056	11%	11%	70%	130%	28%	94%	19%	111%	11%	11%	1%
<b>Optional Funding Policy<sup>a</sup></b>											
2016	20%	125%	21%	36%	26%	26%	32%	32%	48%	35%	NA
2026	14%	82%	27%	53%	34%	35%	23%	44%	20%	32%	NA
2036	11%	44%	38%	69%	45%	51%	13%	59%	13%	11%	NA
2046	11%	31%	52%	95%	57%	68%	11%	82%	11%	11%	NA
2056	11%	11%	70%	130%	18%	94%	11%	111%	11%	11%	NA
<b>Conservation Funding Policy<sup>a</sup></b>											
2016	NA	NA	21%	36%	26%	26%	NA	32%	NA	NA	NA
2026	NA	NA	27%	53%	32%	35%	NA	44%	NA	NA	NA
2036	NA	NA	38%	57%	38%	51%	NA	58%	NA	NA	NA
2046	NA	NA	51%	60%	54%	57%	NA	63%	NA	NA	NA
2056	NA	NA	54%	61%	11%	61%	NA	63%	NA	NA	NA

Under the Optional funding policy and Conservation funding policy, employer contribution rates are based on contributions and payroll for members in both the local police or fire pension fund and the statewide Municipal Police Officers and Firefighters Retirement System.

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower

<sup>b</sup> Contributions as a percentage of expected benefit payments.

## Appendix D – Comparison of Projected Employer Contribution Rates

Funding Policy	Chester		Dunbar		Elkins		Grafton		Logan		Nitro	
	Police	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire	
	Standard	Optional from Alternative	Alternative	Optional from Standard	Optional from Standard	Optional from Standard	Optional from Standard	Standard	Standard	Alternative	Alternative	
<b>Current Funding Policy</b>												
<b>2016</b>	21%	25%	67%	54%	34%	38%	98%	38%	34%	17%	24%	
<b>2026</b>	27%	20%	85%	31%	18%	16%	72%	49%	31%	23%	31%	
<b>2036</b>	16%	12%	127%	13%	11%	11%	11%	32%	27%	32%	42%	
<b>2046</b>	14%	11%	39%	11%	11%	11%	11%	31%	25%	42%	59%	
<b>2056</b>	14%	11%	38%	11%	11%	11%	11%	31%	23%	58%	80%	
<b>Optional Funding Policy<sup>a</sup></b>												
<b>2016</b>	21%	25%	67%	54%	34%	38%	98%	38%	34%	17%	24%	
<b>2026</b>	24%	20%	85%	31%	18%	16%	72%	37%	28%	23%	31%	
<b>2036</b>	13%	12%	97%	13%	11%	11%	11%	12%	13%	32%	42%	
<b>2046</b>	11%	11%	56%	11%	11%	11%	11%	11%	11%	42%	59%	
<b>2056</b>	11%	11%	12%	11%	11%	11%	11%	11%	11%	58%	80%	
<b>Conservation Funding Policy<sup>a</sup></b>												
<b>2016</b>	NA	NA	67%	NA	NA	NA	NA	NA	NA	17%	24%	
<b>2026</b>	NA	NA	60%	NA	NA	NA	NA	NA	NA	31%	34%	
<b>2036</b>	NA	NA	79%	NA	NA	NA	NA	NA	NA	49%	43%	
<b>2046</b>	NA	NA	57%	NA	NA	NA	NA	NA	NA	42%	56%	
<b>2056</b>	NA	NA	11%	NA	NA	NA	NA	NA	NA	11%	44%	

Under the Optional funding policy and Conservation funding policy, employer contribution rates are based on contributions and payroll for members in both the local police or fire pension fund and the statewide Municipal Police Officers and Firefighters Retirement System.

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower



## Appendix D – Comparison of Projected Employer Contribution Rates

Funding Policy	Oak Hill	Point Pleasant	Princeton		Star City	Welch	Weston		Westover	Williamson	
	Police	Police	Police	Fire	Police	Police	Police	Fire	Police	Police	Fire
	Optional from Standard	Optional from Standard	Alternative	Alternative	Alternative	Optional from Standard	Optional from Standard	Optional from Alternative	Optional from Standard	Optional	Optional
<b>Current Funding Policy</b>											
2016	17%	99%	22%	17%	22%	24%	33%	62%	16%	61%	80%
2026	12%	60%	26%	24%	22%	24%	17%	28%	13%	31%	53%
2036	12%	11%	35%	33%	22%	11%	13%	19%	11%	18%	26%
2046	11%	11%	50%	45%	20%	11%	11%	11%	11%	11%	12%
2056	11%	11%	67%	62%	19%	11%	11%	11%	11%	11%	11%
<b>Optional Funding Policy<sup>a</sup></b>											
2016	17%	99%	22%	17%	22%	24%	33%	62%	16%	61%	80%
2026	12%	60%	26%	24%	18%	24%	17%	28%	13%	31%	53%
2036	12%	11%	35%	33%	12%	11%	13%	19%	11%	18%	26%
2046	11%	11%	50%	45%	11%	11%	11%	11%	11%	11%	12%
2056	11%	11%	67%	62%	11%	11%	11%	11%	11%	11%	11%
<b>Conservation Funding Policy<sup>a</sup></b>											
2016	NA	NA	22%	17%	22%	NA	NA	NA	NA	NA	NA
2026	NA	NA	24%	24%	20%	NA	NA	NA	NA	NA	NA
2036	NA	NA	30%	33%	12%	NA	NA	NA	NA	NA	NA
2046	NA	NA	48%	45%	11%	NA	NA	NA	NA	NA	NA
2056	NA	NA	11%	55%	11%	NA	NA	NA	NA	NA	NA

Under the Optional funding policy and Conservation funding policy, employer contribution rates are based on contributions and payroll for members in both the local police or fire pension fund and the statewide Municipal Police Officers and Firefighters Retirement System.

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower

## Appendix E – Comparison of Projected Funded Ratios

Municipality	Charleston		Huntington		Morgantown		Parkersburg		Wheeling	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
<b>Funding Policy</b>	Conservation	Conservation	Optional from Alternative	Optional from Alternative	Alternative	Alternative	Alternative	Alternative	Optional from Alternative	Optional from Alternative
<b>Current Funding Policy</b>										
<b>2016</b>	10%	8%	31%	17%	23%	25%	18%	22%	36%	30%
<b>2026</b>	20%	18%	50%	38%	19%	21%	19%	49%	54%	50%
<b>2036</b>	41%	40%	61%	53%	19%	20%	31%	100%	69%	63%
<b>2046</b>	100%	100%	83%	79%	25%	32%	59%	100%	88%	84%
<b>2056</b>	100%	100%	100%	100%	42%	61%	100%	100%	100%	100%
<b>Optional Funding Policy<sup>a</sup></b>										
<b>2016</b>	NA	NA	31%	17%	23%	25%	18%	22%	36%	30%
<b>2026</b>	NA	NA	50%	38%	19%	21%	19%	44%	54%	50%
<b>2036</b>	NA	NA	61%	53%	19%	20%	31%	62%	69%	63%
<b>2046</b>	NA	NA	83%	79%	25%	32%	59%	88%	88%	84%
<b>2056</b>	NA	NA	100%	100%	42%	61%	100%	100%	100%	100%
<b>Conservation Funding Policy<sup>a</sup></b>										
<b>2016</b>	10%	8%	NA	NA	23%	25%	18%	22%	NA	NA
<b>2026</b>	20%	18%	NA	NA	19%	21%	19%	32%	NA	NA
<b>2036</b>	41%	40%	NA	NA	19%	20%	25%	55%	NA	NA
<b>2046</b>	100%	100%	NA	NA	23%	26%	37%	100%	NA	NA
<b>2056</b>	100%	100%	NA	NA	32%	38%	68%	100%	NA	NA

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower

## Appendix E – Comparison of Projected Funded Ratios

Funding Policy	<u>Beckley</u>		<u>Bluefield</u>		<u>Clarksburg</u>		<u>Fairmont</u>		<u>Martinsburg</u>	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative	Alternative
<b>Current Funding Policy</b>										
<b>2016</b>	57%	38%	43%	21%	19%	18%	17%	4%	22%	7%
<b>2026</b>	57%	29%	62%	20%	36%	30%	22%	7%	19%	6%
<b>2036</b>	62%	28%	94%	39%	68%	60%	44%	22%	18%	13%
<b>2046</b>	78%	45%	100%	83%	100%	100%	85%	69%	23%	32%
<b>2056</b>	100%	84%	100%	100%	100%	100%	100%	100%	41%	72%
<b>Optional Funding Policy<sup>a</sup></b>										
<b>2016</b>	57%	38%	43%	21%	19%	18%	17%	4%	22%	7%
<b>2026</b>	57%	29%	62%	20%	36%	30%	22%	7%	19%	6%
<b>2036</b>	62%	28%	81%	39%	67%	59%	44%	22%	18%	13%
<b>2046</b>	78%	45%	97%	82%	93%	90%	85%	69%	23%	32%
<b>2056</b>	100%	84%	100%	100%	100%	100%	100%	100%	41%	72%
<b>Conservation Funding Policy<sup>a</sup></b>										
<b>2016</b>	57%	38%	43%	21%	19%	18%	17%	4%	22%	7%
<b>2026</b>	57%	29%	60%	20%	27%	24%	22%	7%	19%	6%
<b>2036</b>	62%	28%	86%	26%	38%	39%	30%	16%	18%	12%
<b>2046</b>	78%	36%	100%	40%	69%	79%	46%	30%	21%	23%
<b>2056</b>	100%	55%	100%	77%	100%	100%	93%	65%	28%	42%

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower

## Appendix E – Comparison of Projected Funded Ratios

Funding Policy	Moundsville		South Charleston		St. Albans		Vienna	Weirton		Belle	Charles Town
	Police	Fire	Police	Fire	Police	Fire	Police	Police	Fire	Police	Police
	Optional from Alternative	Optional from Alternative	Alternative	Alternative	Alternative	Alternative	Standard	Alternative	Optional from Alternative	Optional from Standard	Standard
<b>Current Funding Policy</b>											
<b>2016</b>	66%	23%	10%	6%	44%	13%	67%	11%	68%	73%	30%
<b>2026</b>	77%	32%	8%	6%	50%	7%	90%	3%	80%	88%	58%
<b>2036</b>	87%	38%	12%	14%	64%	3%	100%	5%	90%	100%	100%
<b>2046</b>	100%	71%	18%	38%	90%	11%	100%	22%	100%	100%	100%
<b>2056</b>	100%	100%	33%	83%	100%	35%	100%	56%	100%	100%	100%
<b>Optional Funding Policy<sup>a</sup></b>											
<b>2016</b>	66%	23%	10%	6%	44%	13%	67%	11%	68%	73%	NA
<b>2026</b>	77%	32%	8%	6%	50%	7%	91%	3%	80%	88%	NA
<b>2036</b>	87%	38%	12%	14%	64%	3%	100%	5%	90%	100%	NA
<b>2046</b>	100%	71%	18%	38%	90%	11%	100%	22%	100%	100%	NA
<b>2056</b>	100%	100%	33%	83%	100%	35%	100%	56%	100%	100%	NA
<b>Conservation Funding Policy<sup>a</sup></b>											
<b>2016</b>	NA	NA	10%	6%	44%	13%	NA	11%	NA	NA	NA
<b>2026</b>	NA	NA	8%	6%	50%	7%	NA	3%	NA	NA	NA
<b>2036</b>	NA	NA	12%	12%	61%	3%	NA	5%	NA	NA	NA
<b>2046</b>	NA	NA	18%	22%	91%	9%	NA	14%	NA	NA	NA
<b>2056</b>	NA	NA	28%	43%	100%	20%	NA	32%	NA	NA	NA

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower

## Appendix E – Comparison of Projected Funded Ratios

Funding Policy	<u>Chester</u>			<u>Dunbar</u>		<u>Elkins</u>		<u>Grafton</u>		<u>Logan</u>		<u>Nitro</u>	
	Police	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
	Standard	Optional from Alternative	Alternative	Optional from Standard	Optional from Standard	Optional from Standard	Optional from Standard	Standard	Standard	Alternative	Alternative		
<b>Current Funding Policy</b>													
<b>2016</b>	73%	70%	5%	57%	99%	64%	55%	36%	43%	32%	10%		
<b>2026</b>	89%	82%	20%	85%	100%	90%	83%	86%	90%	37%	14%		
<b>2036</b>	100%	94%	56%	100%	100%	100%	100%	100%	100%	36%	20%		
<b>2046</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%	41%	34%		
<b>2056</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%	55%	58%		
<b>Optional Funding Policy<sup>a</sup></b>													
<b>2016</b>	73%	70%	5%	57%	99%	64%	55%	36%	43%	32%	10%		
<b>2026</b>	89%	82%	20%	85%	108%	90%	83%	86%	90%	37%	14%		
<b>2036</b>	100%	94%	54%	100%	115%	100%	100%	100%	100%	36%	20%		
<b>2046</b>	100%	100%	88%	100%	134%	100%	100%	100%	100%	41%	34%		
<b>2056</b>	100%	100%	100%	100%	189%	100%	100%	100%	100%	55%	58%		
<b>Conservation Funding Policy<sup>a</sup></b>													
<b>2016</b>	NA	NA	5%	NA	NA	NA	NA	NA	NA	32%	10%		
<b>2026</b>	NA	NA	14%	NA	NA	NA	NA	NA	NA	32%	14%		
<b>2036</b>	NA	NA	27%	NA	NA	NA	NA	NA	NA	45%	23%		
<b>2046</b>	NA	NA	63%	NA	NA	NA	NA	NA	NA	82%	39%		
<b>2056</b>	NA	NA	100%	NA	NA	NA	NA	NA	NA	100%	84%		

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower

## Appendix E – Comparison of Projected Funded Ratios

Funding Policy	Oak Hill	Point Pleasant	Princeton		Star City	Welch	Weston		Westover	Williamson	
	Police	Police	Police	Fire	Police	Police	Police	Fire	Police	Police	Fire
	Optional from Standard	Optional from Standard	Alternative	Alternative	Alternative	Optional from Standard	Optional from Standard	Optional from Alternative	Optional from Standard	Optional	Optional
<b>Current Funding Policy</b>											
2016	117%	18%	35%	25%	75%	103%	72%	50%	82%	41%	39%
2026	126%	76%	37%	18%	95%	100%	100%	73%	100%	63%	55%
2036	141%	100%	46%	9%	100%	100%	100%	95%	100%	78%	71%
2046	190%	100%	61%	7%	100%	100%	100%	100%	100%	100%	89%
2056	329%	100%	86%	16%	100%	100%	100%	100%	100%	100%	100%
<b>Optional Funding Policy<sup>a</sup></b>											
2016	117%	18%	35%	25%	75%	103%	72%	50%	82%	41%	39%
2026	126%	76%	37%	18%	96%	100%	100%	73%	100%	63%	55%
2036	141%	100%	46%	9%	100%	100%	100%	95%	100%	78%	71%
2046	190%	100%	61%	7%	100%	100%	100%	100%	100%	100%	89%
2056	329%	100%	86%	16%	100%	100%	100%	100%	100%	100%	100%
<b>Conservation Funding Policy<sup>a</sup></b>											
2016	NA	NA	35%	25%	75%	NA	NA	NA	NA	NA	NA
2026	NA	NA	37%	18%	86%	NA	NA	NA	NA	NA	NA
2036	NA	NA	42%	9%	100%	NA	NA	NA	NA	NA	NA
2046	NA	NA	60%	7%	100%	NA	NA	NA	NA	NA	NA
2056	NA	NA	100%	14%	100%	NA	NA	NA	NA	NA	NA

<sup>a</sup> Assumes the funding policy change will occur in the year the employer contribution is projected to be lower

## Appendix F – Reconciliation of Assets 6/30/2016

Municipality	Charleston		Huntington		Morgantown		Parkersburg		Wheeling	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
A. Market Value of Assets Beginning of Year	\$16,082,384	\$13,888,494	\$28,541,102	\$18,612,247	\$14,434,407	\$11,510,264	\$10,313,547	\$12,190,212	\$19,910,004	\$19,513,272
Adjustment to Market Value of Assets at Beginning of Year	\$1,313	\$0	(\$2)	\$0	\$0	\$0	(\$1)	(\$1)	\$16,803	(\$844,433)
Market Value of Assets Beginning of Year	\$16,083,697	\$13,888,494	\$28,541,100	\$18,612,247	\$14,434,407	\$11,510,264	\$10,313,546	\$12,190,211	\$19,926,807	\$18,668,839
1. Revenue During Fiscal Year										
(a) Employee Contribution	\$556,799	\$580,188	\$313,939	\$283,660	\$360,533	\$202,830	\$251,761	\$210,015	\$225,578	\$277,761
(b) Governmental Contribution										
(i) From Local Government	\$5,226,466	\$5,300,144	\$3,775,581	\$5,233,536	\$848,356	\$728,343	\$1,415,268	\$2,520,721	\$1,885,979	\$3,743,927
(ii) From State Government	\$1,632,410	\$1,606,659	\$1,047,042	\$1,122,171	\$597,542	\$460,023	\$634,723	\$739,045	\$880,044	\$1,165,340
(iii) Reallocation from State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iv) Total	\$6,858,876	\$6,906,803	\$4,822,623	\$6,355,707	\$1,445,898	\$1,188,366	\$2,049,991	\$3,259,766	\$2,766,023	\$4,909,267
(c) Earnings on Investments										
(i) Net Appreciation/(Depreciation)	\$488,339	\$505,646	(\$54,267)	\$404,016	(\$648,291)	(\$533,110)	(\$384,096)	\$31,506	(\$881,671)	(\$593,687)
(ii) Bond Interest	\$70,767	\$80,588	\$320,504	\$116,360	\$106,965	\$84,708	\$53,798	\$282,867	\$220,943	\$214,037
(iii) Dividends	\$197,266	\$166,085	\$585,877	\$295,372	\$211,856	\$167,744	\$155,610	\$137,912	\$186,468	\$183,565
(iv) Net Realized Gain (Loss) on Sale/Exchange	\$0	\$0	\$0	\$0	\$125,473	\$117,380	\$3,777	(\$317,786)	\$253,609	\$53,664
(v) Other	\$51	\$0	\$456	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(vi) Less Investment Expense	(\$73,218)	(\$66,234)	\$0	\$0	(\$109,460)	(\$87,064)	(\$76,244)	(\$80,946)	(\$69,423)	(\$67,139)
(vii) Total	\$683,205	\$686,085	\$852,570	\$815,748	(\$313,457)	(\$250,342)	(\$247,155)	\$53,553	(\$290,074)	(\$209,560)
(d) Other Revenue	\$0	\$0	\$90	\$584	\$267	\$0	\$2	\$540	\$817	\$495
(e) Net Receivable Investment Income	\$12,606	\$9,594	\$0	\$0	\$0	\$0	\$7,171	\$52,841	\$0	\$0
(f) Receivable Contribution <sup>a</sup>										
(i) From Employee Contributions	\$0	\$0	\$0	\$0	\$0	\$0	\$8,577	\$7,431	\$0	\$0
(ii) From Local Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iii) From State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iv) Total	\$0	\$0	\$0	\$0	\$0	\$0	\$8,577	\$7,431	\$0	\$0
(g) Total Revenue (sum of (a) through (f))	\$8,111,486	\$8,182,670	\$5,989,222	\$7,455,699	\$1,493,241	\$1,140,854	\$2,070,347	\$3,584,146	\$2,702,344	\$4,977,963
2. Expenditures During Fiscal Year										
(a) Benefits Paid	\$6,927,486	\$7,018,296	\$4,311,767	\$5,474,416	\$2,084,457	\$1,509,424	\$2,172,068	\$2,675,425	\$2,720,377	\$2,860,739
(b) Withdrawals	\$132,191	\$57,609	\$47,520	\$31,367	\$14,429	\$0	\$0	\$0	\$73,850	\$58,251
(c) Administrative Expenses	\$13,087	\$9,741	\$181,216	\$58,927	\$1,994	\$3,042	\$0	\$0	\$293	\$226
(d) Payable Benefits and Withdrawals	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(e) Payable Administrative Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) Total Expenditures (sum of (a) through (e))	\$7,072,764	\$7,085,646	\$4,540,503	\$5,564,710	\$2,100,880	\$1,512,466	\$2,172,068	\$2,675,425	\$2,794,520	\$2,919,216
B. Market Value of Assets End of Year										
[A + 1(g) - 2(f)]	\$17,122,419	\$14,985,518	\$29,989,819	\$20,503,236	\$13,826,768	\$11,138,652	\$10,211,825	\$13,098,932	\$19,834,631	\$20,727,586
C. Approximate Return on Assets	4.20%	4.77%	2.53%	4.67%	(2.21)%	(2.21)%	(2.31)%	0.85%	(1.45)%	(1.08)%

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.

## Appendix F – Reconciliation of Assets 6/30/2016

	Beckley		Bluefield		Clarksburg		Fairmont		Martinsburg	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
A. Market Value of Assets Beginning of Year	\$19,595,635	\$16,814,980	\$4,875,150	\$4,080,587	\$5,238,465	\$5,072,427	\$4,851,501	\$1,683,829	\$7,791,543	\$2,693,373
Adjustment to Market Value of Assets at Beginning of Year	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Market Value of Assets Beginning of Year	\$19,595,635	\$16,814,980	\$4,875,150	\$4,080,587	\$5,238,465	\$5,072,427	\$4,851,501	\$1,683,829	\$7,791,543	\$2,693,373
1. Revenue During Fiscal Year										
(a) Employee Contribution	\$183,395	\$167,650	\$88,383	\$54,875	\$157,241	\$145,720	\$137,663	\$165,045	\$222,731	\$163,644
(b) Governmental Contribution										
(i) From Local Government	\$448,978	\$588,285	\$270,265	\$333,140	\$929,217	\$936,850	\$667,776	\$922,550	\$586,589	\$695,534
(ii) From State Government	\$407,889	\$376,670	\$250,670	\$235,509	\$404,273	\$424,421	\$336,647	\$418,443	\$434,432	\$331,954
(iii) Reallocation from State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iv) Total	\$856,867	\$964,955	\$520,935	\$568,649	\$1,333,490	\$1,361,271	\$1,004,423	\$1,340,993	\$1,021,021	\$1,027,488
(c) Earnings on Investments										
(i) Net Appreciation/(Depreciation)	\$4,074	(\$14,806)	\$73,128	(\$23,123)	(\$231,212)	\$231,197	(\$43,988)	(\$40,409)	(\$12,113)	(\$179,874)
(ii) Bond Interest	\$124,084	\$97,143	\$29,501	\$97,571	\$343	\$34,048	\$0	\$1,950	\$6,095	\$4,712
(iii) Dividends	\$424,199	\$418,485	\$63,121	\$47,322	\$58,763	\$60,490	\$189,962	\$58,665	\$190,573	\$166,768
(iv) Net Realized Gain (Loss) on Sale/Exchange	\$390,345	\$304,114	(\$3,381)	(\$33,013)	\$189,242	\$8,048	\$0	(\$101)	\$0	\$0
(v) Other	\$0	\$0	(\$517)	\$0	\$48	\$24	\$682	\$965	\$0	\$0
(vi) Less Investment Expense	(\$67,126)	(\$57,301)	(\$4,660)	\$0	(\$38,419)	(\$18,295)	\$0	\$0	(\$23,475)	(\$16,396)
(vii) Total	\$875,576	\$747,635	\$157,192	\$88,757	(\$21,235)	\$315,512	\$146,656	\$21,070	\$161,080	(\$24,790)
(d) Other Revenue	\$0	\$0	\$2,566	\$1,342	\$0	\$0	\$25,339	\$25,698	\$0	\$0
(e) Net Receivable Investment Income	\$50,780	\$41,654	\$0	\$0	\$0	\$0	\$273	\$599	\$0	\$0
(f) Receivable Contribution <sup>a</sup>										
(i) From Employee Contributions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(ii) From Local Government	\$0	\$0	\$0	\$0	\$0	\$0	\$1,760	\$1,760	\$0	\$0
(iii) From State Government	\$37,113	\$34,273	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iv) Total	\$37,113	\$34,273	\$0	\$0	\$0	\$0	\$1,760	\$1,760	\$0	\$0
(g) Total Revenue (sum of (a) through (f))	\$2,003,731	\$1,956,167	\$769,076	\$713,623	\$1,469,496	\$1,822,503	\$1,316,114	\$1,555,165	\$1,404,832	\$1,166,342
2. Expenditures During Fiscal Year										
(a) Benefits Paid	\$1,550,422	\$1,787,888	\$519,917	\$785,233	\$1,160,463	\$1,239,292	\$1,127,781	\$1,547,141	\$1,264,267	\$1,252,530
(b) Withdrawals	\$11,785	\$16,024	\$65,320	\$28,508	\$47,953	\$0	\$41,986	\$0	\$61,442	\$33,001
(c) Administrative Expenses	\$5,487	\$295	\$300	\$150	\$7,750	\$6,000	\$951	\$1,433	\$0	\$1,000
(d) Payable Benefits and Withdrawals	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,508	\$8,720
(e) Payable Administrative Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) Total Expenditures (sum of (a) through (e))	\$1,567,694	\$1,804,207	\$585,537	\$813,891	\$1,216,166	\$1,245,292	\$1,170,718	\$1,548,574	\$1,327,217	\$1,295,251
B. Market Value of Assets End of Year										
[A + 1(g) - 2(f)]	\$20,031,672	\$16,966,940	\$5,058,689	\$3,980,319	\$5,491,795	\$5,649,638	\$4,996,897	\$1,690,420	\$7,869,158	\$2,564,464
C. Approximate Return on Assets	4.78%	4.81%	3.26%	2.26%	(0.54)%	5.95%	3.54%	2.77%	2.08%	(0.97)%

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.



## Appendix F – Reconciliation of Assets 6/30/2016

	Moundsville		South Charleston		St. Albans		Vienna	Weirton		Belle	Charles Town
	Police	Fire	Police	Fire	Police	Fire	Police	Police	Fire	Police	Police
A. Market Value of Assets Beginning of Year	\$4,844,225	\$1,274,365	\$2,730,353	\$1,902,157	\$6,397,155	\$2,615,950	\$6,594,688	\$4,464,863	\$9,183,163	\$1,436,263	\$462,469
Adjustment to Market Value of Assets at Beginning of Year	\$0	\$0	\$0	(\$15,965)	\$0	\$0	\$13,336	\$0	\$0	\$0	\$0
Market Value of Assets Beginning of Year	\$4,844,225	\$1,274,365	\$2,730,353	\$1,886,192	\$6,397,155	\$2,615,950	\$6,608,024	\$4,464,863	\$9,183,163	\$1,436,263	\$462,469
1. Revenue During Fiscal Year											
(a) Employee Contribution	\$30,457	\$10,856	\$143,722	\$151,787	\$116,759	\$99,072	\$80,580	\$163,095	\$82,461	\$3,382	\$0
(b) Governmental Contribution											
(i) From Local Government	\$101,449	\$224,370	\$358,545	\$644,495	\$264,823	\$224,816	\$179,764	\$626,941	\$247,273	\$19,948	\$73,086
(ii) From State Government	\$120,275	\$60,938	\$424,873	\$390,915	\$209,287	\$209,613	\$155,732	\$345,588	\$207,993	\$31,806	\$12,785
(iii) Reallocation from State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iv) Total	\$221,724	\$285,308	\$783,418	\$1,035,410	\$474,110	\$434,429	\$335,496	\$972,529	\$455,266	\$51,754	\$85,871
(c) Earnings on Investments											
(i) Net Appreciation/(Depreciation)	(\$159,342)	(\$67,238)	(\$16,100)	\$9,928	(\$243,147)	(\$99,658)	\$0	(\$204,719)	(\$224,251)	(\$4,788)	\$0
(ii) Bond Interest	\$0	\$0	\$0	\$9,325	\$41,840	\$15,732	\$226,150	\$50,174	\$80,066	\$0	\$6,594
(iii) Dividends	\$161,864	\$12,120	\$12,138	\$20,593	\$93,622	\$36,128	\$0	\$58,378	\$128,460	\$5,973	\$2,698
(iv) Net Realized Gain (Loss) on Sale/Exchange	\$0	\$49,333	(\$30,263)	(\$834)	\$8,419	\$12,946	(\$169,007)	\$68,014	(\$14,196)	\$0	(\$3,922)
(v) Other	\$0	\$6	\$13,133	\$0	\$0	\$0	\$0	(\$255)	\$8,464	\$1,467	\$208
(vi) Less Investment Expense	(\$13,673)	(\$10,056)	\$0	(\$5,809)	(\$48,661)	(\$18,217)	\$0	(\$17,732)	(\$29,687)	\$0	(\$16)
(vii) Total	(\$11,151)	(\$15,835)	(\$21,092)	\$33,203	(\$147,927)	(\$53,069)	\$57,143	(\$46,140)	(\$51,144)	\$2,652	\$5,562
(d) Other Revenue	\$0	\$0	\$2,294	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,390
(e) Net Receivable Investment Income	\$0	\$0	\$0	\$0	\$0	\$0	\$10,033	\$0	\$0	\$0	\$0
(f) Receivable Contribution <sup>a</sup>											
(i) From Employee Contributions	\$0	\$0	\$0	\$0	\$0	\$0	\$3,079	\$0	\$0	\$0	\$0
(ii) From Local Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iii) From State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iv) Total	\$0	\$0	\$0	\$0	\$0	\$0	\$3,079	\$0	\$0	\$0	\$0
(g) Total Revenue (sum of (a) through (f))	\$241,030	\$280,329	\$908,342	\$1,220,400	\$442,942	\$480,432	\$486,331	\$1,089,484	\$486,583	\$57,788	\$96,823
2. Expenditures During Fiscal Year											
(a) Benefits Paid	\$261,000	\$329,316	\$908,898	\$1,049,562	\$525,224	\$646,025	\$383,756	\$1,498,119	\$651,641	\$140,522	\$109,553
(b) Withdrawals	\$0	\$0	\$0	\$20,243	\$0	\$0	\$0	\$27,917	\$0	\$15,204	\$0
(c) Administrative Expenses	\$456	\$620	\$9,425	\$3,000	\$600	\$6,201	\$35,726	\$138	\$3,766	\$1,882	\$2,478
(d) Payable Benefits and Withdrawals	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(e) Payable Administrative Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) Total Expenditures (sum of (a) through (e))	\$261,456	\$329,936	\$918,323	\$1,072,805	\$525,824	\$652,226	\$419,482	\$1,526,174	\$655,407	\$157,608	\$112,031
B. Market Value of Assets End of Year											
[A + 1(g) - 2(f)]	\$4,823,799	\$1,224,758	\$2,720,372	\$2,033,787	\$6,314,273	\$2,444,156	\$6,674,873	\$4,028,173	\$9,014,339	\$1,336,443	\$447,261
C. Approximate Return on Assets	(0.24)%	(1.31)%	(1.03)%	1.55%	(2.31)%	(2.32)%	0.48%	(1.08)%	(0.60)%	0.06%	1.89%

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.

## Appendix F – Reconciliation of Assets 6/30/2016

	Chester		Dunbar		Elkins		Grafton		Logan		Nitro	
	Police	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire	
A. Market Value of Assets Beginning of Year	\$1,811,121	\$5,461,403	\$629,458	\$2,794,044	\$1,244,804	\$1,262,614	\$1,590,053	\$634,949	\$596,085	\$2,988,258	\$777,651	
Adjustment to Market Value of Assets at Beginning of Year	(\$83,779)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Market Value of Assets Beginning of Year	\$1,727,342	\$5,461,403	\$629,458	\$2,794,044	\$1,244,804	\$1,262,614	\$1,590,053	\$634,949	\$596,085	\$2,988,258	\$777,651	
1. Revenue During Fiscal Year												
(a) Employee Contribution	\$14,130	\$41,579	\$52,073	\$29,621	\$11,227	\$14,885	\$4,707	\$19,181	\$21,178	\$79,333	\$55,075	
(b) Governmental Contribution												
(i) From Local Government	\$24,840	\$121,105	\$387,957	\$247,173	\$26,198	\$70,895	\$64,100	\$0	\$0	\$155,321	\$144,719	
(ii) From State Government	\$83,780	\$146,458	\$153,340	\$179,859	\$60,020	\$54,118	\$29,467	\$0	\$0	\$161,900	\$143,315	
(iii) Reallocation from State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(iv) Total	\$108,620	\$267,563	\$541,297	\$427,032	\$86,218	\$125,013	\$93,567	\$0	\$0	\$317,221	\$288,034	
(c) Earnings on Investments												
(i) Net Appreciation/(Depreciation)	(\$114,087)	\$411	(\$52)	\$25,117	\$10,752	\$46,307	(\$16,697)	(\$27,705)	(\$11,314)	\$114,531	\$7,405	
(ii) Bond Interest	\$12,004	\$59,661	\$63	\$31,159	\$13,320	\$0	\$0	\$7,175	\$15,890	\$17,553	\$5,775	
(iii) Dividends	\$41,580	\$67,186	\$11,655	\$30,067	\$12,640	\$0	\$0	\$16,129	\$5,710	\$36,488	\$8,794	
(iv) Net Realized Gain (Loss) on Sale/Exchange	\$13,202	(\$102,648)	(\$8,540)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(v) Other	\$0	\$19	\$830	\$0	\$0	\$1,358	\$3	\$1,093	\$882	\$1,992	\$0	
(vi) Less Investment Expense	(\$6,630)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$13,232)	(\$2,788)	
(vii) Total	(\$53,931)	\$24,629	\$3,956	\$86,343	\$36,712	\$47,665	(\$16,694)	(\$3,308)	\$11,168	\$157,332	\$19,186	
(d) Other Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(e) Net Receivable Investment Income	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(f) Receivable Contribution <sup>a</sup>												
(i) From Employee Contributions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(ii) From Local Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,811	\$40,811	\$0	\$0	
(iii) From State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,146	\$28,513	\$0	\$0	
(iv) Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$63,957	\$69,324	\$0	\$0	
(g) Total Revenue (sum of (a) through (f))	\$68,819	\$333,771	\$597,326	\$542,996	\$134,157	\$187,563	\$81,580	\$79,830	\$101,671	\$553,886	\$362,295	
2. Expenditures During Fiscal Year												
(a) Benefits Paid	\$144,538	\$331,090	\$539,514	\$309,494	\$67,779	\$62,799	\$133,989	\$13,224	\$24,384	\$289,815	\$277,009	
(b) Withdrawals	\$11,130	\$9,934	\$0	\$14,921	\$0	\$9,516	\$0	\$9,105	\$0	\$0	\$0	
(c) Administrative Expenses	\$745	\$29,851	\$5,224	\$7,746	\$4,182	\$2,700	\$1,446	\$0	\$0	\$652	\$98	
(d) Payable Benefits and Withdrawals	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(e) Payable Administrative Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(f) Total Expenditures (sum of (a) through (e))	\$156,413	\$370,875	\$544,738	\$332,161	\$71,961	\$75,015	\$135,435	\$22,329	\$24,384	\$290,467	\$277,107	
B. Market Value of Assets End of Year												
[A + 1(g) - 2(f)]	\$1,639,748	\$5,424,299	\$682,046	\$3,004,879	\$1,307,000	\$1,375,162	\$1,536,198	\$692,450	\$673,372	\$3,251,677	\$862,839	
C. Approximate Return on Assets	(3.20)%	(0.10)%	(0.19)%	2.75%	2.59%	3.55%	(1.17)%	(0.52)%	1.88%	5.15%	2.35%	

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.

## Appendix F – Reconciliation of Assets 6/30/2016

	Oak Hill	Point Pleasant	Princeton	Star City	Welch	Weston	Westover	Williamson			
	Police	Police	Police	Fire	Police	Police	Police	Fire	Police	Police	Fire
A. Market Value of Assets Beginning of Year	\$4,032,762	\$734,012	\$3,991,089	\$2,812,016	\$1,380,845	\$2,322,822	\$813,822	\$829,961	\$2,130,210	\$1,140,291	\$1,653,426
Adjustment to Market Value of Assets at Beginning of Year	(\$5,732)	\$72,398	\$0	\$0	\$0	\$0	\$118,733	(\$1,467)	\$0	\$0	\$0
Market Value of Assets Beginning of Year	\$4,027,030	\$806,410	\$3,991,089	\$2,812,016	\$1,380,845	\$2,322,822	\$932,555	\$828,494	\$2,130,210	\$1,140,291	\$1,653,426
1. Revenue During Fiscal Year											
(a) Employee Contribution	\$25,540	\$16,437	\$76,114	\$44,131	\$19,840	\$18,496	\$29,258	\$14,684	\$9,776	\$13,142	\$14,529
(b) Governmental Contribution											
(i) From Local Government	\$65,000	\$36,565	\$185,674	\$94,060	\$52,800	\$50,150	\$82,614	\$42,000	\$102,000	\$103,331	\$153,163
(ii) From State Government	\$0	\$8,201	\$183,874	\$124,903	\$0	\$0	\$55,183	\$26,485	\$69,532	\$74,123	\$98,636
(iii) Reallocation from State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(iv) Total	\$65,000	\$44,766	\$369,548	\$218,963	\$52,800	\$50,150	\$137,797	\$68,485	\$171,532	\$177,454	\$251,799
(c) Earnings on Investments											
(i) Net Appreciation/(Depreciation)	(\$15,806)	\$5,250	(\$185,679)	(\$83,975)	(\$14,843)	\$43,424	\$2,334	(\$8,288)	(\$71,951)	\$0	(\$58,606)
(ii) Bond Interest	\$46,698	\$7	\$24,501	\$19,232	\$6,364	\$21,605	\$5,862	\$4,020	\$14,440	\$0	\$10,739
(iii) Dividends	\$64,223	\$43,438	\$58,307	\$41,970	\$42,841	\$74,466	\$22,509	\$23,075	\$32,642	\$0	\$24,314
(iv) Net Realized Gain (Loss) on Sale/Exchange	(\$31,924)	\$9,321	\$45,750	\$525	(\$13,964)	(\$23,946)	(\$7,939)	(\$13,766)	\$1,407	\$0	(\$1,484)
(v) Other	\$12	\$0	\$0	\$0	(\$875)	\$0	\$0	\$0	\$0	\$1,669	\$0
(vi) Less Investment Expense	(\$15,632)	(\$9,543)	(\$25,231)	(\$17,942)	(\$13,393)	(\$5,285)	\$0	\$0	(\$17,536)	\$0	\$0
(vii) Total	\$47,571	\$48,473	(\$82,352)	(\$40,190)	\$6,130	\$110,264	\$22,766	\$5,041	(\$40,998)	\$1,669	(\$25,037)
(d) Other Revenue	\$5,375	\$0	\$5,755	\$2,930	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(e) Net Receivable Investment Income	(\$3,997)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) Receivable Contribution <sup>a</sup>											
(i) From Employee Contributions	\$850	\$0	\$0	\$0	\$1,632	\$0	\$0	\$0	\$335	\$0	\$0
(ii) From Local Government	\$0	\$0	\$0	\$0	\$4,400	\$0	\$85,354	\$0	\$0	\$0	\$0
(iii) From State Government	\$0	\$0	\$0	\$0	\$51,076	\$0	\$49,857	\$0	\$0	\$0	\$0
(iv) Total	\$850	\$0	\$0	\$0	\$57,108	\$0	\$135,211	\$0	\$335	\$0	\$0
(g) Total Revenue (sum of (a) through (f))	\$140,339	\$109,676	\$369,065	\$225,834	\$135,878	\$178,910	\$325,032	\$88,210	\$140,645	\$192,265	\$241,291
2. Expenditures During Fiscal Year											
(a) Benefits Paid	\$122,217	\$127,733	\$487,446	\$350,586	\$76,469	\$121,747	\$67,226	\$71,032	\$109,039	\$122,898	\$229,709
(b) Withdrawals	\$35,129	\$27,900	\$22,728	\$0	\$11,574	\$0	\$0	\$0	\$0	\$1,570	\$0
(c) Administrative Expenses	\$0	\$0	\$180	\$259	\$0	\$0	\$8,640	\$8,248	\$0	\$964	\$14,269
(d) Payable Benefits and Withdrawals	\$0	\$500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(e) Payable Administrative Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) Total Expenditures (sum of (a) through (e))	\$157,346	\$156,133	\$510,354	\$350,845	\$88,043	\$121,747	\$75,866	\$79,280	\$109,039	\$125,432	\$243,978
B. Market Value of Assets End of Year											
[A + 1(g) - 2(f)]	\$4,010,023	\$759,953	\$3,849,800	\$2,687,005	\$1,428,680	\$2,379,985	\$1,181,721	\$837,424	\$2,161,816	\$1,207,124	\$1,650,739
C. Approximate Return on Assets	1.23%	6.09%	(1.98)%	(1.39)%	0.45%	4.80%	1.44%	(0.39)%	(1.89)%	0.06%	(2.36)%

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.

## Appendix G – Assets Held by Category as of 6/30/2016

Municipality	Charleston		Huntington		Morgantown		Parkersburg		Wheeling	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
1. Cash and Short-term Investments	\$2,226,681	\$2,470,110	\$2,131,124	\$1,065,443	\$911,118	\$896,398	\$1,069,566	\$1,103,694	\$740,307	\$1,315,498
2. Government Securities										
(a) US Treasury Bills, Notes and Bonds	\$2,602,944	\$1,754,029	\$3,607,575	\$1,001,496	\$0	\$0	\$892,955	\$2,610,954	\$3,862,313	\$3,750,834
(b) US State and Local Governmental Debt Securities	\$0	\$0	\$2,863,510	\$623,322	\$1,240,191	\$1,001,482	\$0	\$0	\$0	\$0
(c) Foreign Governmental Debt Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Other	\$0	\$0	\$2,840,468	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(e) Total Government Securities (sum of (a) through (d) )	\$2,602,944	\$1,754,029	\$9,311,553	\$1,624,818	\$1,240,191	\$1,001,482	\$892,955	\$2,610,954	\$3,862,313	\$3,750,834
3. Corporate Fixed Income										
(a) US Bonds	\$1,614,730	\$1,517,355	\$2,770,443	\$4,648,594	\$1,459,580	\$1,147,658	\$1,025,651	\$3,169,851	\$3,675,158	\$3,720,813
(b) US Mortgage or other Asset Backed Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$231,894	\$382,527	\$337,118
(c) US Mutual Fund Shares (Bonds)	\$0	\$0	\$1,013,625	\$767,459	\$0	\$0	\$0	\$0	\$0	\$0
(d) US Exchange Traded Funds (Bonds)	\$0	\$0	\$0	\$681,034	\$0	\$0	\$0	\$0	\$0	\$0
(e) International Bonds	\$0	\$0	\$0	\$50,014	\$0	\$0	\$0	\$0	\$0	\$0
(f) International Mutual Fund Shares (Bonds)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(g) International Exchange Traded Funds (Bonds)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(h) Total Corporate Fixed Income (sum of (a) through (g) )	\$1,614,730	\$1,517,355	\$3,784,068	\$6,147,101	\$1,459,580	\$1,147,658	\$1,025,651	\$3,401,745	\$4,057,685	\$4,057,931
4. Corporate Equity										
(a) US Equity	\$3,025,669	\$2,805,856	\$3,085,950	\$7,093,583	\$1,517,110	\$1,227,950	\$1,059,506	\$2,469,910	\$10,713,326	\$11,172,323
(b) US Mutual Fund Shares (Equity)	\$0	\$0	\$9,143,895	\$365,168	\$0	\$0	\$0	\$416,956	\$0	\$0
(c) US Exchange Traded Funds (Equity)	\$7,639,789	\$7,024,715	\$0	\$584,156	\$3,760,760	\$2,934,691	\$2,573,758	\$2,088,182	\$0	\$0
(d) International Equity	\$0	\$0	\$121,917	\$21,169	\$2,841,302	\$2,258,594	\$2,090,083	\$423,594	\$0	\$0
(e) International Mutual Fund Shares (Equity)	\$0	\$0	\$0	\$227,260	\$0	\$0	\$0	\$0	\$0	\$0
(f) International Exchange Traded Funds (Equity)	\$0	\$0	\$0	\$196,684	\$0	\$0	\$0	\$0	\$0	\$0
(g) Total Corporate Equity (sum of (a) through (f) )	\$10,665,458	\$9,830,571	\$12,351,762	\$8,488,020	\$8,119,172	\$6,421,235	\$5,723,347	\$5,398,642	\$10,713,326	\$11,172,323
5. Alternative Investments										
(a) Real Estate Investment Trust	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$80,290	\$0	\$0
(b) Private Equity Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) Hedge Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Other Alternative Investments	\$0	\$0	\$0	\$0	\$2,096,707	\$1,671,879	\$1,484,558	\$442,795	\$0	\$0
(e) Total Alternative Investments (sum of (a) through (d) )	\$0	\$0	\$0	\$0	\$2,096,707	\$1,671,879	\$1,484,558	\$523,085	\$0	\$0
6. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$540	\$461,000	\$431,000
7. Receivable Contributions <sup>a</sup>										
(a) From Employee Contributions	\$0	\$0	\$0	\$0	\$0	\$0	\$8,577	\$7,431	\$0	\$0
(b) From Local Government	\$0	\$0	\$1,887,791	\$2,616,768	\$0	\$0	\$0	\$0	\$0	\$0
(c) From State Government	\$0	\$0	\$523,521	\$561,086	\$0	\$0	\$0	\$0	\$0	\$0
(d) Total Receivable Contributions (sum of (a) through (c) )	\$0	\$0	\$2,411,312	\$3,177,854	\$0	\$0	\$8,577	\$7,431	\$0	\$0
8. Accruals										
(a) Receivable (other than State and Local Contributions)	\$12,606	\$9,594	\$0	\$0	\$0	\$0	\$7,171	\$52,841	\$0	\$0
(b) Less Payable	\$0	(\$596,141)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) Total	\$12,606	(\$586,547)	\$0	\$0	\$0	\$0	\$7,171	\$52,841	\$0	\$0
<b>Market Value of Assets End of Year</b> <b>[ sum of (1) through (8) ]</b>	<b>\$17,122,419</b>	<b>\$14,985,518</b>	<b>\$29,989,819</b>	<b>\$20,503,236</b>	<b>\$13,826,768</b>	<b>\$11,138,652</b>	<b>\$10,211,825</b>	<b>\$13,098,932</b>	<b>\$19,834,631</b>	<b>\$20,727,586</b>

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.

## Appendix G – Assets Held by Category as of 6/30/2016

	<u>Beckley</u>		<u>Bluefield</u>		<u>Clarksburg</u>		<u>Fairmont</u>		<u>Martinsburg</u>	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire
1. Cash and Short-term Investments	\$669,696	\$272,301	\$191,373	\$517,482	\$311,516	\$731,614	\$510,377	\$329,920	\$570,988	\$365,849
2. Government Securities										
(a) US Treasury Bills, Notes and Bonds	\$1,634,426	\$1,185,300	\$468,189	\$452,259	\$0	\$537,903	\$0	\$0	\$0	\$0
(b) US State and Local Governmental Debt Securities	\$164,162	\$25,672	\$0	\$24,809	\$0	\$0	\$0	\$0	\$0	\$0
(c) Foreign Governmental Debt Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(e) Total Government Securities (sum of (a) through (d) )	\$1,798,588	\$1,210,972	\$468,189	\$477,068	\$0	\$537,903	\$0	\$0	\$0	\$0
3. Corporate Fixed Income										
(a) US Bonds	\$5,602,668	\$4,739,186	\$1,189,752	\$1,317,150	\$0	\$886,710	\$0	\$75,715	\$0	\$0
(b) US Mortgage or other Asset Backed Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) US Mutual Fund Shares (Bonds)	\$1,199,778	\$668,848	\$0	\$0	\$2,063,608	\$0	\$1,834,255	\$391,051	\$900,071	\$676,565
(d) US Exchange Traded Funds (Bonds)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,448,208	\$0
(e) International Bonds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) International Mutual Fund Shares (Bonds)	\$0	\$0	\$0	\$0	\$0	\$0	\$214,691	\$40,934	\$0	\$0
(g) International Exchange Traded Funds (Bonds)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(h) Total Corporate Fixed Income (sum of (a) through (g) )	\$6,802,446	\$5,408,034	\$1,189,752	\$1,317,150	\$2,063,608	\$886,710	\$2,048,946	\$507,700	\$4,348,279	\$676,565
4. Corporate Equity										
(a) US Equity	\$6,555,184	\$5,684,211	\$2,767,232	\$28,590	\$0	\$1,017,322	\$0	\$0	\$609,046	\$474,855
(b) US Mutual Fund Shares (Equity)	\$3,153,453	\$3,456,867	\$0	\$1,463,858	\$3,116,671	\$0	\$2,036,075	\$586,084	\$914,012	\$893,177
(c) US Exchange Traded Funds (Equity)	\$0	\$0	\$442,143	\$0	\$0	\$2,315,272	\$0	\$0	\$0	\$0
(d) International Equity	\$26,876	\$18,776	\$0	\$176,171	\$0	\$0	\$0	\$0	\$752,594	\$0
(e) International Mutual Fund Shares (Equity)	\$248,013	\$249,953	\$0	\$0	\$0	\$0	\$399,466	\$264,357	\$675,747	\$0
(f) International Exchange Traded Funds (Equity)	\$0	\$0	\$0	\$0	\$0	\$160,817	\$0	\$0	\$0	\$0
(g) Total Corporate Equity (sum of (a) through (f) )	\$9,983,526	\$9,409,807	\$3,209,375	\$1,668,619	\$3,116,671	\$3,493,411	\$2,435,541	\$850,441	\$2,951,399	\$1,368,032
5. Alternative Investments										
(a) Real Estate Investment Trust	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$162,738
(b) Private Equity Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) Hedge Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Other Alternative Investments	\$689,523	\$589,899	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(e) Total Alternative Investments (sum of (a) through (d) )	\$689,523	\$589,899	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$162,738
6. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7. Receivable Contributions <sup>a</sup>										
(a) From Employee Contributions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(b) From Local Government	\$0	\$0	\$0	\$0	\$0	\$0	\$1,760	\$1,760	\$0	\$0
(c) From State Government	\$37,113	\$34,273	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Total Receivable Contributions (sum of (a) through (c) )	\$37,113	\$34,273	\$0	\$0	\$0	\$0	\$1,760	\$1,760	\$0	\$0
8. Accruals										
(a) Receivable (other than State and Local Contributions)	\$50,780	\$41,654	\$0	\$0	\$0	\$0	\$273	\$599	\$0	\$0
(b) Less Payable	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$1,508)	(\$8,720)
(c) Total	\$50,780	\$41,654	\$0	\$0	\$0	\$0	\$273	\$599	(\$1,508)	(\$8,720)
<b>Market Value of Assets End of Year</b>										
[ sum of (1) through (8) ]	\$20,031,672	\$16,966,940	\$5,058,689	\$3,980,319	\$5,491,795	\$5,649,638	\$4,996,897	\$1,690,420	\$7,869,158	\$2,564,464

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.

## Appendix G – Assets Held by Category as of 6/30/2016

	<u>Moundsville</u>		<u>South Charleston</u>		<u>St. Albans</u>		<u>Vienna</u>	<u>Weirton</u>		<u>Belle</u>	<u>Charles Town</u>
	Police	Fire	Police	Fire	Police	Fire	Police	Police	Fire	Police <sup>b</sup>	Police
1. Cash and Short-term Investments	\$84,492	\$140,819	\$1,686,313	\$384,895	\$708,138	\$400,006	\$125,529	\$137,546	\$71,821	\$15,463	\$99,441
2. Government Securities											
(a) US Treasury Bills, Notes and Bonds	\$2,058,479	\$0	\$0	\$148,328	\$564,965	\$196,646	\$554,477	\$0	\$0	\$0	\$93,825
(b) US State and Local Governmental Debt Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$103,271	\$103,271	\$0	\$0
(c) Foreign Governmental Debt Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Other	\$0	\$0	\$0	\$0	\$0	\$219,061	\$0	\$0	\$0	\$0	\$0
(e) Total Government Securities (sum of (a) through (d) )	\$2,058,479	\$0	\$0	\$148,328	\$564,965	\$415,707	\$554,477	\$103,271	\$103,271	\$0	\$93,825
3. Corporate Fixed Income											
(a) US Bonds	\$0	\$0	\$0	\$461,270	\$640,897	\$0	\$471,104	\$904,315	\$1,408,112	\$0	\$126,929
(b) US Mortgage or other Asset Backed Securities	\$0	\$116,956	\$0	\$0	\$0	\$0	\$503,490	\$0	\$0	\$0	\$0
(c) US Mutual Fund Shares (Bonds)	\$0	\$237,005	\$581,874	\$0	\$0	\$0	\$1,018,839	\$174,834	\$835,731	\$177,123	\$0
(d) US Exchange Traded Funds (Bonds)	\$0	\$0	\$0	\$0	\$0	\$0	\$156,041	\$355,846	\$1,204,455	\$0	\$0
(e) International Bonds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) International Mutual Fund Shares (Bonds)	\$0	\$0	\$402,964	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(g) International Exchange Traded Funds (Bonds)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(h) Total Corporate Fixed Income (sum of (a) through (g) )	\$0	\$353,961	\$984,838	\$461,270	\$640,897	\$0	\$2,149,474	\$1,434,995	\$3,448,298	\$177,123	\$126,929
4. Corporate Equity											
(a) US Equity	\$0	\$0	\$0	\$288,113	\$736,833	\$292,477	\$820,367	\$1,644,135	\$3,767,540	\$352,753	\$0
(b) US Mutual Fund Shares (Equity)	\$1,263,062	\$585,769	\$0	\$0	\$0	\$0	\$2,989,037	\$0	\$0	\$0	\$0
(c) US Exchange Traded Funds (Equity)	\$0	\$0	\$0	\$705,464	\$1,525,208	\$613,396	\$0	\$396,311	\$918,570	\$0	\$98,025
(d) International Equity	\$0	\$0	\$0	\$0	\$1,207,484	\$388,969	\$22,877	\$0	\$0	\$370,169	\$0
(e) International Mutual Fund Shares (Equity)	\$0	\$144,209	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) International Exchange Traded Funds (Equity)	\$1,417,766	\$0	\$0	\$45,717	\$0	\$0	\$0	\$311,915	\$704,839	\$0	\$29,041
(g) Total Corporate Equity (sum of (a) through (f) )	\$2,680,828	\$729,978	\$0	\$1,039,294	\$3,469,525	\$1,294,842	\$3,832,281	\$2,352,361	\$5,390,949	\$722,922	\$127,066
5. Alternative Investments											
(a) Real Estate Investment Trust	\$0	\$0	\$15,762	\$0	\$0	\$0	\$0	\$0	\$0	\$137,356	\$0
(b) Private Equity Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$137,175	\$0
(c) Hedge Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$146,404	\$0
(d) Other Alternative Investments	\$0	\$0	\$33,459	\$0	\$930,748	\$333,601	\$0	\$0	\$0	\$0	\$0
(e) Total Alternative Investments (sum of (a) through (d) )	\$0	\$0	\$49,221	\$0	\$930,748	\$333,601	\$0	\$0	\$0	\$420,935	\$0
6. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7. Receivable Contributions <sup>a</sup>											
(a) From Employee Contributions	\$0	\$0	\$0	\$0	\$0	\$0	\$3,079	\$0	\$0	\$0	\$0
(b) From Local Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) From State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Total Receivable Contributions (sum of (a) through (c) )	\$0	\$0	\$0	\$0	\$0	\$0	\$3,079	\$0	\$0	\$0	\$0
8. Accruals											
(a) Receivable (other than State and Local Contributions)	\$0	\$0	\$0	\$0	\$0	\$0	\$10,033	\$0	\$0	\$0	\$0
(b) Less Payable	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) Total	\$0	\$0	\$0	\$0	\$0	\$0	\$10,033	\$0	\$0	\$0	\$0
<b>Market Value of Assets End of Year</b>	<b>\$4,823,799</b>	<b>\$1,224,758</b>	<b>\$2,720,372</b>	<b>\$2,033,787</b>	<b>\$6,314,273</b>	<b>\$2,444,156</b>	<b>\$6,674,873</b>	<b>\$4,028,173</b>	<b>\$9,014,339</b>	<b>\$1,336,443</b>	<b>\$447,261</b>
<b>[ sum of (1) through (8) ]</b>											

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.

<sup>b</sup> Belle Policemen's Pension and Relief Fund assets are invested in the West Virginia Investment Management Board.

## Appendix G – Assets Held by Category as of 6/30/2016

	<u>Chester</u>		<u>Dunbar</u>		<u>Elkins</u>		<u>Grafton</u>		<u>Logan</u>		<u>Nitro</u>	
	Police	Police	Fire	Police	Fire	Police	Fire	Police	Fire	Police	Fire	
1. Cash and Short-term Investments	\$518,577	\$265,803	\$223,808	\$1,247,495	\$644,191	\$62,547	\$21,063	\$50,329	\$68,791	\$231,687	\$203,620	
2. Government Securities												
(a) US Treasury Bills, Notes and Bonds	\$0	\$2,182,755	\$0	\$0	\$0	\$4,332	\$371,778	\$0	\$0	\$0	\$0	
(b) US State and Local Governmental Debt Securities	\$0	\$603,726	\$0	\$0	\$0	\$0	\$0	\$14,885	\$14,885	\$50,347	\$0	
(c) Foreign Governmental Debt Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(d) Other	\$26,777	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(e) Total Government Securities (sum of (a) through (d) )	\$26,777	\$2,786,481	\$0	\$0	\$0	\$4,332	\$371,778	\$14,885	\$14,885	\$50,347	\$0	
3. Corporate Fixed Income												
(a) US Bonds	\$115,364	\$0	\$0	\$0	\$0	\$305,735	\$75,035	\$290,516	\$277,498	\$0	\$0	
(b) US Mortgage or other Asset Backed Securities	\$0	\$0	\$0	\$107,739	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(c) US Mutual Fund Shares (Bonds)	\$296,797	\$270,457	\$149,611	\$0	\$0	\$0	\$0	\$0	\$0	\$1,029,600	\$254,493	
(d) US Exchange Traded Funds (Bonds)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(e) International Bonds	\$0	\$0	\$0	\$0	\$0	\$0	\$428,029	\$0	\$0	\$0	\$0	
(f) International Mutual Fund Shares (Bonds)	\$24,059	\$0	\$101,653	\$0	\$0	\$475,860	\$0	\$0	\$0	\$0	\$0	
(g) International Exchange Traded Funds (Bonds)	\$0	\$0	\$28,001	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(h) Total Corporate Fixed Income (sum of (a) through (g) )	\$436,220	\$270,457	\$279,265	\$107,739	\$0	\$781,595	\$503,064	\$290,516	\$277,498	\$1,029,600	\$254,493	
4. Corporate Equity												
(a) US Equity	\$227,555	\$0	\$0	\$0	\$0	\$520,167	\$568,293	\$244,491	\$242,874	\$613,199	\$404,726	
(b) US Mutual Fund Shares (Equity)	\$430,619	\$147,965	\$9,963	\$0	\$0	\$6,521	\$64,065	\$28,272	\$0	\$1,323,455	\$0	
(c) US Exchange Traded Funds (Equity)	\$0	\$1,248,572	\$144,350	\$1,649,645	\$662,809	\$0	\$0	\$0	\$0	\$0	\$0	
(d) International Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(e) International Mutual Fund Shares (Equity)	\$0	\$705,021	\$24,660	\$0	\$0	\$0	\$7,935	\$0	\$0	\$0	\$0	
(f) International Exchange Traded Funds (Equity)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(g) Total Corporate Equity (sum of (a) through (f) )	\$658,174	\$2,101,558	\$178,973	\$1,649,645	\$662,809	\$526,688	\$640,293	\$272,763	\$242,874	\$1,936,654	\$404,726	
5. Alternative Investments												
(a) Real Estate Investment Trust	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(b) Private Equity Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(c) Hedge Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(d) Other Alternative Investments	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(e) Total Alternative Investments (sum of (a) through (d) )	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7. Receivable Contributions <sup>a</sup>												
(a) From Employee Contributions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,389	\$0	
(b) From Local Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,811	\$40,811	\$0	\$0	
(c) From State Government	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,146	\$28,513	\$0	\$0	
(d) Total Receivable Contributions (sum of (a) through (c) )	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$63,957	\$69,324	\$3,389	\$0	
8. Accruals												
(a) Receivable (other than State and Local Contributions)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(b) Less Payable	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
(c) Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>Market Value of Assets End of Year [ sum of (1) through (8) ]</b>	<b>\$1,639,748</b>	<b>\$5,424,299</b>	<b>\$682,046</b>	<b>\$3,004,879</b>	<b>\$1,307,000</b>	<b>\$1,375,162</b>	<b>\$1,536,198</b>	<b>\$692,450</b>	<b>\$673,372</b>	<b>\$3,251,677</b>	<b>\$862,839</b>	

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.

## Appendix G – Assets Held by Category as of 6/30/2016

	<u>Oak Hill</u>	<u>Point Pleasant</u>	<u>Princeton</u>		<u>Star City</u>	<u>Welch</u>	<u>Weston</u>		<u>Westover</u>	<u>Williamson</u>	
	Police	Police	Police	Fire	Police	Police	Police	Fire	Police	Police	Fire
1. Cash and Short-term Investments	\$157,310	\$16,085	\$449,036	\$263,610	\$28,086	\$547,328	\$295,441	\$166,274	\$266,045	\$1,207,124	\$231,972
2. Government Securities											
(a) US Treasury Bills, Notes and Bonds	\$599,930	\$0	\$0	\$239,497	\$0	\$0	\$76,060	\$76,061	\$0	\$0	\$142,443
(b) US State and Local Governmental Debt Securities	\$232,035	\$0	\$0	\$0	\$0	\$287,836	\$27,679	\$0	\$0	\$0	\$0
(c) Foreign Governmental Debt Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Other	\$0	\$0	\$0	\$0	\$50,032	\$0	\$0	\$0	\$0	\$0	\$0
(e) Total Government Securities (sum of (a) through (d) )	\$831,965	\$0	\$0	\$239,497	\$50,032	\$287,836	\$103,739	\$76,061	\$0	\$0	\$142,443
3. Corporate Fixed Income											
(a) US Bonds	\$672,988	\$0	\$347,010	\$266,566	\$134,820	\$236,346	\$0	\$0	\$0	\$0	\$163,237
(b) US Mortgage or other Asset Backed Securities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) US Mutual Fund Shares (Bonds)	\$405,139	\$0	\$379,071	\$0	\$456,478	\$0	\$379,602	\$137,664	\$0	\$0	\$0
(d) US Exchange Traded Funds (Bonds)	\$0	\$116,449	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(e) International Bonds	\$53,579	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(f) International Mutual Fund Shares (Bonds)	\$0	\$132,098	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(g) International Exchange Traded Funds (Bonds)	\$0	\$47,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(h) Total Corporate Fixed Income (sum of (a) through (g) )	\$1,131,706	\$296,079	\$726,081	\$266,566	\$591,298	\$236,346	\$379,602	\$137,664	\$409,640	\$0	\$163,237
4. Corporate Equity											
(a) US Equity	\$0	\$362,211	\$413,769	\$242,957	\$0	\$1,212,626	\$0	\$0	\$200,449	\$0	\$176,104
(b) US Mutual Fund Shares (Equity)	\$163,542	\$0	\$0	\$0	\$562,681	\$0	\$267,728	\$457,425	\$0	\$0	\$0
(c) US Exchange Traded Funds (Equity)	\$1,150,146	\$33,782	\$950,025	\$716,533	\$0	\$0	\$0	\$0	\$557,787	\$0	\$388,767
(d) International Equity	\$0	\$12,495	\$754,691	\$564,946	\$0	\$95,311	\$0	\$0	\$0	\$0	\$318,731
(e) International Mutual Fund Shares (Equity)	\$578,501	\$0	\$0	\$0	\$138,507	\$0	\$0	\$0	\$419,106	\$0	\$0
(f) International Exchange Traded Funds (Equity)	\$0	\$14,197	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(g) Total Corporate Equity (sum of (a) through (f) )	\$1,892,189	\$422,685	\$2,118,485	\$1,524,436	\$701,188	\$1,307,937	\$267,728	\$457,425	\$1,177,342	\$0	\$883,602
5. Alternative Investments											
(a) Real Estate Investment Trust	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(b) Private Equity Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) Hedge Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(d) Other Alternative Investments	\$0	\$25,604	\$556,198	\$392,896	\$0	\$538	\$0	\$0	\$308,454	\$0	\$229,485
(e) Total Alternative Investments (sum of (a) through (d) )	\$0	\$25,604	\$556,198	\$392,896	\$0	\$538	\$0	\$0	\$308,454	\$0	\$229,485
6. Other	\$0	\$0	\$0	\$0	\$968	\$0	\$0	\$0	\$0	\$0	\$0
7. Receivable Contributions <sup>a</sup>											
(a) From Employee Contributions	\$850	\$0	\$0	\$0	\$1,632	\$0	\$0	\$0	\$335	\$0	\$0
(b) From Local Government	\$0	\$0	\$0	\$0	\$4,400	\$0	\$85,354	\$0	\$0	\$0	\$0
(c) From State Government	\$0	\$0	\$0	\$0	\$51,076	\$0	\$49,857	\$0	\$0	\$0	\$0
(d) Total Receivable Contributions (sum of (a) through (c) )	\$850	\$0	\$0	\$0	\$57,108	\$0	\$135,211	\$0	\$335	\$0	\$0
8. Accruals											
(a) Receivable (other than State and Local Contributions)	(\$3,997)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(b) Less Payable	\$0	(\$500)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(c) Total	(\$3,997)	(\$500)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Market Value of Assets End of Year</b>	<b>\$4,010,023</b>	<b>\$759,953</b>	<b>\$3,849,800</b>	<b>\$2,687,005</b>	<b>\$1,428,680</b>	<b>\$2,379,985</b>	<b>\$1,181,721</b>	<b>\$837,424</b>	<b>\$2,161,816</b>	<b>\$1,207,124</b>	<b>\$1,650,739</b>
<b>[ sum of (1) through (8) ]</b>											

<sup>a</sup> Receivable contributions for plan year ending June 30, 2016.