

City of Nitro, West Virginia

## Firemen's Pension and Relief Fund

GASB Statement Nos. 67 and 68 Plan Reporting and  
Accounting Schedules

June 30, 2018



October 9, 2018

Mr. John Young, City Treasurer  
City of Nitro  
2009 20th Street  
Nitro, WV 25143

Captain Jonathan P. Atkins  
Pension Board Secretary  
City of Nitro Firemen's Pension and Relief Fund

Dear Mr. Young and Captain Atkins:

This report provides accounting and financial information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 for the City of Nitro, West Virginia Firemen's Pension and Relief Fund ("Plan"). These calculations have been made on a basis that is consistent with our understanding of these accounting standards.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems, on behalf of fiscal years beginning after June 15, 2013. GASB Statement No. 68 establishes accounting and financial reporting for State and local government employers who provide their employees (including former employees) pension benefits through a trust, and applies to fiscal years beginning after June 15, 2014.

This report contains GASB Statement Nos. 67 and 68 reporting information applicable to the plan year ending June 30, 2018, and the sponsor's fiscal year ending June 30, 2018.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement Nos. 67 and 68. The calculation of the Plan's liability for this report may not be applicable for funding purposes of the Plan. A calculation of the Plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the City of Nitro, West Virginia Firemen's Pension and Relief Fund ("Plan") only in its entirety and only with the permission of the Plan. GRS is not responsible for unauthorized use of this report.

West Virginia Code §8-22-20 (c)(4), requires a review of the actuarial assumptions and methods at least once every five years and that the Actuary shall provide a report to the Oversight Board with recommendations on any changes to the actuarial process. Consequently, an experience review was performed for the period July 1, 2009, through June 30, 2014. The actuarial assumptions and methods were recommended by the Actuary in the report *2016 Experience Review for the Years July 1, 2009, to July 1, 2014*, and approved by the Municipal Pensions Oversight Board, and were first applied beginning with the actuarial valuation for the plan year ending June 30, 2016.

Our actuarial valuation and projections assume the sponsor will make the contributions required by State statute. To the extent the sponsor does not make the statutory required contribution the results contained in this report could be significantly different. This report does not evaluate the plan sponsor's ability or willingness to make contributions to the Pension and Relief Fund.

This report is based upon information, furnished to us by the Plan, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. This information was checked for internal consistency, but it was not audited.

To the best of our knowledge, the information contained in this report is accurate and fairly represents the actuarial position of the City of Nitro, West Virginia Firemen's Pension and Relief Fund for GASB Statement Nos. 67 and 68 accounting purposes. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

This report complements the actuarial valuation report that was provided to the plan sponsor and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2017, for additional discussion of the nature of actuarial calculations and additional information related to participant data, economic and demographic assumptions and benefit provisions.

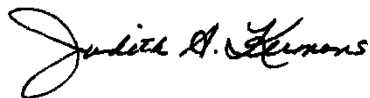
Heidi G. Barry and Judith A. Kermans are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

The signing individuals are independent of the plan sponsor.

Respectfully submitted,



Heidi G. Barry, ASA, MAAA, FCA



Judith A. Kermans, EA, MAAA, FCA



Auditor's Note – This information is presented in draft form for review by the Plan's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the Plan's financial statements.

This actuarial valuation report assumes the following:

- The Plan Sponsor first adopted GASB Statement No. 68 effective for the fiscal year end June 30, 2015.
- The Net Pension Liability as of the first year of adoption, i.e., fiscal year end June 30, 2015, was based on a projection of actuarial liabilities from July 1, 2014, to June 30, 2015, and the market value of assets as of June 30, 2015.
- The Pension Expense for fiscal year end June 30, 2015, recognizes deferred inflows and outflows for the fiscal year end June 30, 2015.
- The Pension Expense for fiscal years after June 30, 2015, recognizes deferred inflows and outflows beginning with the fiscal year end June 30, 2015.

The Plan Sponsor may need to adjust the results in this report if a different policy is implemented. Examples of different policies include:

- Adopting GASB Statement No. 68 effective for fiscal years ending prior to June 30, 2015.
- Using an earlier measurement date, such as using a measurement date of June 30, 2014, for purposes of completing financial reporting for the fiscal year end June 30, 2015.
- Recognizing deferred inflows and outflows prior to the initial year of adoption, such as recognizing deferred inflows and outflows starting with the fiscal year end June 30, 2014.



# Table of Contents

**Page**

<b>Section A</b>	<b>Executive Summary</b>	
	Executive Summary.....	1
	Discussion.....	2
<b>Section B</b>	<b>Financial Statements</b>	
	Statement of Fiduciary Net Position.....	6
	Statement of Changes in Fiduciary Net Position .....	7
	Long-Term Expected Return on Plan Assets .....	8
<b>Section C</b>	<b>Required Supplementary Information</b>	
	Schedule of Changes in Net Pension Liability and Related Ratios Multiyear .....	9
	Schedule of Net Pension Liability Multiyear .....	10
	Schedule of Contributions Multiyear .....	11
	Notes to Schedule of Contributions.....	12
<b>Section D</b>	<b>Notes to Financial Statements</b>	
	Single Discount Rate .....	13
	Sensitivity of Net Pension Liability to the Single Discount Rate Assumption .....	14
<b>Section E</b>	<b>GASB Statement No. 68 Pension Expense.....</b>	<b>15</b>
<b>Section F</b>	<b>Summary of Benefits.....</b>	<b>18</b>
<b>Section G</b>	<b>Actuarial Valuation Assumptions .....</b>	<b>20</b>
<b>Section H</b>	<b>Calculation of the Single Discount Rate</b>	
	Calculation of the Single Discount Rate.....	24
	Projection of Funded Status and Assignment of Assets .....	25
	Projection of Assets and Assignment of Employer Contributions.....	26
	Development of Single Equivalent Discount Rate .....	27
<b>Section I</b>	<b>Glossary of Terms.....</b>	<b>28</b>

## SECTION A

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### EXECUTIVE SUMMARY

# Executive Summary as of June 30, 2018

Actuarial Valuation Date	June 30, 2017
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)	June 30, 2018

## Membership<sup>a</sup>

Number of		
- Retirees and Beneficiaries	11	
- Inactive, Nonretired Members	-	
- Active Members	14	
- Total	25	
Expected Payroll	\$	719,541

## Net Pension Liability

Total Pension Liability <sup>b</sup>	\$	11,450,378
Plan Fiduciary Net Position		1,701,096
Net Pension Liability	\$	9,749,282
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		14.86%
Net Pension Liability as a Percentage of Covered Payroll		1,354.93%

## Development of the Single Discount Rate

Single Discount Beginning of Year	3.8121%
Single Discount Rate End of Year	3.8337%
Long-Term Expected Rate of Return	4.50%
Long-Term Municipal Bond Rate Beginning of Year <sup>c</sup>	3.56%
Long-Term Municipal Bond Rate End of Year <sup>c</sup>	3.62%
Year Plan is projected to be fully funded	2070
<b>Year assets are expected to be depleted for closed plan</b>	<b>2033</b>

GASB No. 68 Pension Expense	\$	949,482
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## Deferred Outflows and Deferred Inflows of Resources to be recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred (Inflows) of Resources
Difference between expected and actual non-investment experience	\$ 722,000	\$ (566,844)
Changes in assumptions	1,457,573	(862,858)
Net difference between projected and actual earnings on pension plan investments	9,814	(24,684)
<b>Total</b>	<b>\$ 2,189,387</b>	<b>\$ (1,454,386)</b>

<sup>a</sup> Census data measured as of June 30, 2017.

<sup>b</sup> Total pension liability projected from July 1, 2017, to June 30, 2018, based on the results of July 1, 2017, actuarial valuation.

<sup>c</sup> Based on the 20-Year Municipal GO Index of mixed maturity general obligation municipal bonds as of the weekly rate closest to but not later than the Measurement Date.

# Discussion

## Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for State and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain additional non-actuarial required information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

## Financial Statements

GASB Statement No. 68 requires State or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

Pension plans that prepare their own, stand-alone financial statements, are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents additions, such as contributions and investment income, and deductions, such as benefit payments and expenses and net increase or decrease in the fiduciary net position.



## Notes to Financial Statements

GASB Statement No. 68 requires, in the notes of the employer's financial statements, a disclosure of the total pension expense, the pension plan's liabilities and assets and deferred outflows and inflows of resources related to pensions.

Both GASB Statement Nos. 67 and 68, require the notes of the financial statements for the employers and pension plans, to include certain additional information. The list of additional disclosure items should include:

- A description of benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position, net pension liability and the pension plan's fiduciary net position as a percentage of the total pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets; and
- Annual money-weighted rate of return.

## Required Supplementary Information

Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability and the net pension liability as a percent of covered-employee payroll;
- Comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy; and
- The annual money-weighted rate of return on pension plan investments for each year.

These tables may be built prospectively as the information becomes available.

### Measurement of the Net Pension Liability

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In traditional actuarial terms, this will be the accrued liability less the market value of assets.

### Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least once every two years. If the actuarial valuation is not calculated as of the plan's fiscal year end, the total pension liability is required to be rolled forward from the actuarial valuation date to the pension plan's fiscal year end.

The total pension liability shown in this report is based on an actuarial valuation performed as of July 1, 2017, and projected to the measurement date of June 30, 2018.

### Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a single discount rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be available and sufficient to pay benefits) and (2) a tax-exempt municipal bond rate based on an index of 20-year mixed maturity general obligation bonds with an average AA credit rating (which is published by Fidelity) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 4.50%, the municipal bond rate is 3.62% (based on the weekly rate closest to but not later than the measurement date of the "20-Year Municipal GO Index" as published by Fidelity), and the resulting single discount rate is 3.8337%.

## Effective Date and Transition

GASB Statement No. 67 is effective for a pension plan's fiscal years beginning after June 15, 2013, and GASB Statement No. 68 is effective for a pension plan's fiscal years beginning after June 15, 2014; however, earlier application is encouraged by the GASB.

## Assumption Changes

The actuarial assumptions and methods were recommended by the Actuary, in the report *2016 Experience Review for the Years July 1, 2009, to July 1, 2014*, approved by the Municipal Pension Oversight Board and became effective beginning with the actuarial valuation applicable to plan year end June 30, 2016. Since the last valuation as of June 30, 2017, and for purposes of the accounting actuarial valuation, the blended interest rate used to discount liabilities was changed from 3.8121% to 3.8337%. The actuarial assumptions are disclosed in Section G of the report.

## **SECTION B**

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### **FINANCIAL STATEMENTS**

## Statement of Fiduciary Net Position as of June 30, 2018

### Assets

Cash and Deposits	\$	630,813
Receivables		
Contributions		57
Investment Income		-
Total Receivables	<u>\$</u>	<u>57</u>
Investment		
Government Securities	\$	199,915
Corporate Bonds		342,400
Corporate Stocks		527,912
Alternative Investments		-
Other		-
Total Investments	<u>\$</u>	<u>1,070,227</u>
<b>Total Assets</b>	<u>\$</u>	<u>1,701,096</u>

### Liabilities

Payables		-
<b>Total Liabilities</b>	<u>\$</u>	<u>-</u>
<b>Net Position Restricted for Pensions*</b>	<u>\$</u>	<u>1,701,096</u>

*\*Totals may not add due to rounding*



## Long-Term Expected Return on Plan Assets

The investment policy covering the allocation of invested assets for the City of Nitro, West Virginia Firemen's Pension and Relief Fund is established by the Board of Trustees and is subject to the limitations defined in West Virginia Code §8-22-22 and §8-22-22a.

GASB Statement Nos. 67 and 68 require the disclosure of certain information contained in the investment policy including the target asset allocation by major asset class and the long-term expected real rate of return by major asset class. This information is generally available from the investment consultant, investment manager or plan trustee.

Information on the target asset allocation and long-term real return by major asset class was not provided to the actuary.

The discount rate used by the actuary for the purpose of developing the statutory contribution requirement, including the statutory solvency requirement, is shown in the Actuarial Assumptions Section of this report. This same discount rate is also used by the actuary to determine the GASB Statement Nos. 67 and 68 single discount rate.

### Money-Weighted Rate of Return

GASB Statement Nos. 67 and 68 also require the disclosure of the money weighted rate of return, net of investment expenses, using monthly data. This information was not provided to the actuary, but should be available from the investment consultant, investment manager or plan trustee.

## SECTION C

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### REQUIRED SUPPLEMENTARY INFORMATION



# Schedules of Required Supplementary Information

## Schedule of Changes in Net Pension Liability and Related Ratios Multiyear

Fiscal year ending June 30	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
<b>Total Pension Liability</b>										
Service Cost	\$ 422,494	\$ 466,302	\$ 298,577	\$ 274,332	\$ 261,666					
Interest on the Total Pension Liability	420,584	347,047	361,264	369,617	364,726					
Benefit Changes	-	-	-	-	-					
Difference between Expected and Actual Experience	838,380	(486,502)	(425,741)	29,557	-					
Assumption Changes	(41,108)	(1,201,576)	2,468,097	331,542	345,132					
Benefit Payments	(346,417)	(291,710)	(277,009)	(294,327)	(268,023)					
Refunds	-	(14,586)	-	-	-					
<b>Net Change in Total Pension Liability</b>	<b>1,293,933</b>	<b>(1,181,025)</b>	<b>2,425,188</b>	<b>710,721</b>	<b>703,501</b>					
<b>Total Pension Liability - Beginning</b>	<b>10,156,445</b>	<b>11,337,470</b>	<b>8,912,282</b>	<b>8,201,561</b>	<b>7,498,060</b>					
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 11,450,378</b>	<b>\$ 10,156,445</b>	<b>\$ 11,337,470</b>	<b>\$ 8,912,282</b>	<b>\$ 8,201,561</b>					
<b>Plan Fiduciary Net Position</b>										
Employer Contributions (Local and State)	\$ 615,091	\$ 612,325	\$ 288,034	\$ 231,025	\$ 189,307					
Employee Contributions	63,299	60,503	55,075	53,084	51,577					
Pension Plan Net Investment Income	68,316	71,616	19,186	31,201	76,459					
Benefit Payments	(346,417)	(291,710)	(277,009)	(294,327)	(268,023)					
Refunds	-	(14,586)	-	-	-					
Pension Plan Administrative Expense	(90)	(90)	(98)	-	(675)					
Other	-	-	-	-	-					
<b>Net Change in Plan Fiduciary Net Position</b>	<b>400,199</b>	<b>438,058</b>	<b>85,188</b>	<b>20,983</b>	<b>48,645</b>					
<b>Plan Fiduciary Net Position - Beginning</b>	<b>1,300,897</b>	<b>862,839</b>	<b>777,651</b>	<b>756,668</b>	<b>708,023</b>					
<b>Plan Fiduciary Net Position - Ending* (b)</b>	<b>\$ 1,701,096</b>	<b>\$ 1,300,897</b>	<b>\$ 862,839</b>	<b>\$ 777,651</b>	<b>\$ 756,668</b>					
<b>Net Pension Liability - Ending (a) - (b)</b>	<b>9,749,282</b>	<b>8,855,548</b>	<b>10,474,631</b>	<b>8,134,631</b>	<b>7,444,893</b>					
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability</b>	<b>14.86 %</b>	<b>12.81 %</b>	<b>7.61 %</b>	<b>8.73 %</b>	<b>9.23 %</b>					
<b>Covered Employee Payroll</b>	<b>\$ 719,541</b>	<b>\$ 638,967</b>	<b>\$ 670,368</b>	<b>\$ 666,552</b>	<b>\$ 693,435</b>					
<b>Net Pension Liability as a Percentage of Covered Employee Payroll</b>	<b>1,354.93 %</b>	<b>1,385.92 %</b>	<b>1,562.52 %</b>	<b>1,220.40 %</b>	<b>1,073.63 %</b>					

**Notes to Schedule:**

*\*Totals may not add due to rounding*

# Schedules of Required Supplementary Information

## Schedule of the Net Pension Liability Multiyear

### Last 10 Fiscal Years (which may be built prospectively)

FY Ending June 30	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2009						
2010						
2011						
2012						
2013						
2014	\$ 8,201,561	\$ 756,668	\$ 7,444,893	9.23%	\$ 693,435	1,073.63 %
2015	\$ 8,912,282	\$ 777,651	\$ 8,134,631	8.73%	\$ 666,552	1,220.40 %
2016	\$ 11,337,470	\$ 862,839	\$ 10,474,631	7.61%	\$ 670,368	1,562.52 %
2017	\$ 10,156,445	\$ 1,300,897	\$ 8,855,548	12.81%	\$ 638,967	1,385.92 %
2018	\$ 11,450,378	\$ 1,701,096	\$ 9,749,282	14.86%	\$ 719,541	1,354.93 %

## Schedule of Contributions Multiyear

Fiscal Year Ended	Actuarially Determined Contribution (a)	Employer Contribution (b)	State Contribution (c)	Percentage Contributed [(b)+(c)]/(a)	Covered Payroll (f)	Actual Contribution as a % of Covered Payroll [(b)+(c)]/(f)
6/30/2013	\$ 422,547	\$ 111,848	\$ 114,829	54%	\$ 619,388	37%
6/30/2014	\$ 469,302	\$ 77,008	\$ 112,299	40%	\$ 693,435	27%
6/30/2015	\$ 486,921	\$ 127,574	\$ 103,451	47%	\$ 666,552	35%
6/30/2016	\$ 616,637	\$ 144,719	\$ 143,315	47%	\$ 670,368	43%
6/30/2017	\$ 624,038	\$ 485,000	\$ 127,325	98%	\$ 638,967	96%
6/30/2018	\$ 690,694	\$ 486,000	\$ 129,091	89%	\$ 719,541	85%

## Notes to Schedule of Contributions

The information requested in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

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<b>Measurement Date</b>	6/30/2018, measurement date based on actuarial liabilities as of 7/1/2017
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<b>Actuarial Cost Method</b>	Entry Age Normal, Level-Percentage-of-Pay
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<b>Actuarial Value of Assets</b>	Market value used for GASB Statement Nos. 67 and 68 reporting
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<b>Contribution Policy and Amortization Method</b>	<p>The sponsor finances benefits using the Alternative funding policy as defined in state statute. Sponsor contributions are equal to 107 percent of the prior year contribution. The plan also receives state contributions based on an allocation of premium tax that depends on the number of active and retired members. This funding policy does not directly amortize the unfunded actuarial liability.</p> <p><b>However, projected sponsor, state and member contributions along with projected investment earnings are not expected to fully fund the projected actuarial liability for current plan members, and assets for the closed plan are projected to be depleted by 2033.</b></p>
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### **Actuarial Assumptions:**

<b>Investment Rate of Return</b>	4.50% per year
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<b>GASB 67/68 Discount Rate</b>	3.8337% per year at June 30, 2018, and 3.8121% at June 30, 2017
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<b>Projected Salary Increases</b>	Service-based increases: 20.00% in year 1, 6.50% in year 2, reducing over years of service down to 1.25% in years 30-34. 0% increases for service over 34
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<b>Cost of Living Increases</b>	2.75% on first \$15,000 of Annual Benefit and on the accumulated supplemental pension amounts for prior years. Assumed to be payable to all members receiving payments.
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## **SECTION D**

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### **NOTES TO FINANCIAL STATEMENTS**

## Single Discount Rate

A GASB Statement Nos. 67 and 68 single discount rate of 3.8337% was used to measure the total pension liability as of June 30, 2018. This single discount rate was based on the expected rate of return on pension plan investments of 4.50%, and the municipal bond rate 3.62%. The projection of cash flows used to determine this single discount rate assumed that the Plan sponsor would make the statutory required contribution as defined by the funding policy. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make projected future benefit payments, on behalf of current plan members until plan year end 2033. Therefore, the single discount rate of 3.8337% was applied to all periods of projected benefit payments to determine the total pension liability.

## Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan's net pension liability, calculated using a single discount rate of 3.8337%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

<b>1% Decrease</b>	<b>Current Single Discount Rate Assumption</b>	<b>1% Increase</b>
<b>2.8337%</b>	<b>3.8337%</b>	<b>4.8337%</b>
\$12,008,894	\$9,749,282	\$8,006,759

**SECTION E**

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**GASB STATEMENT NO. 68 PENSION EXPENSE**



## Net Pension Liability For Fiscal Year Ending June 30, 2018

<b>A. Total Pension Liability</b>	
1. Service Cost	\$ 422,494
2. Interest on the Total Pension Liability	420,584
3. Changes of benefit terms	-
4. Difference between expected and actual experience of the Total Pension Liability	838,380
5. Changes of assumptions	(41,108)
6. Benefit payments, including refunds of employee contributions	(346,417)
7. Net change in total pension liability	\$ 1,293,933
8. Total pension liability – beginning (July 1, 2017)	10,156,445
9. Total pension liability – ending (June 30, 2018)	<u><u>\$ 11,450,378</u></u>
<b>B. Plan Fiduciary Net Position</b>	
1. Contributions – employer	\$ 615,091
2. Contributions – employee	63,299
3. Net investment income	68,316
4. Benefit payments, including refunds of employee contributions	(346,417)
5. Pension Plan Administrative Expense	(90)
6. Other	-
7. Net change in plan fiduciary net position	\$ 400,199
8. Plan fiduciary net position – beginning (July 1, 2017)	1,300,897
9. Plan fiduciary net position – ending (June 30, 2018)*	<u><u>\$ 1,701,096</u></u>
<b>C. Net pension liability as of June 30, 2018</b>	<u><u>\$ 9,749,282</u></u>
<b>D. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability</b>	<b>14.86%</b>
<b>E. Covered-employee Payroll</b>	<b>\$ 719,541</b>
<b>F. Net Pension Liability as a Percentage of Covered Employee Payroll</b>	<b>1,354.93%</b>

*\*Totals may not add due to rounding*

## Pension Expense For Fiscal Year Ending June 30, 2018

### A. Expense

1. Service Cost	\$	422,494
2. Interest on the Total Pension Liability		420,584
3. Current-Period Benefit Changes		-
4. Employee Contributions (made negative for addition here)		(63,299)
5. Projected Earnings on Plan Investments (made negative for addition here)		(55,916)
6. Pension Plan Administrative Expense		90
7. Other Changes in Plan Fiduciary Net Position		-
8. Recognition of Outflow/(Inflow) due to Non-investment Experience		(8,896)
9. Recognition of Outflow/(Inflow) due to Assumption Changes		236,281
10. Recognition of Outflow/(Inflow) due to Investment Experience		(1,856)
<b>11. Total Pension Expense</b>	<b>\$</b>	<b>949,482</b>

### B. Reconciliation of Net Pension Liability

<b>1. Net Pension Liability beginning of year</b>	<b>\$</b>	<b>8,855,548</b>
2. Pension Expense		949,482
3. Employer Contributions		(615,091)
4. Change in Outflow/(Inflow) due to Non-investment Experience		847,276
5. Change in Outflow/(Inflow) due to Assumption Changes		(277,389)
6. Change in Outflow/(Inflow) due to Investment Experience		(10,544)
<b>7. Net Pension Liability End of year*</b>	<b>\$</b>	<b>9,749,282</b>

*\*Totals may not add due to rounding*

# Schedule of Outflows and Inflows of Resources

	Non-Investment Experience				Assumption Changes				Investment Experience						
	7/1/2014	7/1/2015	7/1/2016	7/1/2017	7/1/2014	7/1/2015	7/1/2016	7/1/2017	7/1/2014	7/1/2015	7/1/2016	7/1/2017			
Plan Year Beginning															
(Gain)/Loss	\$ 29,557	\$ (425,741)	\$ (486,502)	\$ 838,380	\$ 331,542	\$ 2,468,097	\$ (1,201,576)	\$ (41,108)	\$ 6,377	\$ 21,347	\$ (24,606)	\$ (12,400)			
Amortization Factor	6.120408	6.579335	6.432120	6.621210	6.120408	6.579335	6.432120	6.621210	5.000000	5.000000	5.000000	5.000000			
Amortization Amount	\$ 4,829	\$ (64,709)	\$ (75,636)	\$ 126,620	\$ 54,170	\$ 375,129	\$ (186,809)	\$ (6,209)	\$ 1,275	\$ 4,269	\$ (4,921)	\$ (2,480)			
<b>Amortization for Plan Year End</b>	<b>Total</b>				<b>Total</b>				<b>Total</b>						
6/30/2015	\$ 4,829			\$ 4,829	\$ 54,170			\$ 54,170	\$ 1,275			\$ 1,275			
6/30/2016	4,829	\$ (64,709)		(59,880)	54,170	\$ 375,129		429,299	1,275	\$ 4,269		5,545			
6/30/2017	4,829	(64,709)	\$ (75,636)	(135,516)	54,170	375,129	\$ (186,809)	242,490	1,275	4,269	\$ (4,921)	624			
<b>6/30/2018</b>	<b>4,829</b>	<b>(64,709)</b>	<b>(75,636)</b>	<b>\$ 126,620</b>	<b>(8,896)</b>	<b>54,170</b>	<b>(186,809)</b>	<b>\$ (6,209)</b>	<b>236,281</b>	<b>1,275</b>	<b>4,269</b>	<b>(4,921)</b>	<b>\$ (2,480)</b>	<b>(1,856)</b>	
6/30/2019	4,829	(64,709)	(75,636)	126,620	(8,896)	54,170	375,129	(186,809)	(6,209)	236,281	1,275	4,269	(4,921)	(2,480)	(1,856)
6/30/2020	4,829	(64,709)	(75,636)	126,620	(8,896)	54,170	375,129	(186,809)	(6,209)	236,281	-	4,269	(4,921)	(2,480)	(3,132)
6/30/2021	581	(64,709)	(75,636)	126,620	(13,143)	6,522	375,129	(186,809)	(6,209)	188,634	-	-	(4,921)	(2,480)	(7,401)
6/30/2022	-	(37,488)	(75,636)	126,620	13,496	-	217,325	(186,809)	(6,209)	24,308	-	-	-	(2,480)	(2,480)
6/30/2023	-	-	(32,684)	126,620	93,936	-	-	(80,724)	(6,209)	(86,932)	-	-	-	-	-
6/30/2024	-	-	-	78,658	78,658	-	-	-	(3,857)	(3,857)	-	-	-	-	-
<b>Total</b>	<b>\$ 29,557</b>	<b>\$ (425,741)</b>	<b>\$ (486,502)</b>	<b>\$ 838,380</b>	<b>\$ 331,542</b>	<b>\$ 2,468,097</b>	<b>\$ (1,201,576)</b>	<b>\$ (41,108)</b>	<b>\$ 6,377</b>	<b>\$ 21,347</b>	<b>\$ (24,606)</b>	<b>\$ (12,400)</b>			
<b>Deferred Outflows/(Inflows) Recognized in Pension Expense for Current Plan Year End</b>	<b>Outflows</b>				<b>(Inflows)</b>				<b>Net</b>						
6/30/2018	\$ 131,450	\$ (140,345)	\$ (8,896)		\$ 429,299	\$ (193,017)	\$ 236,281		\$ 5,545	\$ (7,401)	\$ (1,856)				
<b>Deferred Outflows/(Inflows) Recognized in Pension Expense for Future Plan Years Ending</b>	<b>Outflows</b>				<b>(Inflows)</b>				<b>Net</b>						
6/30/2019	\$ 131,450	\$ (140,345)	\$ (8,896)		\$ 429,299	\$ (193,017)	\$ 236,281		\$ 5,545	\$ (7,401)	\$ (1,856)				
6/30/2020	131,450	(140,345)	(8,896)		429,299	(193,017)	236,281		4,269	(7,401)	(3,132)				
6/30/2021	127,202	(140,345)	(13,143)		381,651	(193,017)	188,634		-	(7,401)	(7,401)				
6/30/2022	126,620	(113,124)	13,496		217,325	(193,017)	24,308		-	(2,480)	(2,480)				
6/30/2023	126,620	(32,684)	93,936		-	(86,932)	(86,932)		-	-	-				
6/30/2024	78,658	-	78,658		-	(3,857)	(3,857)		-	-	-				
<b>Total</b>	<b>\$ 722,000</b>	<b>\$ (566,844)</b>	<b>\$ 155,156</b>		<b>\$ 1,457,573</b>	<b>\$ (862,858)</b>	<b>\$ 594,715</b>		<b>\$ 9,814</b>	<b>\$ (24,684)</b>	<b>\$ (14,869)</b>				
<b>Change In Deferred Outflows/(Inflows) Recognized in Liability and Assets for Current Plan Year End</b>															
6/30/2018			\$ 847,276				\$ (277,389)				\$ (10,544)				

## **SECTION F**

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### **SUMMARY OF BENEFITS**

**Employee Eligibility** — All compensated employees of the Fire Department are eligible to participate in the Firemen's Pension and Relief Fund.

**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.

*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 7.0% of compensation. Participating employees hired on or after January 1, 2010, contribute 9.5% of pay. The municipality has elected to contribute the minimum employer contribution under the Alternative Method.

**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 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 G**

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### **ACTUARIAL VALUATION ASSUMPTIONS**

## Actuarial Valuation Assumptions

General Inflation	2.75%																		
Expected Salary Increase	<p>General Inflation: 2.75% <i>plus</i></p> <p>Wage Inflation: 1.00% <i>plus</i></p> <p>Service Based Increase:</p> <table style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;"><u>Years of Service</u></th> <th style="text-align: left;"><u>Increase</u></th> </tr> </thead> <tbody> <tr><td>1</td><td>20.00%</td></tr> <tr><td>2</td><td>6.50%</td></tr> <tr><td>3</td><td>3.50%</td></tr> <tr><td>4</td><td>2.75%</td></tr> <tr><td>5-9</td><td>2.50%</td></tr> <tr><td>10-29</td><td>2.00%</td></tr> <tr><td>30-34</td><td>1.25%</td></tr> <tr><td>after 34 years of service</td><td>0.00%</td></tr> </tbody> </table>	<u>Years of 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%
<u>Years of 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																		



## Actuarial Valuation Assumptions

<p>Cost Method</p>	<p>Entry-Age Normal Level-Percentage-of-Pay</p> <p>The sponsor finances benefits using the Alternative funding policy as defined by state statute. This policy does not directly amortize the unfunded actuarial liability. The policy is projected to result in a depletion of plan assets for the closed plan by 2033.</p> <p>30 – Year Closed Level-Percentage-of-Pay Amortization for Actuarially Determined Contribution (from July 1, 2010). 23 years remaining as of July 1, 2017.</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 Valuation Assumptions

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 two-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. Also assumes 10% of non-duty disabled members receive a 20% reduction in benefits due to gainful employment.</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								

## 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
60% or more	10	50% or more	70% or more	6.50%
40% or more	8	40% or more	60% or more	6.00%
30% or more	6	30% or more	50% or more	5.50%
15% or more	4	n/a	40% or more	5.00%
Less than 15%	n/a	n/a	15% or more	4.50%
Less than 15%	n/a	n/a	Less than 15%	4.00%

<sup>1</sup> Funded ratios based on a 6.00% investment return assumption for plans using an actuarially sound policy (standard or optional) and a 5.50% investment return assumption for other plans (alternative or conservation).

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

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

As of June 30, 2017 <sup>*</sup>	
Assets	\$1,300,894
Liabilities using a 5.50% discount rate	\$8,382,342
Funded Ratio	16%
Expected Benefit Payments	\$348,051
Liquidity Ratio	3.74
Equity Exposure	36%
Projected Funded Ratio after 15 years	23%

<sup>\*</sup> Based on funding valuation results as of June 30, 2017.

Discount Rate

4.50%

## **SECTION H**

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### **CALCULATION OF THE SINGLE DISCOUNT RATE**

## Calculation of the Single Discount Rate

GASB Statement Nos. 67 and 68 include specific requirements for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be available or sufficient to meet benefit payments, the use of a “risk-free” rate is required, as described in the following paragraph.

The *single discount rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) a tax-exempt municipal bond rate based on an index of 20-year mixed maturity general obligation bonds with an average AA credit rating (which is published by Fidelity) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 4.50%, the municipal bond rate is 3.62%, and the resulting single discount rate is 3.8337%.

The sponsor finances benefits using the Alternative funding policy as defined in State statute. Sponsor contributions are equal to 107 percent of the prior year contribution. The plan also receives State contributions based on an allocation of premium tax that depends on the number of actives and retired members. This funding policy does not directly amortize the unfunded actuarial liability. The statutory contribution does not explicitly separate projected employer contributions between current plan members and future plan members.

For purposes of developing the single equivalent discount rate, we have assumed the actuarial liability for future members will be fully financed, to the extent that assets are available, and any remaining asset will be assigned to current plan members. Based on this assignment of assets and employer contributions, plan assets assigned to current plan members are projected to be depleted by 2033.

The tables on the following pages show the assignment of assets and employer contributions and the projection of assets for current members as of the valuation date. Our projections assume the sponsor will make the required statutory contributions. The projections are based on the statutory funding actuarial valuation and projection report as of June 30, 2017.

**GASB Statement Nos. 67 and 68 - Alternative Funding Policy**

**Assignment of assets which provides 100% financing of future member actuarial liability**

Plan Year End 6/30	Open Group Actuarial Liability (a)	Closed Group Actuarial Liability (b)	Future Member Actuarial Liability (c) = (a)-(b)	Open Group Assets (d)	Future Member Assigned Assets (e)=min[(c), (d)]	Closed Group Assigned Assets (f)=(d)-(e)	Funded Ratio Current Members (g)=(f)/(b)	Funded Ratio Future Members (h)=(e)/(c)
2017	\$ 9,795,852	\$ 9,795,852	\$0	\$ 1,300,894	\$0	\$ 1,300,894	13.3%	100.0%
2018	10,248,892	10,236,694	12,198	1,362,906	12,198	1,350,708	13.2%	100.0%
2019	10,728,116	10,681,232	46,884	1,439,533	46,884	1,392,649	13.0%	100.0%
2020	11,231,862	11,127,856	104,006	1,526,371	104,006	1,422,365	12.8%	100.0%
2021	11,763,544	11,580,206	183,338	1,623,740	183,338	1,440,402	12.4%	100.0%
2022	12,330,727	12,045,594	285,133	1,738,074	285,133	1,452,941	12.1%	100.0%
2023	12,935,485	12,525,478	410,007	1,870,585	410,007	1,460,578	11.7%	100.0%
2024	13,579,901	13,020,401	559,500	2,023,219	559,500	1,463,719	11.2%	100.0%
2025	14,268,943	13,534,730	734,213	2,200,713	734,213	1,466,500	10.8%	100.0%
2026	14,978,192	14,033,859	944,333	2,381,072	944,333	1,436,739	10.2%	100.0%
2027	15,694,336	14,500,300	1,194,036	2,560,421	1,194,036	1,366,385	9.4%	100.0%
2028	16,416,814	14,928,277	1,488,537	2,735,782	1,488,537	1,247,245	8.4%	100.0%
2029	17,117,964	15,280,103	1,837,861	2,890,434	1,837,861	1,052,573	6.9%	100.0%
2030	17,814,675	15,573,317	2,241,358	3,038,185	2,241,358	796,827	5.1%	100.0%
2031	18,533,564	15,837,128	2,696,436	3,199,705	2,696,436	503,269	3.2%	100.0%
2032	19,284,438	16,080,924	3,203,514	3,383,035	3,203,514	179,521	1.1%	100.0%
2033	20,078,475	16,314,680	3,763,795	3,598,490	3,598,490	-	0.0%	95.6%
2034	20,928,395	16,549,438	4,378,957	3,857,754	3,857,754	-	0.0%	88.1%
2035	21,838,051	16,786,697	5,051,354	4,164,521	4,164,521	-	0.0%	82.4%
2036	22,812,229	17,027,440	5,784,789	4,523,960	4,523,960	-	0.0%	78.2%
2037	23,862,094	17,279,777	6,582,317	4,947,686	4,947,686	-	0.0%	75.2%
2038	24,995,192	17,547,996	7,447,196	5,442,291	5,442,291	-	0.0%	73.1%
2039	26,196,228	17,809,689	8,386,539	5,998,356	5,998,356	-	0.0%	71.5%
2040	27,405,817	17,988,661	9,417,156	6,569,180	6,569,180	-	0.0%	69.8%
2041	28,602,972	18,055,938	10,547,034	7,146,388	7,146,388	-	0.0%	67.8%
2042	29,825,844	18,055,842	11,770,002	7,765,488	7,765,488	-	0.0%	66.0%
2043	31,082,205	17,997,317	13,084,888	8,434,718	8,434,718	-	0.0%	64.5%
2044	32,373,256	17,884,732	14,488,524	9,162,576	9,162,576	-	0.0%	63.2%
2045	33,698,382	17,724,753	15,973,629	9,954,603	9,954,603	-	0.0%	62.3%
2046	35,055,916	17,519,666	17,536,250	10,814,081	10,814,081	-	0.0%	61.7%
2047	36,442,213	17,268,174	19,174,039	11,741,468	11,741,468	-	0.0%	61.2%
2048	37,856,566	16,971,170	20,885,396	12,743,250	12,743,250	-	0.0%	61.0%
2049	39,311,958	16,644,038	22,667,920	13,836,735	13,836,735	-	0.0%	61.0%
2050	40,809,571	16,290,160	24,519,411	15,032,124	15,032,124	-	0.0%	61.3%
2051	42,352,955	15,914,420	26,438,535	16,340,833	16,340,833	-	0.0%	61.8%
2052	43,945,634	15,522,475	28,423,159	17,775,243	17,775,243	-	0.0%	62.5%
2053	45,585,308	15,116,301	30,469,007	19,346,669	19,346,669	-	0.0%	63.5%
2054	47,273,076	14,697,407	32,575,669	21,064,579	21,064,579	-	0.0%	64.7%
2055	49,008,556	14,267,505	34,741,051	22,942,277	22,942,277	-	0.0%	66.0%
2056	50,793,404	13,827,881	36,965,523	24,993,622	24,993,622	-	0.0%	67.6%
2057	52,635,029	13,379,702	39,255,327	27,234,826	27,234,826	-	0.0%	69.4%

*Projected amounts from 2018 and beyond come directly from the June 30, 2017 actuarial valuation and do not reflect actual experience for the plan year ended June 30, 2018.*

**GASB Statement Nos. 67 and 68 - Alternative Funding Policy**  
**Current member projection of assets and assignment of employer contributions**

Plan Year End 6/30	Closed Group Assets (booy)	Member Contributions	Administrative Expenses	Benefit Payments	Assigned Employer/State Contribution	Income on Cash Flow	Income on Assigned Contribution	Total Investment Income	Assets (eoy)
2017	\$ 862,836	\$60,503	\$90	\$306,296	\$612,325	\$71,616	\$0	71,616	\$1,300,894
2018	1,300,894	59,339	2,669	348,051	282,847	51,984	6,364	58,348	1,350,708
2019	1,350,708	58,772	2,655	359,580	285,036	53,954	6,413	60,367	1,392,649
2020	1,392,649	58,335	2,652	374,082	286,172	55,505	6,439	61,944	1,422,365
2021	1,422,365	58,224	2,661	387,465	286,944	56,539	6,456	62,995	1,440,402
2022	1,440,402	58,384	2,672	395,748	288,907	57,167	6,500	63,668	1,452,941
2023	1,452,941	58,751	2,692	404,693	292,159	57,538	6,574	64,112	1,460,578
2024	1,460,578	59,135	2,715	413,585	295,957	57,690	6,659	64,349	1,463,719
2025	1,463,719	59,801	2,740	420,472	301,714	57,691	6,789	64,479	1,466,500
2026	1,466,500	58,582	2,770	448,589	299,130	57,155	6,730	63,885	1,436,739
2027	1,436,739	56,646	2,807	487,290	301,415	54,901	6,782	61,682	1,366,385
2028	1,366,385	54,384	2,848	526,178	297,990	50,808	6,705	57,513	1,247,245
2029	1,247,245	50,111	2,889	585,531	293,030	44,014	6,593	50,607	1,052,573
2030	1,052,573	46,951	2,930	633,459	292,998	34,103	6,592	40,696	796,827
2031	796,827	45,407	2,971	661,298	296,695	21,933	6,676	28,608	503,269
2032	503,269	44,548	3,012	683,513	303,205	8,203	6,822	15,025	179,521
2033	179,521	44,212	3,052	698,781	474,150	(6,718)	10,668	3,950	-
2034	-	44,357	3,093	706,025	664,761	(14,957)	14,957	-	-
2035	-	44,820	3,136	714,209	672,525	(15,132)	15,132	-	-
2036	-	45,304	3,177	721,576	679,448	(15,288)	15,288	-	-
2037	-	46,042	3,215	723,008	680,181	(15,304)	15,304	-	-
2038	-	47,135	3,254	723,330	679,449	(15,288)	15,288	-	-
2039	-	46,552	3,292	737,792	694,532	(15,627)	15,627	-	-
2040	-	40,419	3,327	799,885	762,793	(17,163)	17,163	-	-
2041	-	31,993	3,361	876,407	847,774	(19,075)	19,075	-	-
2042	-	26,719	3,393	919,916	896,590	(20,173)	20,173	-	-
2043	-	22,267	3,425	955,543	936,701	(21,076)	21,076	-	-
2044	-	18,271	3,457	986,454	971,640	(21,862)	21,862	-	-
2045	-	14,930	3,489	1,011,939	1,000,498	(22,511)	22,511	-	-
2046	-	11,844	3,522	1,034,462	1,026,140	(23,088)	23,088	-	-
2047	-	8,789	3,556	1,056,832	1,051,599	(23,661)	23,661	-	-
2048	-	5,865	3,591	1,077,193	1,074,919	(24,186)	24,186	-	-
2049	-	4,089	3,628	1,085,506	1,085,045	(24,414)	24,414	-	-
2050	-	2,645	3,666	1,090,655	1,091,676	(24,563)	24,563	-	-
2051	-	1,631	3,705	1,091,840	1,093,914	(24,613)	24,613	-	-
2052	-	1,089	3,745	1,088,756	1,091,412	(24,557)	24,557	-	-
2053	-	708	3,785	1,083,723	1,086,800	(24,453)	24,453	-	-
2054	-	430	3,824	1,077,048	1,080,441	(24,310)	24,310	-	-
2055	-	257	3,860	1,068,630	1,072,233	(24,125)	24,125	-	-
2056	-	140	3,894	1,058,707	1,062,461	(23,905)	23,905	-	-
2057	-	57	3,924	1,047,372	1,051,239	(23,653)	23,653	-	-

*Projected amounts from 2018 and beyond come directly from the June 30, 2017 actuarial valuation and do not reflect actual experience for the plan year ended June 30, 2018.*

**GASB Statement Nos. 67 and 68 - Alternative Funding Policy**  
**Development of single equivalent discount rate**

<b>Plan Year End 6/30</b>	<b>Benefit Payments</b>	<b>Discount Rate</b>	<b>Discounted Benefit Payments</b>	<b>Single Discount Rate</b>	<b>Discounted Benefit Payments</b>
2018	\$348,051	4.50%	\$340,508	3.8337%	\$341,594
2019	359,580	4.50%	336,638	3.8337%	339,879
2020	374,082	4.50%	335,134	3.8337%	340,532
2021	387,465	4.50%	332,176	3.8337%	339,692
2022	395,748	4.50%	324,667	3.8337%	334,144
2023	404,693	4.50%	317,708	3.8337%	329,080
2024	413,585	4.50%	310,707	3.8337%	323,894
2025	420,472	4.50%	302,279	3.8337%	317,130
2026	448,589	4.50%	308,605	3.8337%	325,844
2027	487,290	4.50%	320,793	3.8337%	340,887
2028	526,178	4.50%	331,478	3.8337%	354,501
2029	585,531	4.50%	352,984	3.8337%	379,924
2030	633,459	4.50%	365,433	3.8337%	395,847
2031	661,298	4.50%	365,065	3.8337%	397,986
2032	683,513	4.50%	361,080	3.8337%	396,168
2033	698,781	3.62%	401,025	3.8337%	390,063
2034	706,025	3.62%	391,027	3.8337%	379,556
2035	714,209	3.62%	381,741	3.8337%	369,780
2036	721,576	3.62%	372,205	3.8337%	359,800
2037	723,008	3.62%	359,914	3.8337%	347,204
2038	723,330	3.62%	347,495	3.8337%	334,533
2039	737,792	3.62%	342,061	3.8337%	328,624
2040	799,885	3.62%	357,893	3.8337%	343,126
2041	876,407	3.62%	378,432	3.8337%	362,071
2042	919,916	3.62%	383,342	3.8337%	366,015
2043	955,543	3.62%	384,277	3.8337%	366,153
2044	986,454	3.62%	382,849	3.8337%	364,041
2045	1,011,939	3.62%	379,020	3.8337%	359,658
2046	1,034,462	3.62%	373,920	3.8337%	354,089
2047	1,056,832	3.62%	368,660	3.8337%	348,389
2048	1,077,193	3.62%	362,635	3.8337%	341,991
2049	1,085,506	3.62%	352,667	3.8337%	331,906
2050	1,090,655	3.62%	341,961	3.8337%	321,168
2051	1,091,840	3.62%	330,373	3.8337%	309,646
2052	1,088,756	3.62%	317,931	3.8337%	297,371
2053	1,083,723	3.62%	305,406	3.8337%	285,068
2054	1,077,048	3.62%	292,921	3.8337%	272,852
2055	1,068,630	3.62%	280,478	3.8337%	260,724
2056	1,058,707	3.62%	268,166	3.8337%	248,766
2057	1,047,372	3.62%	256,027	3.8337%	237,016
2058	1,034,608	3.62%	244,071	3.8337%	225,483
2059	1,020,157	3.62%	232,255	3.8337%	214,125
2069	807,913	3.62%	128,892	3.8337%	116,408
2079	518,180	4.50%	34,584	3.8337%	51,253
2109	1,637	4.50%	29	3.8337%	52
<b>Total Present Value</b>			<b>\$16,712,300</b>		<b>\$16,712,300</b>



## **SECTION I**

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### **GLOSSARY OF TERMS**

## Glossary of Terms

<b><i>Actuarial Accrued Liability (AAL)</i></b>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
<b><i>Actuarial Assumptions</i></b>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<b><i>Accrued Service</i></b>	Service credited under the system which was rendered before the date of the actuarial valuation.
<b><i>Actuarial Equivalent</i></b>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<b><i>Actuarial Cost Method</i></b>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
<b><i>Actuarial Gain (Loss)</i></b>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<b><i>Actuarial Present Value (APV)</i></b>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<b><i>Actuarial Valuation</i></b>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability and related actuarial present value of projected benefit payments for pensions.
<b><i>Actuarial Valuation Date</i></b>	The date as of which an actuarial valuation is performed.

## Glossary of Terms

<b><i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i></b>	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.
<b><i>Amortization Method</i></b>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<b><i>Amortization Payment</i></b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<b><i>Cost-of-Living Adjustments</i></b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b><i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i></b>	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
<b><i>Covered-Employee Payroll</i></b>	The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
<b><i>Deferred Inflows and Outflows</i></b>	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
<b><i>Deferred Retirement Option Program (DROP)</i></b>	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.

## Glossary of Terms

<b><i>Discount Rate</i></b>	<p>For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically:</p> <p>The benefit payments to be made while the pension plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period and;</p> <p>The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.</p>
<b><i>Entry Age Actuarial Cost Method (EAN)</i></b>	<p>The EAN is a funding method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.</p>
<b><i>Fiduciary Net Position</i></b>	<p>The fiduciary net position is the value of the assets of the trust.</p>
<b><i>GASB</i></b>	<p>The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.</p>
<b><i>Long-Term Expected Rate of Return</i></b>	<p>The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.</p>
<b><i>Money-Weighted Rate of Return</i></b>	<p>The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.</p>
<b><i>Multiple-Employer Defined Benefit Pension Plan</i></b>	<p>A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.</p>

## Glossary of Terms

<b><i>Municipal Bond Rate</i></b>	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
<b><i>Net Pension Liability (NPL)</i></b>	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
<b><i>Non-employer Contribution Entities</i></b>	Non-employer contribution entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting statement plan members are not considered non-employer contribution entities.
<b><i>Normal Cost</i></b>	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
<b><i>Other Postemployment Benefits (OPEB)</i></b>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
<b><i>Real Rate of Return</i></b>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<b><i>Service Cost</i></b>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<b><i>Total Pension Expense</i></b>	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total Pension Liability</li><li>3. Current-Period Benefit Changes</li><li>4. Employee Contributions (made negative for addition here)</li><li>5. Projected Earnings on Plan Investments (made negative for addition here)</li><li>6. Pension Plan Administrative Expense</li><li>7. Other Changes in Plan Fiduciary Net Position</li><li>8. Recognition of Outflow/(Inflow) of Resources due to Liabilities</li><li>9. Recognition of Outflow/(Inflow) of Resources due to Assets</li></ol>

## Glossary of Terms

<b><i>Total Pension Liability (TPL)</i></b>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<b><i>Unfunded Actuarial Accrued Liability (UAAL)</i></b>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<b><i>Valuation Assets</i></b>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 67, the valuation asset is equal to the market value of assets.