



May 8, 2019

Pension Board
South Miami Pension Plan
c/o Ms. Edemir K. Estrada
Pension Administrator
Gabriel, Roeder, Smith & Company
One East Broward Blvd.
Suite 505
Fort Lauderdale, Florida 33301-1804

**Re: South Miami Pension Plan
October 1, 2018 Actuarial Valuation**

Dear Pension Board Members:

As requested, we are pleased to enclose sixteen (16) copies of the October 1, 2018 Actuarial Valuation Report.

We appreciate the opportunity to perform this important service on behalf of the membership.

Upon Board approval of the Actuarial Valuation Report, we will upload an electronic copy of the Actuarial Valuation Report along with the required disclosure information to the State portal as required by the State.

If you should have any question concerning the above, please do not hesitate to contact us.

Sincerest regards,

A handwritten signature in black ink that reads "L. F. Wilson". The signature is written in a cursive style with a large, prominent "L" and "W".

Lawrence F. Wilson, A.S.A.
Senior Consultant and Actuary

Enclosures

cc: Mr. Bradley Cassel (w/ Enclosure)
Mr. Alfredo Riverol (w/ Enclosure)
Ronald Cohen, Esq. (w/ Enclosure)

South Miami Pension Plan

ACTUARIAL VALUATION AS OF OCTOBER 1, 2018

This Valuation Determines the Annual Contribution for the Plan Year October 1, 2019 through September 30, 2020 to be paid in Fiscal Year October 1, 2019 to September 30, 2020

May 8, 2019



South Miami Pension Plan

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May 8, 2019

Pension Board
South Miami Pension Fund
c/o Ms. Edemir K. Estrada
Pension Administrator
Gabriel, Roeder, Smith & Company
One East Broward Blvd.
Suite 505
Fort Lauderdale, Florida 33301-1804

Re: October 1, 2018 Projection Actuarial Valuation

Dear Pension Board Members:

We are pleased to present our October 1, 2018 Actuarial Valuation Report for the South Miami Pension Plan (Plan). The purpose of this report is to indicate appropriate contribution levels, monitor minimum funding requirements, comment on the actuarial stability of the Plan and to satisfy State and accounting requirements. The Pension Board has retained Gabriel, Roeder, Smith & Company (GRS) to prepare an annual Actuarial Valuation.

This report consists of this commentary, detailed Tables I through XVI, the State Required Exhibit on Table XVII and a Glossary on Table XVIII. The Tables contain basic Plan cost figures plus significant details on the benefits, liabilities and experience of the Plan. We suggest you thoroughly review the report at your convenience and contact us with any questions that may arise.

Retirement Plan Costs

Our Projection Actuarial Valuation develops the required minimum Retirement Plan payment under the Florida Protection of Public Employee Retirement Benefits Act and Chapter 185. The minimum payment consists of payment of annual normal costs including expenses and amortization of the components of the unfunded actuarial accrued liability over various periods as prescribed by law (not less than normal cost). The **minimum required payment for fiscal year ending September 30, 2020** is as follows (figures in parentheses are the Plan cost expressed as a percentage of projected covered annual payroll for fiscal year beginning October 1, 2019).

General Employees Tier 1	\$ 172,241	(14.4%)
General Employees Tier 2	86,081	(7.2%)
AMSC Members	190,947	(19.0%)
Police Officers	625,681	(18.8%)
Total	<u>\$ 1,074,950</u>	(16.0%)

Total cost is to be met by Member, City and State contributions. We anticipate the following member contributions and State contributions which result in the following City contribution requirement.

	General Employees Tier 1	General Employees Tier 2	AMSC	Police Officers	Total
Members	\$ 83,842 (7.0%)	\$ 35,927 (3.0%)	\$ 70,328 (7.0%)	\$ 249,078 (7.5%)	\$ 439,175 (6.5%)
State	N/A	N/A	N/A	\$ 37,780 (1.1%)	\$ 37,780 (0.6%)
City *	\$ 88,399 (7.4%)	\$ 50,154 (4.2%)	\$ 120,619 (12.0%)	\$ 338,823 (10.2%)	\$ 597,995 (8.9%)
Total	\$ 172,241 (14.4%)	\$ 86,081 (7.2%)	\$ 190,947 (19.0%)	\$ 625,681 (18.8%)	\$ 1,074,950 (16.0%)

* Plan expenses allocated to City.

If State payments under F.S., Chapter 185 total less than \$60,249, the contribution must be increased by such deficiency – maximum \$37,780.

Changes in Actuarial Assumptions, Methods and Plan Benefits

The Plan provisions are unchanged from the October 1, 2017 Actuarial Valuation and are summarized on Table IX.

Unfunded actuarial accrued liability bases have been combined in accordance with Internal Revenue Code Regulation 1.412(b)-1 for Police Officers. The actuarial assumptions and methods remain unchanged from the October 1, 2017 Actuarial Valuation and are outlined on Table X.

Comparison of October 1, 2017 and October 1, 2018 Valuation Results

Table II of our report provides information of a comparative nature. The left columns of the Table indicate the costs as calculated for October 1, 2017. The right columns indicate the costs as calculated for October 1, 2018. Comparing the left and right columns of Table II shows the effect of Plan experience during the year.

General Employees Tier 1 - the total number of active participants decreased by approximately 12% while covered payroll decreased by approximately 7%. Total normal cost decreased both as a dollar amount and as a percentage of covered payroll. The unfunded actuarial accrued liability decreased both as a dollar amount and as a percentage of covered payroll. Required Member contributions decreased as a dollar amount but remained level as a percentage of covered payroll. The net City minimum funding requirement decreased both as a dollar amount and as a percentage of covered payroll.

General Employees Tier 2 - the total number of active participants increased by approximately 13% while covered payroll increased by approximately 19%. Total normal cost increased as a dollar amount but decreased as a

percentage of covered payroll. The unfunded actuarial accrued liability increased both as a dollar amount and as a percentage of covered payroll. The net City minimum funding requirement increased as a dollar amount but decreased as a percentage of covered payroll.

AMSC Members - the total number of active participants remains level while covered payroll increased by approximately 2%. Total normal cost increased both as a dollar amount and as a percentage of covered payroll. The unfunded actuarial accrued liability increased both as a dollar amount and as a percentage of covered payroll. The net City minimum funding requirement increased both as a dollar amount and as a percentage of covered payroll.

Police Officers - the total number of active participants increased by approximately 14% while covered payroll increased by approximately 10%. Total normal cost increased as a dollar amount but decreased as a percentage of covered payroll. The unfunded actuarial accrued liability and required Member contributions decreased both as a dollar amount and as a percentage of covered payroll. The net City minimum funding requirement also decreased both as a dollar amount and as a percentage of covered payroll.

The ratio of Plan assets (market value) to the value of vested accrued benefits (Vested Benefit Security Ratio) is 136.7%. This is an increase from 122.6% as of October 1, 2017.

Plan Experience

Table VI indicates General Employees (including AMSC members) experienced a total actuarial gain of \$783,315. Police Officers experienced an actuarial gain of \$1,504,304. This suggests actual Plan experience was more favorable than expected.

Table XV (salary, termination and investment yield) provides figures on recent Plan experience. Salary experience indicates actual salary increases during fiscal 2018 averaged 4.3% for General / AMSC Employees and -1.0% for Police Officers. Compared to the Plan's salary increase assumption of 4.6% for General / AMSC Employees and 4.4% for Police Officers, salary experience was generally a source of actuarial gain. Three, five and ten-year average annual salary average increases are 5.6%, 4.0% and 3.2%, respectively for General / AMSC Employees. Three, five and ten-year average annual salary average increases are 1.0%, 2.9% and 1.1%, respectively for Police Officers.

Employee turnover this year was 30% of the assumed turnover for General / AMSC Employees and was generally an offsetting source of actuarial loss. Employee turnover this year was 110% of the assumed turnover for Police Officers and was generally an additional source of actuarial gain. Three, five and ten-year average turnover is 90%, 80% and 90%, respectively for General Employees / AMSC Employees. Three, five and ten-year average turnover is 120%, 100% and 80%, respectively for Police Officers.

Smoothed value investment return of 9.004% exceeded the Plan investment return assumption of 7.375%. Investment return was an additional source of actuarial gain during the previous year. The three, five and ten-year average annual smoothed value investment returns are 9.457%, 9.361% and 6.5%, respectively. The one, three, five and ten-year average annual market value investment returns are 10.128%, 11.153%, 8.726% and

8.5%, respectively.

Member Census and Financial Data

The Plan Administrator and City submitted the Member census data as of October 1, 2018 used for this valuation. This information contains name, gender, employee contributions, dates of birth, employment, participation and payroll information. Dates of termination and retirement are provided where applicable. The Plan Administrator updated information on inactive participants including retirees, beneficiaries and vested terminees.

We received information on Plan assets as of September 30, 2018 from the Plan Administrator. We do not audit the asset information provided to us. The Plan is responsible for the accuracy of the data.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in Plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from expected returns;
2. Asset / Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and the actuarially determined contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the Plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and the actuarially determined contributions differing from expected;

5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and the actuarially determined contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the actuarially determined contribution can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in the actuarially determined contribution can be anticipated.

The actuarially determined contribution rate shown on page one may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the Plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Plan Maturity Measures

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	<u>2017</u>	<u>2018</u>
Ratio of the market value of assets to payroll	6.31	6.47
Ratio of actuarial accrued liability to payroll	6.11	5.87
Ratio of actives to retirees and beneficiaries	2.10	2.23
Ratio of net cash flow to market value of assets	-0.4%	-1.2%
Duration of the actuarial accrued liability	14.07	14.07

Ratio of Market Value of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of the actuarially determined contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in the actuarially determined contributions as a percentage of payroll.

Ratio of Actuarial Accrued Liability to Payroll

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of the actuarially determined contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also the actuarially determined contributions) as a percentage of payroll.

Ratio of Actives to Retirees and Beneficiaries

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

Ratio of Net Cash Flow to Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

Duration of Actuarial Accrued Liability

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, a duration of 10 indicates the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

Summary

In our opinion the benefits provided for under the current Plan will be sufficiently funded through the payment of the amount as indicated in this and future Actuarial Valuation reports. We will continue to update you on the future payment requirements for the Plan through our actuarial reports. These reports will also continue to monitor the future experience of the Plan.

The actuarial assumptions used in this Actuarial Valuation are as adopted by the Pension Board of Trustees as updated based upon an Experience Study for the period October 1, 2005 – May 31, 2013. Each assumption represents an estimate of future Plan experience. The mortality assumptions are prescribed under State statute.

We recommend the Board authorize an Experience Study to assure actuarial assumptions are aligned with Plan experience and future expectations.

If all actuarial assumptions are met and if all future minimum required contributions are paid, Plan assets will be sufficient to pay all Plan benefits, future contributions are expected to remain relatively stable as a percent of payroll and the funded status is expected to improve. Plan minimum required contributions are determined in compliance with the requirements of the Florida Protection of Public Employee Retirement Benefits Act and Police Officers Retirement Chapter 185 with normal cost determined as a level percent of covered payroll and a level percent amortization payment using a maximum amortization period of 30-years.

The Unfunded Actuarial Accrued Liability (UAAL) may not be appropriate for assessing the sufficiency of Plan assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions. The UAAL would be different if it reflected the market value of assets rather than the smoothed value of assets.

The Unfunded Actuarial Present Value of Vested Accrued Benefits and the corresponding Vested Benefit Security Ratio may be appropriate for assessing the sufficiency of Plan assets to meet the estimated cost of settling benefit obligations but may not be appropriate for assessing the need for or the amount of future contributions.

The GASB Net Pension Liability and Plan Fiduciary Net Position as a Percentage of Total Pension Liability may not be appropriate for assessing the sufficiency of Plan assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

This report may be provided to parties other than the Pension Board only in its entirety and only with the permission of an approved representative of the Pension Board.

The signing actuaries are independent of the Plan sponsor.

The undersigned are Members of the American Academy of Actuaries and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. We are available to respond to any questions with regards to matters covered in this report.

Very truly yours,



Lawrence F. Wilson, A.S.A., E.A.
Senior Consultant and Actuary



Jennifer M. Borregard, E.A.
Consultant and Actuary

Summary of Retirement Plan Costs as of October 1, 2018General Employees Tier 1

	<u>Cost Data</u>	<u>% of Payroll</u>
A. Participant Data Summary		
1. Active employees	22	N/A
2. Terminated vested	4	N/A
3. Receiving benefits	25	N/A
4. Annual payroll of active employees	\$ 1,197,748	100.0%
B. Total Normal Costs		
1. Age retirement benefits	\$ 81,810	6.8%
2. Termination benefits	27,793	2.3%
3. Death benefits	1,210	0.1%
4. Disability benefits	8,993	0.8%
5. Estimated administrative expenses	52,435	4.4%
6. Total annual normal costs	\$ 172,241	14.4%
C. Total Actuarial Accrued Liability		
1. Age retirement benefits active employees	\$ 4,048,042	338.0%
2. Termination benefits active employees	255,260	21.3%
3. Death benefits active employees	26,436	2.2%
4. Disability benefits active employees	217,645	18.2%
5. Retired or terminated vested participants receiving benefits	7,106,729	593.3%
6. Terminated vested participants entitled to future benefits	673,794	56.3%
7. Deceased participants whose beneficiaries are receiving benefits	176,438	14.7%
8. Disabled participants receiving benefits	0	0.0%
9. Miscellaneous liability	83,178	6.9%
10. Total actuarial accrued liability	\$ 12,587,522	1050.9%
D. Market Value of Assets (Table V)	\$ 16,078,824	1342.4%
E. Smoothed Value of Assets (Table V)	\$ 15,312,080	1278.4%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ (2,724,558)	(227.5%)

Summary of Retirement Plan Costs as of October 1, 2018

General Employees Tier 1

	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution		
1. Total normal cost	\$ 172,241	14.4%
2. Amortization of unfunded liability	(246,945)	(20.6%)
3. Interest adjustment	(2,657)	(0.2%)
4. Total preliminary required contribution	<u>\$ (77,361)</u>	(6.5%)
H. Minimum Required Contribution (F.S., 112.66 (13)) (Greater of G.1. and G.4.)	\$ 172,241	14.4%
I. Contribution Sources for Fiscal Year Ending September 30, 2020		
1. City	\$ 88,399	7.4%
2. Member	83,842	7.0%
3. State	N/A	N/A
4. Total minimum funding requirement	<u>\$ 172,241</u>	14.4%
J. Actuarial Present Value of Vested Accrued Benefits		
1. Retired, terminated vested, beneficiaries and disabled receiving benefits	\$ 7,283,167	608.1%
2. Terminated vested participants entitled to future benefits and miscellaneous	756,972	63.2%
3. Active participants entitled to future benefits	<u>3,357,155</u>	280.3%
4. Total actuarial present value of vested accrued benefits	\$ 11,397,294	951.6%
K. Unfunded Actuarial Present Value of Vested Accrued Benefits (J. - D., not less than zero)	\$ 0	0.0%
L. Vested Benefit Security Ratio (D. ÷ J.)	141.1%	N/A

Summary of Retirement Plan Costs as of October 1, 2018

General Employees Tier 2

	<u>Cost Data</u>	<u>% of Payroll</u>
A. Participant Data Summary		
1. Active employees	27	N/A
2. Terminated vested	0	N/A
3. Receiving benefits	0	N/A
4. Annual payroll of active employees	\$ 1,197,564	100.0%
B. Total Normal Costs		
1. Age retirement benefits	\$ 48,573	4.1%
2. Termination benefits	21,588	1.8%
3. Death benefits	711	0.1%
4. Disability benefits	4,409	0.4%
5. Estimated administrative expenses	1,000	0.1%
6. Total annual normal costs	\$ 76,281	6.4%
C. Total Actuarial Accrued Liability		
1. Age retirement benefits active employees	\$ 231,933	19.4%
2. Termination benefits active employees	75,485	6.3%
3. Death benefits active employees	2,959	0.2%
4. Disability benefits active employees	18,821	1.6%
5. Retired or terminated vested participants receiving benefits	0	0.0%
6. Terminated vested participants entitled to future benefits	0	0.0%
7. Deceased participants whose beneficiaries are receiving benefits	0	0.0%
8. Disabled participants receiving benefits	0	0.0%
9. Miscellaneous liability	1,256	0.1%
10. Total actuarial accrued liability	\$ 330,454	27.6%
D. Market Value of Assets (Table V)	\$ 254,856	21.3%
E. Smoothed Value of Assets (Table V)	\$ 249,600	20.8%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ 80,854	6.8%

Summary of Retirement Plan Costs as of October 1, 2018

General Employees Tier 2

	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution		
1. Total normal cost	\$ 76,281	6.4%
2. Amortization of unfunded liability	6,844	0.6%
3. Interest adjustment	2,956	0.2%
4. Total preliminary required contribution	\$ 86,081	7.2%
H. Minimum Required Contribution (F.S., 112.66 (13)) (Greater of G.1. and G.4.)	\$ 86,081	7.2%
I. Contribution Sources for Fiscal Year Ending September 30, 2020		
1. City	\$ 50,154	4.2%
2. Member	35,927	3.0%
3. State	N/A	N/A
4. Total minimum funding requirement	\$ 86,081	7.2%
J. Actuarial Present Value of Vested Accrued Benefits		
1. Retired, terminated vested, beneficiaries and disabled receiving benefits	\$ 0	0.0%
2. Terminated vested participants entitled to future benefits and miscellaneous	1,256	0.1%
3. Active participants entitled to future benefits	121,352	10.1%
4. Total actuarial present value of vested accrued benefits	\$ 122,608	10.2%
K. Unfunded Actuarial Present Value of Vested Accrued Benefits (J. - D., not less than zero)	\$ 0	0.0%
L. Vested Benefit Security Ratio (D. ÷ J.)	207.9%	N/A

Summary of Retirement Plan Costs as of October 1, 2018

	<u>AMSC</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>
A. Participant Data Summary		
1. Active employees	8	N/A
2. Terminated vested	0	N/A
3. Receiving benefits	2	N/A
4. Annual payroll of active employees	\$ 1,004,692	100.0%
B. Total Normal Costs		
1. Age retirement benefits	\$ 100,426	10.0%
2. Termination benefits	16,952	1.7%
3. Death benefits	1,409	0.1%
4. Disability benefits	5,281	0.5%
5. Estimated administrative expenses	4,056	0.4%
6. Total annual normal costs	\$ 128,124	12.8%
C. Total Actuarial Accrued Liability		
1. Age retirement benefits active employees	\$ 1,379,083	137.3%
2. Termination benefits active employees	106,137	10.6%
3. Death benefits active employees	6,546	0.7%
4. Disability benefits active employees	42,231	4.2%
5. Retired or terminated vested participants receiving benefits	425,408	42.3%
6. Terminated vested participants entitled to future benefits	0	0.0%
7. Deceased participants whose beneficiaries are receiving benefits	0	0.0%
8. Disabled participants receiving benefits	0	0.0%
9. Miscellaneous liability	0	0.0%
10. Total actuarial accrued liability	\$ 1,959,405	195.0%
D. Market Value of Assets (Table V)	\$ 1,326,846	132.1%
E. Smoothed Value of Assets (Table V)	\$ 1,284,535	127.9%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ 674,870	67.2%

Summary of Retirement Plan Costs as of October 1, 2018

	<u>AMSC</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution		
1. Total normal cost	\$ 128,124	12.8%
2. Amortization of unfunded liability	56,265	5.6%
3. Interest adjustment	6,558	0.7%
4. Total preliminary required contribution	<u>\$ 190,947</u>	19.0%
H. Minimum Required Contribution (F.S., 112.66 (13)) (Greater of G.1. and G.4.)	\$ 190,947	19.0%
I. Contribution Sources for Fiscal Year Ending September 30, 2020		
1. City	\$ 120,619	12.0%
2. Member	70,328	7.0%
3. State	N/A	N/A
4. Total minimum funding requirement	<u>\$ 190,947</u>	19.0%
J. Actuarial Present Value of Vested Accrued Benefits		
1. Retired, terminated vested, beneficiaries and disabled receiving benefits	\$ 425,408	42.3%
2. Terminated vested participants entitled to future benefits and miscellaneous	0	0.0%
3. Active participants entitled to future benefits	980,346	97.6%
4. Total actuarial present value of vested accrued benefits	<u>\$ 1,405,754</u>	139.9%
K. Unfunded Actuarial Present Value of Vested Accrued Benefits (J. - D., not less than zero)	\$ 78,908	7.9%
L. Vested Benefit Security Ratio (D. ÷ J.)	94.4%	N/A

Summary of Retirement Plan Costs as of October 1, 2018

Police Officers

	<u>Cost Data</u>	<u>% of Payroll</u>
A. Participant Data Summary		
1. Active employees	50	N/A
2. Terminated vested	5	N/A
3. Receiving benefits	21	N/A
4. Annual payroll of active employees	\$ 3,275,192	100.0%
B. Total Normal Costs		
1. Age retirement benefits	\$ 430,867	13.2%
2. Termination benefits	70,301	2.1%
3. Death benefits	3,931	0.1%
4. Disability benefits	18,310	0.6%
5. Estimated administrative expenses	81,833	2.5%
6. Total annual normal costs	\$ 605,242	18.5%
C. Total Actuarial Accrued Liability		
1. Age retirement benefits active employees	\$ 11,382,755	347.5%
2. Termination benefits active employees	320,240	9.8%
3. Death benefits active employees	33,557	1.0%
4. Disability benefits active employees	219,647	6.7%
5. Retired or terminated vested participants receiving benefits	11,677,885	356.6%
6. Terminated vested participants entitled to future benefits	593,195	18.1%
7. Deceased participants whose beneficiaries are receiving benefits	0	0.0%
8. Disabled participants receiving benefits	0	0.0%
9. Miscellaneous liability	64,944	2.0%
10. Total actuarial accrued liability	\$ 24,292,223	741.7%
D. Market Value of Assets (Table V)	\$ 25,558,852	780.4%
E. Smoothed Value of Assets (Table V)	\$ 24,418,419	745.6%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ (126,196)	(3.9%)

Summary of Retirement Plan Costs as of October 1, 2018

Police Officers

	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution		
1. Total normal cost	\$ 605,242	18.5%
2. Amortization of unfunded liability	(10,039)	(0.3%)
3. Interest adjustment	21,839	0.7%
4. Total preliminary required contribution	\$ 617,042	18.8%
H. Minimum Required Contribution (F.S., 112.66 (13)) (Greater of G.1. and G.4.)	\$ 617,042	18.8%
I. Expected Payroll of Active Employees for Fiscal Year Ending 2020 (A.4. x 1.014)	\$ 3,321,045	101.4%
J. Contribution Sources for Fiscal Year Ending September 30, 2020 (% of projected payroll of active employees for fiscal year ending 2020)		
1. City	\$ 338,823	10.2%
2. Member	249,078	7.5%
3. State	37,780	1.1%
4. Total required contribution	\$ 625,681	18.8%
K. Actuarial Present Value of Vested Accrued Benefits		
1. Retired, terminated vested, beneficiaries and disabled receiving benefits	\$ 11,677,885	356.6%
2. Terminated vested participants entitled to future benefits and miscellaneous	658,139	20.1%
3. Active participants entitled to future benefits	6,348,682	193.8%
4. Total actuarial present value of vested accrued benefits	\$ 18,684,706	570.5%
L. Unfunded Actuarial Present Value of Vested Accrued Benefits (K. - D., not less than zero)	\$ 0	0.0%
M. Vested Benefit Security Ratio (D. ÷ K.)	136.8%	N/A

Summary of Retirement Plan Costs as of October 1, 2018

All Participants

	<u>Cost Data</u>	<u>% of Payroll</u>
A. Participant Data Summary		
1. Active employees	107	N/A
2. Terminated vested	9	N/A
3. Receiving benefits	48	N/A
4. Annual payroll of active employees	\$ 6,675,196	100.0%
B. Total Normal Costs		
1. Age retirement benefits	\$ 661,676	9.9%
2. Termination benefits	136,634	2.0%
3. Death benefits	7,261	0.1%
4. Disability benefits	36,993	0.6%
5. Estimated administrative expenses	139,324	2.1%
6. Total annual normal costs	\$ 981,888	14.7%
C. Total Actuarial Accrued Liability		
1. Age retirement benefits active employees	\$ 17,041,813	255.3%
2. Termination benefits active employees	757,122	11.3%
3. Death benefits active employees	69,498	1.0%
4. Disability benefits active employees	498,344	7.5%
5. Retired or terminated vested participants receiving benefits	19,210,022	287.8%
6. Terminated vested participants entitled to future benefits	1,266,989	19.0%
7. Deceased participants whose beneficiaries are receiving benefits	176,438	2.6%
8. Disabled participants receiving benefits	0	0.0%
9. Miscellaneous liability	149,378	2.2%
10. Total actuarial accrued liability	\$ 39,169,604	586.8%
D. Market Value of Assets (Table V)	\$ 43,219,378	647.5%
E. Smoothed Value of Assets (Table V)	\$ 41,264,634	618.2%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ (2,095,030)	(31.4%)

Summary of Retirement Plan Costs as of October 1, 2018All Participants

	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution		
1. Total normal cost	\$ 981,888	14.7%
2. Amortization of unfunded liability	(193,875)	(2.9%)
3. Interest adjustment	28,696	0.4%
4. Total preliminary required contribution	<u>\$ 816,709</u>	12.2%
H. Minimum Required Contribution (F.S., 112.66 (13))	\$ 1,066,311	16.0%
I. Expected Payroll of Active Employees for Fiscal Year Ending 2020 (\$1,197,748 x 1.000 + \$1,197,564 x 1.000 + \$1,004,692 x 1.000 + \$3,275,192 x 1.014)	\$ 6,721,049	100.7%
J. Contribution Sources for Fiscal Year Ending September 30, 2020 (% of projected payroll of active employees for fiscal year ending 2020)		
1. City	\$ 597,995	8.9%
2. Member	439,175	6.5%
3. State	37,780	0.6%
4. Total required contribution	<u>\$ 1,074,950</u>	16.0%
K. Actuarial Present Value of Vested Accrued Benefits		
1. Retired, terminated vested, beneficiaries and disabled receiving benefits	\$ 19,386,460	290.4%
2. Terminated vested participants entitled to future benefits and miscellaneous	1,416,367	21.2%
3. Active participants entitled to future benefits	<u>10,807,535</u>	161.9%
4. Total actuarial present value of vested accrued benefits	\$ 31,610,362	473.5%
L. Unfunded Actuarial Present Value of Vested Accrued Benefits (K. - D., not less than zero)	\$ 0	0.0%
M. Vested Benefit Security Ratio (D. ÷ K.)	136.7%	N/A

Comparison of Cost Data of October 1, 2017 and October 1, 2018 ValuationsGeneral Employees Tier 1

	<u>October 1, 2017</u>		<u>October 1, 2018</u>	
	<u>Cost Data</u>	<u>% of Annual Compensation</u>	<u>Cost Data</u>	<u>% of Annual Compensation</u>
A. Participants				
1. Active employees	25	N/A	22	N/A
2. Terminated vested	3	N/A	4	N/A
3. Receiving benefits	27	N/A	25	N/A
4. Annual payroll of active employees	\$ 1,288,496	100.0%	\$ 1,197,748	100.0%
B. Total Normal Costs	\$ 188,814	14.7%	\$ 172,241	14.4%
C. Total Actuarial Accrued Liability	\$ 13,198,024	1024.3%	\$ 12,587,522	1050.9%
D. Smoothed Value of Assets	\$ 14,549,411	1129.2%	\$ 15,312,080	1278.4%
E. Unfunded Actuarial Accrued Liability	\$ (1,351,387)	(104.9%)	\$ (2,724,558)	(227.5%)
F. Member Cost	\$ 90,195	7.0%	\$ 83,842	7.0%
G. City Cost (includes expenses)	\$ 98,619	7.7%	\$ 88,399	7.4%
H. Actuarial Present Value of Vested Accrued Benefits	\$ 11,905,662	924.0%	\$ 11,397,294	951.6%
I. Vested Benefit Security Ratio	126.8%	N/A	141.1%	N/A

Comparison of Cost Data of October 1, 2017 and October 1, 2018 Valuations

General Employees Tier 2

	October 1, 2017		October 1, 2018	
	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation
A. Participants				
1. Active employees	24	N/A	27	N/A
2. Terminated vested	0	N/A	0	N/A
3. Receiving benefits	0	N/A	0	N/A
4. Annual payroll of active employees	\$ 1,003,128	100.0%	\$ 1,197,564	100.0%
B. Total Normal Costs	\$ 66,713	6.7%	\$ 76,281	6.4%
C. Total Actuarial Accrued Liability	\$ 215,700	21.5%	\$ 330,454	27.6%
D. Smoothed Value of Assets	\$ 166,660	16.6%	\$ 249,600	20.8%
E. Unfunded Actuarial Accrued Liability	\$ 49,040	4.9%	\$ 80,854	6.8%
F. Member Cost	\$ 30,094	3.0%	\$ 35,927	3.0%
G. City Cost (includes expenses)	\$ 43,251	4.3%	\$ 50,154	4.2%
H. Actuarial Present Value of Vested Accrued Benefits	\$ 81,587	8.1%	\$ 122,608	10.2%
I. Vested Benefit Security Ratio	207.6%	N/A	207.9%	N/A

Comparison of Cost Data of October 1, 2017 and October 1, 2018 Valuations

	<u>AMSC</u>			
	<u>October 1, 2017</u>		<u>October 1, 2018</u>	
	<u>Cost Data</u>	<u>% of Annual Compensation</u>	<u>Cost Data</u>	<u>% of Annual Compensation</u>
A. Participants				
1. Active employees	8	N/A	8	N/A
2. Terminated vested	0	N/A	0	N/A
3. Receiving benefits	1	N/A	2	N/A
4. Annual payroll of active employees	\$ 984,777	100.0%	\$ 1,004,692	100.0%
B. Total Normal Costs	\$ 124,076	12.6%	\$ 128,124	12.8%
C. Total Actuarial Accrued Liability	\$ 1,245,169	126.4%	\$ 1,959,405	195.0%
D. Smoothed Value of Assets	\$ 1,052,987	106.9%	\$ 1,284,535	127.9%
E. Unfunded Actuarial Accrued Liability	\$ 192,182	19.5%	\$ 674,870	67.2%
F. Member Cost	\$ 68,934	7.0%	\$ 70,328	7.0%
G. City Cost (includes expenses)	\$ 76,251	7.7%	\$ 120,619	12.0%
H. Actuarial Present Value of Vested Accrued Benefits	\$ 1,034,156	105.0%	\$ 1,405,754	139.9%
I. Vested Benefit Security Ratio	104.4%	N/A	94.4%	N/A

Comparison of Cost Data of October 1, 2017 and October 1, 2018 Valuations

	<u>Police Officers</u>			
	<u>October 1, 2017</u>		<u>October 1, 2018</u>	
	<u>Cost Data</u>	<u>% of Annual Compensation</u>	<u>Cost Data</u>	<u>% of Annual Compensation</u>
A. Participants				
1. Active employees	44	N/A	50	N/A
2. Terminated vested	5	N/A	5	N/A
3. Receiving benefits	20	N/A	21	N/A
4. Annual payroll of active employees	\$ 2,970,815	100.0%	\$ 3,275,192	100.0%
B. Total Normal Costs	\$ 580,094	19.5%	\$ 605,242	18.5%
C. Total Actuarial Accrued Liability	\$ 23,514,576	791.5%	\$ 24,292,223	741.7%
D. Smoothed Value of Assets	\$ 22,292,682	750.4%	\$ 24,418,419	745.6%
E. Unfunded Actuarial Accrued Liability	\$ 1,221,894	41.1%	\$ (126,196)	(3.9%)
F. Member Cost	\$ 279,650	9.4% ¹	\$ 249,078	7.5% ²
G. City Cost (includes expenses)	\$ 449,028	15.1% ¹	\$ 338,823	10.2% ²
H. Actuarial Present Value of Vested Accrued Benefits	\$ 19,159,764	644.9%	\$ 18,684,706	570.5%
I. Vested Benefit Security Ratio	120.6%	N/A	136.8%	N/A

¹ Percent of expected 2018-2019 covered payroll (\$2,970,815)

² Percent of expected 2019-2020 covered payroll (\$3,321,045)

Comparison of Cost Data of October 1, 2017 and October 1, 2018 Valuations

	<u>All Participants</u>			
	<u>October 1, 2017</u>		<u>October 1, 2018</u>	
	<u>Cost Data</u>	<u>% of Annual Compensation</u>	<u>Cost Data</u>	<u>% of Annual Compensation</u>
A. Participants				
1. Active employees	101	N/A	107	N/A
2. Terminated vested	8	N/A	9	N/A
3. Receiving benefits	48	N/A	48	N/A
4. Annual payroll of active employees	\$ 6,247,216	100.0%	\$ 6,675,196	100.0%
B. Total Normal Costs	\$ 959,697	15.4%	\$ 981,888	14.7%
C. Total Actuarial Accrued Liability	\$ 38,173,469	611.0%	\$ 39,169,604	586.8%
D. Smoothed Value of Assets	\$ 38,061,740	609.3%	\$ 41,264,634	618.2%
E. Unfunded Actuarial Accrued Liability	\$ 111,729	1.8%	\$ (2,095,030)	(31.4%)
F. Member Cost	\$ 468,873	7.5% ¹	\$ 439,175	6.5% ²
G. City Cost (includes expenses)	\$ 667,149	10.7% ¹	\$ 597,995	8.9% ²
H. Actuarial Present Value of Vested Accrued Benefits	\$ 32,181,169	515.1%	\$ 31,610,362	473.5%
I. Vested Benefit Security Ratio	122.6%	N/A	136.7%	N/A

¹ Percent of expected 2018-2019 covered payroll (\$6,247,216)

² Percent of expected 2019-2020 covered payroll (\$6,721,049)

Characteristics of Participants in
Actuarial Valuation as of October 1, 2018

	General				Total
	Tier 1	Tier 2	AMSC	Police	
A. <u>Active Plan Participants Summary</u>					
1. Active participants fully vested	17	6	7	20	50
2. Active participants partially vested	0	0	0	0	0
3. Active participants non-vested	5	21	1	30	57
4. Total active participants	22	27	8	50	107
5. Annual rate of pay of active participants	\$ 1,197,748	\$ 1,197,564	\$ 1,004,692	\$ 3,275,192	\$ 6,675,196
B. <u>Retired and Terminated Vested Participant Summary</u>					
1. Retired or terminated vested participants receiving benefits	24	0	2	21	47
2. Terminated vested participants entitled to future benefits	4	0	0	5	9
3. Deceased participants whose beneficiaries are receiving benefits	1	0	0	0	1
4. Disabled participants receiving benefits	0	0	0	0	0
C. <u>Projected Annual Retirement Benefits</u>					
1. Retired or terminated vested receiving benefits	\$ 585,603	\$ 0	\$ 44,009	\$ 886,250	\$ 1,515,862
2. Terminated vested entitled to future benefits	\$ 89,257	\$ 0	\$ 0	\$ 116,164	\$ 205,421
3. Beneficiaries of deceased participants	\$ 14,805	\$ 0	\$ 0	\$ 0	\$ 14,805
4. Disabled participants	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

Statement of Assets as of October 1, 2018

	General		AMSC	Police	Total
	Tier 1	Tier 2			
<u>Market Value of Assets</u>					
A. <u>General Investments</u>					
1. Cash and Cash Equivalents	\$ 85,509	\$ 1,348	\$ 7,044	\$ 134,294	\$ 228,195
2. U.S. Government Securities	1,422,105	22,423	117,145	2,233,461	3,795,134
3. Common Stocks	2,392,948	37,731	197,118	3,758,199	6,385,996
4. Corporate Obligations	2,560,608	40,374	210,928	4,021,515	6,833,425
5. International Equity	286,747	4,521	23,621	450,344	765,233
6. Real Estate	638,998	10,075	52,637	1,003,567	1,705,277
7. Mutual Funds					
Equity	6,115,833	96,433	503,786	9,605,105	16,321,157
International Equity	2,556,802	40,314	210,615	4,015,537	6,823,268
8. Prepaid Insurance	677	11	56	1,064	1,808
9. Total General Investments	\$ 16,060,227	\$ 253,230	\$ 1,322,950	\$ 25,223,086	\$ 42,859,493
B. <u>Receivables</u>					
1. City Contributions	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2. Employee Contributions	3,255	1,384	2,631	12,892	20,162
3. Share Plan Contributions	0	0	0	37,780 *	37,780 *
4. Interest and Dividends	38,591	608	3,179	60,610	102,988
5. Other	0	0	0	260,999	260,999
6. Pending Trades	2,327	37	192	3,653	6,209
7. Total Receivables	\$ 44,173	\$ 2,029	\$ 6,002	\$ 375,934	\$ 428,138
C. <u>Payables</u>					
1. Accounts Payable	\$ 19,269	\$ 304	\$ 1,587	\$ 30,263	\$ 51,423
2. Pending Trades	6,307	99	519	9,905	16,830
3. Total Payables	\$ 25,576	\$ 403	\$ 2,106	\$ 40,168	\$ 68,253
D. <u>Total Assets (A. + B. - C.)</u>	\$ 16,078,824	\$ 254,856	\$ 1,326,846	\$ 25,558,852	\$ 43,219,378

* State Monies received fiscal year ended September 30, 2018.

Reconciliation of Plan Assets

	General		AMSC	Police	Total
	Tier 1	Tier 2			
A. <u>Market Value of Assets as of October 1, 2017</u>	\$ 15,099,831	\$ 169,399	\$ 1,079,990	\$ 23,100,141	\$ 39,449,361
B. <u>Receipts During Year</u>					
1. Contributions					
a. Members	\$ 90,352	\$ 35,964	\$ 71,753	\$ 338,404	\$ 536,473
b. City	86,064	29,759	75,039	461,990	652,852
c. State	0	0	0	37,780	37,780
d. Total	\$ 176,416	\$ 65,723	\$ 146,792	\$ 838,174	\$ 1,227,105
2. Investment income					
a. Interest, dividends and other	\$ 295,119	\$ 4,016	\$ 22,782	\$ 460,577	\$ 782,494
b. Investment expenses	(59,062)	(804)	(4,559)	(92,174)	(156,599)
c. Net interest and dividends	\$ 236,057	\$ 3,212	\$ 18,223	\$ 368,403	\$ 625,895
3. Realized and unrealized gain / (loss)					
a. Realized gain / (loss)	\$ 753,196	\$ 10,249	\$ 58,143	\$ 1,175,476	\$ 1,997,064
b. Unrealized gain / (loss)	513,523	6,988	39,641	801,431	1,361,583
c. Net realized and unrealized gain/(loss)	\$ 1,266,719	\$ 17,237	\$ 97,784	\$ 1,976,907	\$ 3,358,647
4. Other	0	0	0	260,999	260,999
5. Total receipts during period	\$ 1,679,192	\$ 86,172	\$ 262,799	\$ 3,444,483	\$ 5,472,646
C. <u>Disbursements During Year</u>					
1. Benefit payments	\$ 622,113	\$ 0	\$ 11,887	\$ 828,029	\$ 1,462,029
2. Contribution refunds	25,540	0	0	75,736	101,276
3. Administrative expenses	52,546	715	4,056	82,007	139,324
4. Total disbursements during period	\$ 700,199	\$ 715	\$ 15,943	\$ 985,772	\$ 1,702,629
D. <u>Market Value of Assets as of October 1, 2018</u>	\$ 16,078,824	\$ 254,856	\$ 1,326,846	\$ 25,558,852	\$ 43,219,378
E. <u>Estimated expenses to be paid by the City as of October 1, 2018</u>					
1. Administrative	\$ 52,435	\$ 1,000	\$ 4,056	\$ 81,833	\$ 139,324
2. Investment	\$ 59,062	\$ 804	\$ 4,559	\$ 92,174	\$ 156,599

All Participants

Development of Smoothed Value of Assets as of September 30

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
A. Preliminary smoothed value from prior year	\$ 34,881,815	\$ 38,061,740	\$ 41,264,634			
B. Market value beginning of year	\$ 35,049,134	\$ 39,449,361	\$ 43,219,378			
C. Market value end of year	\$ 39,449,361	\$ 43,219,378				
D. Non-investment net cash flow	\$ (142,466)	\$ (214,525)				
E. Investment return						
1. Total market value return: C. - B. - D.	\$ 4,542,693	\$ 3,984,542				
2. Amount for immediate recognition (7.375%)	2,579,620	2,901,480				
3. Amount for phased-in recognition: E.1. - E.2.	1,963,073	1,083,062				
F. Phased-in recognition of investment return						
1. Current year: 20% of E.3.	\$ 392,615	\$ 216,612				
2. First prior year	191,037	392,615	216,612			
3. Second prior year	(471,622)	191,037	392,615	216,612		
4. Third prior year	187,293	(471,622)	191,037	392,615	216,612	
5. Fourth prior year	443,448	187,297	(471,621)	191,035	392,613	216,614
6. Total phased-in recognition of investment return	\$ 742,771	\$ 515,939	\$ 328,643	\$ 800,262	\$ 609,225	\$ 216,614
G. Smoothed value end of year						
1. Preliminary smoothed value end of year:						
A. + D. + E.2. + F.6.	\$ 38,061,740	\$ 41,264,634				
2. Upper corridor limit: 120% of C.	47,339,233	51,863,254				
3. Lower corridor limit: 80% of C.	31,559,489	34,575,502				
4. Smoothed value end of year:						
G.1., not more than G.2., nor less than G.3.	\$ 38,061,740	\$ 41,264,634				
H. Difference between market value and smoothed value	\$ 1,387,621	\$ 1,954,744				
I. Smoothed value rate of return	9.544%	9.004%				
J. Market value rate of return	12.987%	10.128%				

Allocation of Smoothed Value of Assets for Budgeting Purposes

	General		AMSC	Police	Total
	Tier 1	Tier 2			
A. <u>Smoothed Value as of October 1, 2017</u>	\$ 14,549,411	\$ 166,660	\$ 1,052,987	\$ 22,292,682	\$ 38,061,740
B. <u>Receipts During Period</u>					
1. Member Contributions	\$ 90,352	\$ 35,964	\$ 71,753	\$ 338,404	\$ 536,473
2. City Contributions	86,064	29,759	75,039	461,990	652,852
3. State Contributions	0	0	0	37,780	37,780
4. Other	0	0	0	260,999	260,999
5. Net Investment Return	<u>1,286,452</u>	<u>17,932</u>	<u>100,699</u>	<u>2,012,336</u>	<u>3,417,419</u>
6. Total Receipts During Period	\$ 1,462,868	\$ 83,655	\$ 247,491	\$ 3,111,509	\$ 4,905,523
C. <u>Disbursements During Period</u>					
1. Benefit Payments	\$ 622,113	\$ 0	\$ 11,887	\$ 828,029	\$ 1,462,029
2. Contribution Refunds	25,540	0	0	75,736	101,276
3. Administrative Expenses	<u>52,546</u>	<u>715</u>	<u>4,056</u>	<u>82,007</u>	<u>139,324</u>
4. Total Disbursements During Period	\$ 700,199	\$ 715	\$ 15,943	\$ 985,772	\$ 1,702,629
D. <u>Smoothed Value as of September 30, 2018</u>	\$ 15,312,080	\$ 249,600	\$ 1,284,535	\$ 24,418,419	\$ 41,264,634

Actuarial Gain / (Loss) for
Plan Year Ended September 30, 2018

(General Employees Tier 1)

A. Derivation of Actuarial Gain / (Loss)

1. City normal cost previous actuarial valuation		\$	98,619
2. Unfunded actuarial accrued liability previous actuarial valuation			(1,351,387)
3. City contributions previous year			86,064
4. Interest on:			
(a) Normal cost	\$	7,273	
(b) Unfunded actuarial accrued liability		(99,665)	
(c) Contributions		3,174	
(d) Net total: (a) + (b) - (c)		\$	(95,566)
5. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4.)		\$	(1,434,398)
6. Actual unfunded actuarial accrued liability current year			(2,724,558)
7. Actuarial gain / (loss): (5. - 6.)		\$	1,290,160

B. Approximate Portion of Gain / (Loss)

Due to Investments

1. Smoothed value of assets previous year		\$	14,549,411
2. Contributions during year			176,416
3. Benefits and admin expenses during year			700,199
4. Expected appreciation for period			1,053,705
5. Expected smoothed value of assets current year (1. + 2. - 3. + 4.)		\$	15,079,333
6. Actual smoothed value of assets current year			15,312,080
7. Approximate gain / (loss) due to investments: (6. - 5.)		\$	232,747

C. Approximate Portion of Gain / (Loss)

Due to Liabilities: A. - B.

\$ 1,057,413

Actuarial Gain / (Loss) for
Plan Year Ended September 30, 2018

(General Employees Tier 2)

A. Derivation of Actuarial Gain / (Loss)

1. City normal cost previous actuarial valuation	\$	36,619
2. Unfunded actuarial accrued liability previous actuarial valuation		49,040
3. City contributions previous year		29,759
4. Interest on:		
(a) Normal cost	\$ 2,701	
(b) Unfunded actuarial accrued liability	3,617	
(c) Contributions	1,097	
(d) Net total: (a) + (b) - (c)	\$ 5,221	
5. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4.)	\$	61,121
6. Actual unfunded actuarial accrued liability current year		80,854
7. Actuarial gain / (loss): (5. - 6.)	\$	(19,733)

B. Approximate Portion of Gain / (Loss)

Due to Investments

1. Smoothed value of assets previous year	\$	166,660
2. Contributions during year		65,723
3. Benefits and admin expenses during year		715
4. Expected appreciation for period		14,688
5. Expected smoothed value of assets current year (1. + 2. - 3. + 4.)	\$	246,356
6. Actual smoothed value of assets current year		249,600
7. Approximate gain / (loss) due to investments: (6. - 5.)	\$	3,244

C. Approximate Portion of Gain / (Loss)

Due to Liabilities: A. - B.

\$ (22,977)

Actuarial Gain / (Loss) for
Plan Year Ended September 30, 2018

(AMSC)

A. Derivation of Actuarial Gain / (Loss)

1. City normal cost previous actuarial valuation	\$	55,142
2. Unfunded actuarial accrued liability previous actuarial valuation		192,182
3. City contributions previous year		75,039
4. Interest on:		
(a) Normal cost	\$	4,067
(b) Unfunded actuarial accrued liability		14,173
(c) Contributions		2,767
(d) Net total: (a) + (b) - (c)		15,473
5. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4.)	\$	187,758
6. Actual unfunded actuarial accrued liability current year		674,870
7. Actuarial gain / (loss): (5. - 6.)	\$	(487,112)

B. Approximate Portion of Gain / (Loss)

Due to Investments

1. Smoothed value of assets previous year	\$	1,052,987
2. Contributions during year		146,792
3. Benefits and admin expenses during year		15,943
4. Expected appreciation for period		82,483
5. Expected smoothed value of assets current year (1. + 2. - 3. + 4.)	\$	1,266,319
6. Actual smoothed value of assets current year		1,284,535
7. Approximate gain / (loss) due to investments: (6. - 5.)	\$	18,216

C. Approximate Portion of Gain / (Loss)

Due to Liabilities: A. - B.

\$ (505,328)

Actuarial Gain / (Loss) for
Plan Year Ended September 30, 2018

(Police Officers)

A. Derivation of Actuarial Gain / (Loss)

1. City / State normal cost previous actuarial valuation		\$		300,444
2. Unfunded actuarial accrued liability previous actuarial valuation				1,221,894
3. Contributions previous year				
(a) City	\$	461,990		
(b) State		37,780		
(c) Total			\$	499,770
4. Interest on:				
(a) Normal cost	\$	22,158		
(b) Unfunded actuarial accrued liability		90,115		
(c) Contributions		17,732		
(d) Net total: (a) + (b) - (c)			\$	94,541
5. Increase (decrease) in actuarial accrued liability due to settlement			\$	260,999
6. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4. + 5.)			\$	1,378,108
7. Actual unfunded actuarial accrued liability current year				(126,196)
8. Actuarial gain / (loss): (6. - 7.)			\$	1,504,304

B. Approximate Portion of Gain / (Loss)
Due to Investments

1. Smoothed value of assets previous year		\$		22,292,682
2. Contributions during year				838,174
3. Other receipts during year				260,999
4. Benefits and admin expenses during year				985,772
5. Expected appreciation for period				1,637,946
6. Expected smoothed value of assets current year (1. + 2. + 3. - 4. + 5.)			\$	24,044,029
7. Actual smoothed value of assets current year				24,418,419
8. Approximate gain / (loss) due to investments: (7. - 6.)			\$	374,390

C. Approximate Portion of Gain / (Loss)
Due to Liabilities: A. - B.

\$ 1,129,914

Amortization of Unfunded Actuarial Accrued LiabilityA. Unfunded Actuarial Accrued Liability

<u>Date</u>	<u>General Employees</u>		<u>General Employees</u>	
	<u>Tier 1</u>		<u>Tier 2</u>	
	<u>Unfunded Liability</u>	<u>Amortization Payment</u>	<u>Unfunded Liability</u>	<u>Amortization Payment</u>
October 1, 2018	\$ (2,724,558)	\$ (246,945)	\$ 80,854	\$ 6,844
October 1, 2019	\$ (2,660,337)	\$ (246,945)	\$ 79,468	\$ 6,844
October 1, 2020	\$ (2,591,380)	\$ (246,945)	\$ 77,980	\$ 6,844
October 1, 2021	\$ (2,517,337)	\$ (246,945)	\$ 76,382	\$ 6,844
October 1, 2022	\$ (2,437,833)	\$ (246,945)	\$ 74,666	\$ 6,844
...				
October 1, 2043	\$ 0	\$ 0	\$ 0	\$ 0
<u>Date</u>	<u>AMSC</u>		<u>Police Officers</u>	
	<u>Unfunded Liability</u>	<u>Amortization Payment</u>	<u>Unfunded Liability</u>	<u>Amortization Payment</u>
October 1, 2018	\$ 674,870	\$ 56,265	\$ (126,196)	\$ (10,039)
October 1, 2019	\$ 664,227	\$ 56,265	\$ (124,724)	\$ (10,180)
October 1, 2020	\$ 652,799	\$ 56,265	\$ (122,992)	\$ (10,323)
October 1, 2021	\$ 640,528	\$ 56,265	\$ (120,978)	\$ (10,468)
October 1, 2022	\$ 627,352	\$ 56,265	\$ (118,660)	\$ (10,615)
...				
October 1, 2048	\$ 0	\$ 0	\$ 0	\$ 0

B. Covered Payroll History

<u>Date</u>	<u>Police Officers</u>	
	<u>Covered Payroll</u>	<u>Annual Increase</u>
October 1, 2018	\$ 3,275,192	10.2%
October 1, 2017	\$ 2,970,815	(7.6%)
October 1, 2016	\$ 3,214,004	(0.5%)
October 1, 2015	\$ 3,229,332	3.3%
October 1, 2014	\$ 3,127,368	12.1%
October 1, 2013	\$ 2,789,742	(2.4%)
October 1, 2012	\$ 2,857,846	(6.3%)
October 1, 2011	\$ 3,050,052	(0.6%)
October 1, 2010	\$ 3,067,558	(3.6%)
October 1, 2009	\$ 3,183,318	11.4%
October 1, 2008	\$ 2,857,555	N/A
10-Year Average Annual Increase		1.4%

Accounting Disclosure Exhibit

	<u>10/01/2017</u>	<u>10/01/2018</u>
I. <u>Number of Plan Members</u>		
a. Retirees and beneficiaries receiving benefits	48	48
b. Terminated Plan members entitled to deferred benefits	8	9
c. Active Plan members	101	107
d. Total	<u>157</u>	<u>164</u>
II. <u>Financial Accounting Standards Board Allocation</u> <u>As of October 1, 2018</u>		
A. <u>Statement of Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated vested Plan benefits		
a. Participants currently receiving benefits	\$ 18,707,448	\$ 19,386,460
b. Other participants	13,473,721	12,223,902
c. Total	<u>\$ 32,181,169</u>	<u>\$ 31,610,362</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>\$ 1,646,167</u>	<u>\$ 3,134,126</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 33,827,336	\$ 34,744,488
B. <u>Statement of Change in Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated Plan benefits as of October 1, 2017		\$ 33,827,336
2. Increase / (decrease) during year attributable to:		
a. Change in actuarial assumptions and / or Plan amendments		\$ 0
b. Benefits paid		(1,563,305)
c. Other, including benefits accumulated, increase for interest due to decrease in the discount period		<u>2,480,457</u>
d. Net increase		\$ 917,152
3. Actuarial present value of accumulated plan benefits as of October 1, 2018		\$ 34,744,488
C. <u>Significant Matters Affecting Calculations</u>		
1. Assumed rate of return used in determining actuarial present value		7.375%
2. Change in Plan provisions		None.
3. Change in actuarial assumptions		None.

Accounting Disclosure Exhibit

III. Net Pension Liability and Related Ratios (GASB No. 67 & No. 68)

Measurement Date	9/30/2014 ¹	9/30/2015 ¹	9/30/2016	9/30/2017	9/30/2018	Projected 9/30/2019 ²
A. Total Pension Liability (TPL)						
Service Cost	\$ 669,181	\$ 686,435	\$ 697,537	\$ 846,884	\$ 796,141	\$ 842,564
Interest	2,299,340	2,381,731	2,460,415	2,630,646	2,834,288	2,884,660
Benefit Changes	0	0	0	(20,122)	0	0
Difference Between Actual and Expected Experience	(598,374)	(502,259)	(656,677)	(112,807)	901,489	(1,314,061)
Assumption Changes	0	0	0	566,118	0	0
Benefit Payments, including Refunds of Member Contributions	(1,315,113)	(1,417,586)	(1,293,782)	(1,570,751)	(1,563,305)	(1,796,269)
Net Change in Total Pension Liability	\$ 1,055,034	\$ 1,148,321	\$ 1,207,493	\$ 2,339,968	\$ 2,968,613	\$ 616,894
Total Pension Liability (TPL) - (beginning of year)	31,764,236	32,819,270	33,967,591	35,175,084	37,515,052	40,483,665
Total Pension Liability (TPL) - (end of year)	\$ 32,819,270	\$ 33,967,591	\$ 35,175,084	\$ 37,515,052	\$ 40,483,665	\$ 41,100,559
B. Plan Fiduciary Net Position						
Contributions - City and State	\$ 878,217	\$ 834,251	\$ 570,154	\$ 681,713	\$ 690,632	\$ 704,929
Contributions - Member	593,396	562,835	490,452	910,127	536,473	497,965
Net Investment Income	3,054,164	16,750	3,306,002	4,542,693	3,984,542	3,160,411
Benefit Payments, including Refunds of Member Contributions	(1,315,113)	(1,417,586)	(1,293,782)	(1,570,751)	(1,563,305)	(1,796,269)
Administrative Expenses	(100,780)	(135,093)	(129,291)	(163,555)	(139,324)	(139,324)
Other	6,784	4,454	2,835	0	260,999	0
Net Change in Plan Fiduciary Net Position	\$ 3,116,668	\$ (134,389)	\$ 2,946,370	\$ 4,400,227	\$ 3,770,017	\$ 2,427,712
Plan Fiduciary Net Position - (beginning of year)	29,120,485	32,237,153	32,102,764	35,049,134	39,449,361	43,219,378
Plan Fiduciary Net Position - (end of year)	\$ 32,237,153	\$ 32,102,764	\$ 35,049,134	\$ 39,449,361	\$ 43,219,378	\$ 45,647,090
C. Net Pension Liability (NPL) - (end of year): (A) - (B)	\$ 582,117	\$ 1,864,827	\$ 125,950	\$ (1,934,309)	\$ (2,735,713)	\$ (4,546,531)
D. Plan Fiduciary Net Position as a Percentage of TPL: (B) / (A)	98.23 %	94.51 %	99.64 %	105.16 %	106.76 %	111.06 %
E. Covered Employee Payroll³	\$ 4,902,128	\$ 4,086,300	\$ 4,861,991	\$ 6,368,739	\$ 6,447,564	\$ 6,675,196
F. NPL as a Percentage of Covered Employee Payroll: (C) / (E)	11.87 %	45.64 %	2.59 %	(30.37)%	(42.43)%	(68.11)%
G. Notes to Schedule:						
Valuation Date	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018
Reporting Date (GASB No. 68)	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019	9/30/2020

Update procedures used to roll forward TPL to the measurement dates.

See Notes to Schedule of Contributions for a history of benefit and assumption changes. No benefit or assumption changes for measurement period ending September 30, 2018.

¹ As Reported in Plan's financial statements

² Projected - actual amounts will be available after fiscal year end

³ Reported payroll on which contributions to the Plan are based as provided under GASB No. 82

Accounting Disclosure Exhibit

IV. Schedule of Employer Contributions (GASB No. 67 & No. 68)

<u>Fiscal Year End 9/30</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered Payroll^{1,2}</u>	<u>Actual Contribution as a % of Covered Payroll</u>
2009	\$ 843,731	\$ 843,731	\$ 0	\$ 6,204,089	13.60%
2010	1,257,246	1,257,246	0	7,619,762	16.50%
2011	1,266,587	1,273,320	(6,733)	6,830,908	18.64%
2012	1,021,975	1,021,975	0	5,423,152	18.84%
2013	860,190	860,190	0	4,861,701	17.69%
2014	878,217	878,217	0	4,902,128	17.92%
2015	834,251	834,251	0	4,086,300	20.42%
2016	570,154	570,154	0	4,861,991	11.73%
2017	680,568	681,713	(1,145)	6,368,739	10.70%
2018	690,632	690,632	0	6,447,564	10.71%
2019 ³	704,929	704,929	0	6,675,196	10.56%

¹ Projected prior to fiscal year ended September 30, 2014

² Reported payroll on which contributions to the Plan are based as provided under GASB No. 82

³ Projected - actual amounts will be available after fiscal year end

Accounting Disclosure Exhibit

V. Notes to Schedule of Contributions (GASB No. 67 & No. 68)

Valuation Date: Actuarially determined contributions are calculated as of October 1st - two year(s) prior the fiscal year end in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year Ending September 30, 2019:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Amortization Period	25 years for General Employees and AMSC; 30 years for Police Officers
Asset Valuation Method	5-year smoothed
Inflation	2.75%
Salary Increases	3.75% - 5.25%
Investment Rate of Return	7.375%
Payroll Growth Assumption	4.0% per year, but limited to average annual increase over most recent ten years (-0.7%) for Police Officers. None for General Employees including AMSC.
Retirement Age	Experience-based table of rates specific to the type of eligibility condition
Mortality	<p>General including AMSC members - healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.</p> <p>Police Members - healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Table with separate rates for males and females, with 10% White Collar / 90% Blue Collar Adjustment for Police members and fully generational mortality improvements projected to each future decrement date with Scale BB.</p> <p>General including AMSC members - healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.</p> <p>Police Members - healthy participants post employment, RP 2000 Annuitant Mortality Table with separate rates for males and females, with 10% White Collar / 90% Blue Collar Adjustment for Police members and fully generational mortality improvements projected to each future decrement date with Scale BB.</p> <p>General including AMSC members - disabled male participants, RP 2000 Disabled Male Mortality Table, setback four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.</p> <p>Police members - disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table, with White Collar Adjustment and no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment, without projected mortality improvements.</p>
Cost-of-Living Increases	3.0% / 0.0%

Other Information:

Benefit Changes

2015: Re-opened Plan to General Employees effective October 1, 2016 with a new class of benefits (Tier 2); created new class of benefits for employees who hold management positions effective October 1, 2016 (AMSC); added a 10% cap on employee contributions for Tier 1 General Employees; added a 12% cap on employee contributions for Police Lieutenants and Captains; Final Average Compensation updated to the average of the best five years for Police Lieutenants and Captains; caps overtime hours at 300 hours per fiscal year for Police Lieutenants and Captains.

Accounting Disclosure Exhibit

V. Notes to Schedule of Contributions (GASB No. 67 & No. 68) (cont'd)

Benefit Changes (cont'd)

2011: Eligibility requirements updated to include only General Employees hired before October 1, 2011; Final Average Compensation updated to the average of the final 60 consecutive months of basic compensation for General Employees; Normal Retirement eligibility updated to age 60 and completion of 10 years of Credited Service for benefits accrued after September 30, 2011 for General Employees; benefit multiplier decreased to 2.25% for benefits accrued after September 30, 2011 for General Employees; cost-of-living increases eliminated for benefits accrued after September 30, 2011 for General Employees; Final Average Compensation for members covered under the Police Officers and Sergeants collective bargaining agreement updated to the average of the best five (5) years of basic compensation. 2010: Interest on refunds of accumulated member contributions eliminated for General Employees. 2009: Effective October 1, 2009 and for one fiscal year thereafter, participant contributions for non-bargaining unit employees, members of the AFSME bargaining unit and members of the Police Lieutenant and Captains bargaining unit reduced by two percent (2%).

Assumption Changes

2016: Mortality assumptions updated to the mortality assumptions used in the Florida Retirement System July 1, 2016 Actuarial Valuation. 2012: Investment return updated from 7.000% to 7.375%; withdrawal, salary increase and retirement rates updated. 2011: Payroll growth assumption eliminated for General Employees; General Employees who retire prior to age 60 but after attainment of 10 years of service (55 & 10) assumed to receive an actuarially reduced benefit payable immediately upon retirement. 2010: Investment return updated from 7.5% to 7.0%. 2009: Investment return updated from 8.0% to 7.5%; mortality, withdrawal, salary increase and retirement rates updated.

VI. Discount Rate (GASB No. 67 & No. 68)

A discount rate of 7.375% was used to measure the TPL. This discount rate was based on the expected rate of return on Plan investments of 7.375%. The projection of cash flows used to determine this discount rate assumed member contributions will be made at the current member contribution rate and employer contributions will be made at rates equal to the difference between actuarially determined current contribution rates and the member contribution rate. Based on these assumptions, the Plan's fiduciary net position was projected to be available to make all projected future expected benefit payments of current Plan members. Therefore, the long-term expected rate of return on Plan investments was applied to all periods of projected benefit payments to determine the TPL.

VII. Sensitivity of the NPL to the Discount Rate Assumption (GASB No. 67 & No. 68)

Measurement date: September 30, 2018

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.375%	7.375%	8.375%
NPL	\$ 2,803,198	\$ (2,735,713)	\$ (7,248,468)

Measurement date: September 30, 2019 *

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.375%	7.375%	8.375%
NPL	\$ 1,138,301	\$ (4,546,531)	\$ (9,185,223)

* Projected - actual amounts will be available after fiscal year end

Accounting Disclosure Exhibit

VIII. Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - Reporting Date (GASB No. 68)

Pension Expense for Fiscal Year Ending September 30, 2019 \$ (518,195)

Summary of Outstanding Deferred Inflows and Outflows of Resources as of September 30, 2019

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between actual and expected experience on liabilities	\$ 731,397	\$ 557,089
Changes of assumptions or other inputs	356,444	0
Net difference between projected and actual earnings on pension Plan investments	<u>0</u>	<u>1,953,346</u>
Total	<u>\$ 1,087,841</u>	<u>\$ 2,510,435</u>

Projected Deferred Outflows for City Contributions to Be Recognized in Pension Expense for Fiscal Year Ending September 30, 2020 \$ 667,149

Summary of Deferred Outflows and Inflows of Resources that will be Recognized in Pension Expense in Future Years.

<u>Year Ending 30-Sep</u>	<u>Amount</u>
2020	\$ (353,234)
2021	(715,085)
2022	(392,358)
2023	(12,946)
2024	51,029
Thereafter	0

Accounting Disclosure Exhibit

The following information is not required to be disclosed but is provided for informational purposes.

IX. Components of Pension Expense (GASB No. 68)

Measurement Date	<u>9/30/2014</u>	<u>9/30/2015</u>	<u>9/30/2016</u>	<u>9/30/2017</u>	<u>9/30/2018</u>	Projected <u>9/30/2019 *</u>
Service Cost	\$ 669,181	\$ 686,435	\$ 697,537	\$ 846,884	\$ 796,141	\$ 842,564
Interest on Total Pension Liability	2,299,340	2,381,731	2,460,415	2,630,646	2,834,288	2,884,660
Current-Period Benefit Changes	0	0	0	(20,122)	0	0
Contributions - Member	(593,396)	(562,835)	(490,452)	(910,127)	(536,473)	(497,965)
Projected Earnings on Plan Investments	(2,149,941)	(2,371,917)	(2,354,317)	(2,579,620)	(2,901,480)	(3,160,411)
Administrative Expenses	100,780	135,093	129,291	163,555	139,324	139,324
Other Changes in Plan Fiduciary Net Position	(6,784)	(4,454)	(2,835)	0	(260,999)	0
Recognition of Beginning Deferred Outflows / (Inflows) due to Liabilities	(106,853)	(198,173)	(322,074)	(238,127)	(68,035)	(273,227)
Recognition of Beginning Deferred Outflows / (Inflows) due to Assets	<u>(193,020)</u>	<u>278,602</u>	<u>88,265</u>	<u>(304,350)</u>	<u>(520,961)</u>	<u>(327,943)</u>
Total Pension Expense	<u>\$ 19,307</u>	<u>\$ 344,482</u>	<u>\$ 205,830</u>	<u>\$ (411,261)</u>	<u>\$ (518,195)</u>	<u>\$ (392,998)</u>

* Projected - actual amounts will be available after measurement date

Accounting Disclosure Exhibit

The following information is not required to be disclosed but is provided for informational purposes.

X. Recognition of Deferred Outflows and (Inflows) due to Liabilities - Measurement Date (GASB No. 68)

Recognition of Deferred Outflows due to Differences Between Actual and Expected Experience on Liabilities

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2013 / 2014	\$ 0	5.6	0.6	\$ 0	\$ 0
2014 / 2015	0	5.5	1.5	0	0
2015 / 2016	0	5.3	2.3	0	0
2016 / 2017	0	5.4	3.4	0	0
2017 / 2018	901,489	5.3	4.3	170,092	731,397
TOTAL				\$ 170,092	\$ 731,397

Recognition of Deferred (Inflows) due to Differences Between Actual and Expected Experience on Liabilities

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2013 / 2014	\$ (598,374)	5.6	0.6	\$ (106,853)	\$ (64,109)
2014 / 2015	(502,259)	5.5	1.5	(91,320)	(136,979)
2015 / 2016	(656,677)	5.3	2.3	(123,901)	(284,974)
2016 / 2017	(112,807)	5.4	3.4	(20,890)	(71,027)
2017 / 2018	0	5.3	4.3	0	0
TOTAL				\$ (342,964)	\$ (557,089)

Recognition of Deferred Outflows due to Changes of Assumptions or Other Inputs

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2013 / 2014	\$ 0	5.6	0.6	\$ 0	\$ 0
2014 / 2015	0	5.5	1.5	0	0
2015 / 2016	0	5.3	2.3	0	0
2016 / 2017	566,118	5.4	3.4	104,837	356,444
2017 / 2018	0	5.3	4.3	0	0
TOTAL				\$ 104,837	\$ 356,444

Accounting Disclosure Exhibit

The following information is not required to be disclosed but is provided for informational purposes.

X. Recognition of Deferred Outflows and (Inflows) due to Liabilities - Measurement Date (GASB No. 68) (cont'd)

Recognition of Deferred (Inflows) due to Changes of Assumptions or Other Inputs

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2013 / 2014	\$ 0	5.6	0.6	\$ 0	\$ 0
2014 / 2015	0	5.5	1.5	0	0
2015 / 2016	0	5.3	2.3	0	0
2016 / 2017	0	5.4	3.4	0	0
2017 / 2018	0	5.3	4.3	0	0
TOTAL				\$ 0	\$ 0

XI. Recognition of Deferred Outflows and (Inflows) due to Assets - Measurement Date (GASB No. 68)

Recognition of Deferred Outflows / (Inflows) due to Difference Between Projected and Actual Earnings on Pension Plan Investments

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2013 / 2014	\$ (965,099)	5	0	\$ (193,019)	\$ 0
2014 / 2015	2,358,109	5	1	471,622	471,621
2015 / 2016	(951,685)	5	2	(190,337)	(380,674)
2016 / 2017	(1,963,073)	5	3	(392,615)	(1,177,843)
2017 / 2018	(1,083,062)	5	4	(216,612)	(866,450)
TOTAL				\$ (520,961)	\$ (1,953,346)

Outline of Principal Provisions of the Retirement Plan

A. Effective Date:

October 1, 1965. Most recently amended by Ordinance 1-17-2271 adopted January 17, 2017.

B. Eligibility Requirements:

1. General Employees

Tier 1:

Regular full-time employee hired before October 1, 2011 is eligible to enter the Plan following the completion of six months of Credited Service and attainment of age 20.

Tier 2:

Regular full-time employee hired on or after October 1, 2011 and not participating in the Plan as of October 1, 2016 who elects to join or fails to make any election within ninety (90) days from effective date of Ordinance is eligible to enter the Plan as a Tier 2 employee as of the effective date of Ordinance.

Regular full-time employee hired on or after October 1, 2016 who elects to join or fails to make any election within ninety (90) days from date of hire is eligible to enter the Plan as a Tier 2 employee as of their date of hire.

2. Police Officers

Regular full-time Police Officer is eligible to enter the Plan as of date of employment.

3. Administration Management Service Class (AMSC)

Employees of the City with the following positions who do not elect to participate in a defined contribution Plan of the City:

- City Manager
- City Attorney
- City Clerk
- Assistant / Deputy City Manager
- Finance Director / Chief Financial Officer
- Chief of Police
- Planning and Zoning Director
- Building Director
- Director of Public Works
- Chief Administrative Officer (currently Finance Office Manager)
- Chief Procurement Officer (currently Purchasing Manager)
- Parks and Recreation Director

Outline of Principal Provisions of the Retirement Plan

C. Credited Service:

1. General Employees and AMSC

Continuous employment. Credited service shall exclude continuous employment prior to Plan participation as follows: (1) If employed prior to October 1, 1973, credited service shall exclude the first two years of continuous employment and any additional year of continuous employment prior to attainment of age 25. (2) If employed on or after October 1, 1973, credited service shall exclude the first six (6) months of continuous employment and continuous employment prior to age 20.

Credited service for Tier 2 employees and AMSC will be continuous employment from the date of hire for all purposes except for benefit accruals which will be from the later of October 1, 2016 or date of hire.

2. Police Officers

Continuous employment. For Police Officers who did not participate when first eligible for the Plan, Credited Service shall exclude continuous employment prior to Plan participation as follows: (1) If employed prior to October 1, 1973, Credited Service shall exclude the first two years of continuous employment and any additional year of continuous employment prior to attainment of age 25. (2) If employed on or after October 1, 1973, Credited Service shall exclude the first six (6) months of continuous employment and continuous employment prior to age 20.

D. Final Monthly Compensation (FMC):

Final Average Compensation is 1/36th of the final 36 consecutive months of compensation. For Police Officers, not less than 1/5th of the highest five (5) years out of the last (10) ten years of compensation. Compensation shall mean regular wages and salaries, excluding bonuses, vacation, sick leave and other additional compensation.

Effective October 1, 2011, Final Average Compensation for General Employees is 1/60th of the final 60 consecutive months of basic compensation, provided it is not less than the Final Average Compensation as of September 30, 2011 based on the definition above. Basic compensation shall mean base wages and salaries, excluding commissions, overtime pay, bonuses and any other forms of additional compensation earned outside of base wages.

Effective October 1, 2011, Final Average Compensation for members covered under the Police Officers and Sergeants collective bargaining agreement is the best five (5) years of basic compensation, provided it is not less than the Final Average Compensation as of September 30, 2011 based on the definition above. Basic compensation shall mean base wages and salaries, including up to 300 hours of overtime in a fiscal year and excluding payments for accrued unused sick or annual leave, extra duty or special detail work, shift differential, assignment pay, bonuses and any other forms of additional compensation earned outside of base wages.

Outline of Principal Provisions of the Retirement Plan

D. Final Monthly Compensation (FMC) (cont'd):

Effective October 1, 2016, Final Average Compensation for members covered under the Miami-Dade County Police Benevolent Association Upper-Collective Bargaining Union (Lieutenants & Captains) collective bargaining agreement is the best five (5) years of basic compensation, provided it is not less than the Final Average Compensation as of September 30, 2016 based on the definition above. Basic compensation shall mean base wages and salaries, including up to 300 hours of overtime in a fiscal year and excluding payments for accrued unused sick or annual leave, extra duty or special detail work, shift differential, assignment pay, bonuses and any other forms of additional compensation earned outside of base wages.

Final Average Compensation for Tier 2 General Employees and AMSC shall be the average of the highest eight (8) years of credit service.

E. Normal Retirement:

1. Eligibility:

a. General Employees: Attainment of age 55 and completion of ten (10) years of Credited Service for benefits accrued as of September 30, 2011.

Attainment of age 60 and completion of ten (10) years of Credited Service for benefits accrued after September 30, 2011, including increases in the accrued benefit as of September 30, 2011 due to increases in the Final Average Compensation.

Attainment of age 65 and completion of ten (10) years of Credited Service or completion of thirty-three (33) years of Credited Service regardless of age for Tier 2 General Employees.

b. Police Officers: Attainment of age 60 and completion of ten (10) years of Credited Service or completion of twenty-five (25) years of Credited Service regardless of age.

c. AMSC: Attainment of age 65 and completion of three (3) years of Credited Service or completion of thirty-three (33) years of Credited Service regardless of age.

2. Benefit:

The monthly Plan benefit is the product of:

- a. FMC,
- b. Credited Service during the appropriate period and
- c. The appropriate benefit percentage

The appropriate benefit percentages are:

a. General Employees	For Credited Service	Percentage
	Through September 30, 1999	2.50%
	October 1, 1999 through September 30, 2011	2.75%
	October 1, 2011 and thereafter	2.25%

Outline of Principal Provisions of the Retirement Plan

E. Normal Retirement (cont'd):

2. Benefit:

<u>b. Police Officers</u>	<u>For Credited Service</u>	<u>Percentage</u>
	Through September 30, 1995	2.00%
	October 1, 1995 through September 30, 1996	2.25%
	October 1, 1996 through September 30, 1997	2.50%
	October 1, 1997 through September 30, 2001	2.75%
	October 1, 2001 through September 30, 2002	2.80%
	October 1, 2002 through September 30, 2003	2.90%
	October 1, 2003 and thereafter	3.00%
<u>c. General Employees (Tier 2)</u>	<u>For Credited Service</u>	<u>Percentage</u>
	October 1, 2016 and thereafter	1.60%
<u>d. AMSC</u>	<u>For Credited Service</u>	<u>Percentage</u>
	October 1, 2016 and thereafter	3.00%

F. Supplemental Benefit:

A cost-of-living supplemental benefit based upon the consumer price index is provided upon retirement. The annual increase is limited to 3%.

For General Employees the cost-of-living supplemental benefit is only provided on the accrued benefit as of September 30, 2011 and does not apply to increases in this accrued benefit due to increases in the Final Average Compensation.

No cost-of-living supplemental benefit is provided for Tier 2 General Employees.

No cost-of-living supplemental benefit is provided for AMSC for benefit accruals on or after October 1, 2011.

G. Early Retirement:

1. Eligibility:

- a. Police Officers: Attainment of age 50 and completion of 15 years of Credited Service.
- b. AMSC: Attainment of age 55 and completion of 10 years of Credited Service.

2. Benefit:

- a. Police Officers: Accrued benefit based upon FMC and Credited Service as of Early Retirement Date, reduced 3% for each year that the benefit commencement date precedes Normal Retirement.

Outline of Principal Provisions of the Retirement Plan

G. Early Retirement (cont'd):

2. Benefit:

- b. AMSC: Accrued benefit based upon FMC and Credited Service as of Early Retirement Date, reduced 1/15 for each of the first five years and 1/30 for the next five years that the benefit commencement date precedes Normal Retirement.

H. Delayed Retirement:

1. Eligibility: Retirement subsequent to Normal Retirement Date.
2. Benefit: Accrued benefit based upon FMC and Credited Service as of Delayed Retirement Date.

I. Disability Retirement:

1. Eligibility: Totally and permanently disabled for a six month period while actively employed.
2. Benefit: Accrued benefit based upon FMC and Credited Service as of date of disability, actuarially reduced as for Early Retirement for early commencement.

J. Pre-Retirement Death Benefit:

The beneficiary shall receive the member's accumulated Employee Contributions.

K. Benefit Upon Termination of Service:

1. Benefit payable at Normal Retirement equal to the greater of:
- a. Accrued benefit based upon FMC and Credited Service as of date of termination times the vesting percentage shown below, or
- b. Benefit which can be supported by the accumulated Member Contributions with interest to Normal Retirement Date.

No supplemental benefit shall be payable to vested terminees.

Outline of Principal Provisions of the Retirement Plan

K. Benefit Upon Termination of Service (cont'd):

2. Vesting Schedule:

All employees except AMSC:

<u>Years of Credited Service</u>	<u>Vesting Percentage</u>
Less than 10	0%
10 or more years	100%

AMSC:

<u>Years of Credited Service</u>	<u>Vesting Percentage</u>
Less than 3	0%
3 or more years	100%

3. Refund Option:

A terminated member may elect to receive a refund of Accumulated Contributions without interest in lieu of receiving any other Plan benefits.

L. Member Contributions:

Members contribute 7.0% (3.0% for Tier 2 General Employees and 7.5% for Police Officers) of member's basic annual compensation.

Should the City contribution for General Employees be actuarially determined to exceed 7.0%, not including expenses, both the City and the General Employees (other than Tier 2 General Employees and AMSC) will share equally in the amount in excess of 7.0%. General Employees (other than Tier 2 General Employees and AMSC) Contributions are capped at 10% of basic annual compensation as of October 1, 2016.

Should the City contribution for Police Officers be actuarially determined to exceed 7.5%, not including expenses, both the City and the Police Officers will share equally in the amount in excess of 7.5% but not more than 12.0% for Police Lieutenants and Police Captains.

M. Normal Form of Retirement Income:

The normal form of payment shall be a life annuity with a guarantee of a refund of accumulated Employee Contributions.

N. Changes Since Previous Actuarial Valuation:

None.

Actuarial Assumptions and Methods
Used in the Valuation

A. MortalityGeneral Employees including AMSC Mortality Assumptions:

For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For disabled male participants, RP 2000 Disabled Male Mortality Table, setback four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

Sample Ages (2018)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	30.53	33.57	30.10
60	25.60	28.54	25.44	28.44
62	23.70	26.58	23.60	26.52

Sample Ages (2038)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.67	35.41	32.26
60	27.78	30.38	27.63	30.30
62	25.87	28.40	25.78	28.35

Actuarial Assumptions and Methods
Used in the Valuation

A. Mortality (cont'd)

Police Officer Mortality Assumptions:

For healthy participants during employment, RP-2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For healthy participants post employment, RP-2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table, with White Collar Adjustment and no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment, without projected mortality improvements.

Sample Ages (2018)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	29.84	32.60	29.33
60	24.96	27.56	24.76	27.41
62	23.09	25.59	22.97	25.49

Sample Ages (2038)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.06	34.54	31.57
60	27.21	29.49	27.03	29.36
62	25.34	27.51	25.23	27.42

Actuarial Assumptions and Methods
Used in the Valuation

B. Investment Return to be Earned by Fund

7.375% (net of investment expenses), compounded annually - includes inflation at 2.75%.

C. Allowances for Expenses or Contingencies

Actual expenses paid in previous year.

D. Employee Withdrawal Rates

Withdrawal rates for males and for females were used in accordance with the following illustrative example based upon number of years of service:

<u>Service</u>	<u>Withdrawal Rates</u>	
	<u>Per 100 Employees</u>	
	<u>Police</u>	<u>General / AMSC</u>
1 - 2	12.00	20.00
3 - 6	8.00	9.25
7 - 10	8.00	5.00
11 & Over	3.50	5.00

E. Disability Rates

1985 Disability Study, Class 1 with separate rates for females.

F. Marital Assumptions

100% of active members are assumed to be married. Where applicable, females are assumed to be three years younger than their male spouses.

G. Salary Increase Factors

Current salary is assumed to increase in accordance with the following table based upon number of years of service - includes wage inflation of 3.25%.

<u>Service</u>	<u>Police</u>	<u>General / AMSC</u>
0 - 9	5.25%	5.25%
10 - 14	3.75%	4.75%
15 - 19	3.75%	4.25%
20 & over	3.75%	3.75%

Actuarial Assumptions and Methods
Used in the Valuation

H. Increase in Covered Payroll

4.0% per year, limited to average annual increase over most recent ten years (1.4%) but not less than 0.0% for Police Officers. No increase in covered payroll is assumed for General Employees including AMSC.

I. Retirement Rates

Rates of Early Retirement for Police Officers were used in accordance with the following table.

Years Preceding	
<u>Normal Retirement</u>	<u>Police</u>
1 - 6	5%
7 - 10	10%

Rates of Normal Retirement were used in accordance with the following tables.

<u>Age</u>	<u>Police</u>	<u>General & AMSC *</u>
55 - 59	N/A	10%
60 - 61	25%	10%
62 - 64	40%	25%
65 - 66	100%	25%
67 & above	100%	100%

<u>Service</u>	<u>Police</u>
25 years	100%

* Includes Early Retirement for AMSC Employees. Rates are 25% for Tier 2 and AMSC members for each year upon meeting 33 years of service until 100% at age 67.

General Employees who retire prior to age sixty (60) but after attainment of ten (10) years of Credited Service (55 & 10) are assumed to receive an actuarially reduced benefit payable immediately upon retirement.

J. Cost of Living Increases

Future cost of living increases for General Employees (other than Tier 2 General Employees) and Police Officers are assumed to be 3.0% per annum.

K. Valuation of Assets

The method used for determining the smoothed value of assets phases in the deviation between the expected and actual return on assets at the rate of 20% per year. The smoothed value of assets will be further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the fair market value of Plan assets and whose upper limit is 120% of the fair market value of Plan assets.

Actuarial Assumptions and Methods
Used in the Valuation

L. Cost Methods

Normal Retirement, Termination, Disability and Pre-Retirement Death Benefit:
Entry-Age-Actuarial Cost Method

Under this method the normal cost for each active employee is the amount which is calculated to be a level percentage of pay that would be required annually from his date of hire to his retirement age to fund his estimated benefits, assuming the Plan had always been in effect. The normal cost for the Plan is the sum of the individual normal costs for all active employees. The actuarial accrued liability as of any valuation date for each active employee or inactive employee who is eligible to receive benefits under the Plan is the excess of the actuarial present value of estimated future benefits over the actuarial present value of current and future normal costs. The unfunded actuarial accrued liability as of any valuation date is the excess of the actuarial accrued liability over the smoothed value of assets of the Plan.

M. Changes Since Previous Actuarial Valuation

None.

Distribution by Attained Age Groups
and Service Groups as of October 1, 2018

General Employees (including AMSC)

Attained Age Group	-----COMPLETED YEARS OF SERVICE-----							Total
	<u>0 - 4</u>	<u>5 - 9</u>	<u>10 - 14</u>	<u>15 - 19</u>	<u>20 - 24</u>	<u>25 - 29</u>	<u>30 & Over</u>	
Under 25	2	-	-	-	-	-	-	2
25 - 29	1	1	1	-	-	-	-	3
30 - 34	2	3	-	-	-	-	-	5
35 - 39	3	-	1	1	-	-	-	5
40 - 44	3	1	1	2	-	-	-	7
45 - 49	8	1	-	1	1	-	-	11
50 - 54	4	2	-	3	2	-	-	11
55 - 59	1	2	-	2	1	1	-	7
60 - 64	-	-	1	1	1	-	-	3
65 & Over	1	1	-	1	-	-	-	3
TOTAL	25	11	4	11	5	1	0	57

	<u>October 1, 2017</u>	<u>October 1, 2018</u>
Average Attained Age	47.98 years	47.59 years
Average Hire Age	36.55 years	35.86 years
Average Pay	\$ 57,481	\$ 59,649
Percent Female	35.1%	33.3%

Distribution by Attained Age Groups
and Service Groups as of October 1, 2018

Police Officers

<u>Attained Age Group</u>	-----COMPLETED YEARS OF SERVICE-----							<u>Total</u>
	<u>0 - 4</u>	<u>5 - 9</u>	<u>10 - 14</u>	<u>15 - 19</u>	<u>20 - 24</u>	<u>25 - 29</u>	<u>30 & Over</u>	
Under 25	2	-	-	-	-	-	-	2
25 - 29	11	-	-	-	-	-	-	11
30 - 34	2	5	-	-	-	-	-	7
35 - 39	1	1	6	-	-	-	-	8
40 - 44	-	-	-	-	-	-	-	0
45 - 49	-	-	-	2	2	1	-	5
50 - 54	2	-	3	1	1	-	-	7
55 - 59	3	1	1	1	1	-	-	7
60 - 64	-	-	1	-	-	-	-	1
65 & Over	1	1	-	-	-	-	-	2
TOTAL	22	8	11	4	4	1	0	50

	<u>October 1, 2017</u>	<u>October 1, 2018</u>
Average Attained Age	39.65 years	41.43 years
Average Hire Age	29.11 years	32.08 years
Average Pay	\$ 67,519	\$ 65,504
Percent Female	15.9%	16.0%

Statistics for Participants Entitled to Deferred Benefits
and Participants Receiving Benefits

A. Entitled to Deferred Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 40	1	\$ 9,532	\$ 9,532
40 - 44	-	-	-
45 - 49	4	110,277	27,569
50 - 54	3	60,509	20,170
55 - 59	2	25,103	12,552
60 - 64	-	-	-
65 & Over	-	-	-
TOTAL	<u>10 *</u>	<u>\$ 205,421</u>	<u>\$ 20,542</u>

B. Receiving Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	-	\$ -	\$ -
50 - 54	3	115,313	38,438
55 - 59	7	275,158	39,308
60 - 64	6	252,075	42,013
65 - 69	11	256,916	23,356
70 - 74	11	375,641	34,149
75 - 79	6	183,481	30,580
80 - 84	2	23,640	11,820
85 - 89	1	38,567	38,567
90 & Over	1	9,876	9,876
TOTAL	<u>48</u>	<u>\$ 1,530,667</u>	<u>\$ 31,889</u>

* Includes 1 member who is both currently receiving benefits and is due deferred benefits

Reconciliation of Employee DataGeneral Employees (including AMSC)

A. <u>Active Participants</u>	
1. Active participants previous year	57
2. Retired during period	(2)
3. Died during period	0
4. Disabled during period	0
5. Terminated during period	(1)
6. New active participants	3
7. Re-instated during period	0
8. Transfer to Police	0
9. Transfer to 401(k) Plan	0
10. Adjustments	0
11. Active participants current year	<u>57</u>
B. <u>Participants Receiving Benefits</u>	
1. Participants receiving benefits previous year	28
2. New retired participants	2
3. New terminated vested receiving benefits	0
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	0
6. Died or ceased payment during period	(3)
7. Adjustments	0
8. Retired or terminated vested receiving benefits current year	<u>27</u>
C. <u>Terminated Vested Participants Entitled to Future Benefits</u>	
1. Terminated vested entitled previous year	3
2. Died during period	0
3. Commenced receiving benefits during period	0
4. New terminated vested	1
5. Terminated vested paid lump sum	0
6. Terminated vested entitled current year	<u>4*</u>

* Plus 1 member who is both currently receiving benefits and is due deferred benefits

Reconciliation of Employee Data

Police Officers

A. <u>Active Participants</u>	
1. Active participants previous year	44
2. Retired during period	(1)
3. Died during period	0
4. Disabled during period	0
5. Terminated during period	(3)
6. New active participants	10
7. Re-instated during period	0
8. Transfer from General	0
9. Active participants current year	<u>50</u>
B. <u>Participants Receiving Benefits</u>	
1. Participants receiving benefits previous year	20
2. New retired participants	1
3. New terminated vested receiving benefits	0
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	0
6. Died or ceased payment during period	0
7. Adjustments	0
8. Retired or terminated vested receiving benefits current year	<u>21</u>
C. <u>Terminated Vested Participants Entitled to Future Benefits</u>	
1. Terminated vested entitled previous year	5
2. Died during period	0
3. Commenced receiving benefits during period	0
4. New terminated vested	0
5. Terminated vested paid lump sum	0
6. Terminated vested entitled current year	<u>5</u>

Projected Retirement Benefits

<u>Fiscal Year</u>	<u>Projected Total Annual Payout</u>
2019	\$ 1,796,269
2020	\$ 1,963,038
2021	\$ 2,072,791
2022	\$ 2,248,676
2023	\$ 2,391,413
2024	\$ 2,585,773
2025	\$ 2,704,748
2026	\$ 2,903,069
2027	\$ 3,024,503
2028	\$ 3,129,302

The above projected payout of Plan benefits during the next ten years is based on assumptions involving all decrements. The actual payouts may differ from the above estimates depending upon the death, salary and retirement experience of the Plan. However, since the projected payment is recomputed each valuation date, there is an automatic correction to the extent that actual experience varies from expected experience.

Recent Compensation, Termination and Investment Return Experience

Valuation Date	Compensation				Termination		Investment Return ¹		
	% Increase / (Decrease)				Ratio of Actual		Smoothed Value	Market Value	Assumed Rate of Return
	General (incl. AMSC)		Police		General (incl. AMSC)	Police			
Actual	Assumed	Actual	Assumed	to Expected					
10/01/2018	4.3%	4.6%	(1.0%)	4.4%	0.3	1.1	9.004%	10.128%	7.375%
10/01/2017	4.5%	4.6%	1.6%	4.5%	1.5	1.5	9.544%	12.987%	7.375%
10/01/2016	8.0%	4.7%	2.4%	4.4%	1.5	1.0	9.826%	10.368%	7.375%
10/01/2015	2.3%	4.8%	2.0%	4.5%	1.2	1.0	8.195%	0.042%	7.375%
10/01/2014	0.9%	4.8%	9.9%	4.6%	0.5	0.7	10.249%	10.590%	7.375%
10/01/2013	3.0%	4.8%	(0.6%)	4.7%	0.4	1.6	8.682%	16.219%	7.375%
10/01/2012	(0.2%)	6.3%	(3.3%)	5.3%	3.0	0.3	2.1%	17.6%	7.0%
10/01/2011	0.3%	6.7%	0.5%	5.3%	1.3	1.2	1.3%	(5.3%)	7.0%
10/01/2010	1.5%	6.6%	(2.8%)	5.2%	1.4	0.3	3.2%	9.7%	7.5%
10/01/2009	7.3%	5.8%	3.0%	5.2%	0.4	0.8	3.1%	4.5%	8.0%
Last 3 Years	5.6%	4.6%	1.0%	4.4%	0.9	1.2	9.457%	11.153%	7.375%
Last 5 Years	4.0%	4.7%	2.9%	4.5%	0.8	1.0	9.361%	8.726%	7.375%
Last 10 Years	3.2%	5.4%	1.1%	4.8%	0.9	0.8	6.5%	8.5%	7.4%

¹ Computed as $2I/(A+B-I)$, where A is beginning value, B is ending value and I is investment return.

Table XV
(Cont'd)

Summary of Transaction Information

Valuation Date	Benefits Paid	Expenses	Contributions	Investment Return	Transfers	Market Value
10/01/2018	\$ 1,563,305	\$ 295,923	\$ 1,227,105	\$ 4,141,141	\$ 0	\$ 43,219,378
10/01/2017	1,570,751	289,032	1,591,840	4,668,170	0	39,449,361
10/01/2016	1,293,782	226,969	1,060,606	3,406,515	0	35,049,134
10/01/2015	1,417,586	226,363	1,381,911	112,474	0	32,087,589
10/01/2014	1,315,113	181,451	1,455,588	3,165,221	0	32,244,727
10/01/2013	1,351,678	264,362	1,505,547	4,066,152	0	29,092,870
10/01/2012	1,579,698	273,772	1,798,773	3,725,813	0	25,113,160
10/01/2011	1,125,796	189,999	2,141,352	(1,186,307)	0	21,407,509
10/01/2010	888,202	235,003	2,104,969	1,875,107	0	21,768,259
10/01/2009	764,708	206,941	1,652,824	804,982	0	18,911,388
10/01/2008	762,030	184,756	1,595,179	(2,633,551)	0	17,425,231
10/01/2007	681,660	84,321	1,511,306	2,291,062	0	19,410,389
10/01/2006	505,945	146,005	1,161,211	940,523	0	16,374,002
10/01/2005	574,338	136,535	1,409,957	1,302,776	0	14,924,218
10/01/2004	527,266	137,028	1,262,722	751,494	65,275	12,922,358
10/01/2003	356,561	115,729	1,216,406	1,344,365	0	11,436,952
10/01/2002	309,307	114,307	1,103,263	(1,059,445)	0	9,348,471
10/01/2001	333,639	88,128	675,983	(534,923)	0	9,728,267
10/01/2000	232,192	80,274	499,210	963,114	0	10,008,974
10/01/1999	254,771	75,413	369,032	997,855	0	9,304,813
10/01/1998	271,956	83,115	279,699	815,050	61,811	8,268,110
10/01/1997	233,331	56,437	219,754	1,552,534	0	7,590,243
10/01/1996	224,942	56,774	215,634	829,680	0	6,107,723
10/01/1995	160,057	48,995	164,183	975,873	0	5,344,125
10/01/1994	136,098	44,335	144,729	113,415	0	4,413,121

Employer Contribution Information

<u>Valuation Date</u>	<u>Contribution Fiscal Year End</u>	<u>Minimum Required Employer Contributions</u>	<u>Actual City Contributions</u>	<u>Actual State Contributions</u>	<u>Actual Employer Contributions</u>
10/01/2018	09/30/2020	\$ 635,775	N/A	N/A	N/A
10/01/2017	09/30/2019	\$ 704,929	N/A	N/A	N/A
10/01/2016	09/30/2018	\$ 690,632	\$ 652,852	\$ 37,780	\$ 690,632
10/01/2015	09/30/2017	\$ 680,568	\$ 643,933	\$ 37,780	\$ 681,713
10/01/2014	09/30/2016	\$ 570,154	\$ 532,374	\$ 37,780	\$ 570,154
10/01/2013	09/30/2015	\$ 834,251	\$ 796,471	\$ 37,780	\$ 834,251
10/01/2012	09/30/2014	\$ 878,218	\$ 840,438	\$ 37,780	\$ 878,218
10/01/2011	09/30/2013	\$ 860,190	\$ 822,410	\$ 37,780	\$ 860,190
10/01/2010	09/30/2012	\$ 1,021,975	\$ 984,195	\$ 37,780	\$ 1,021,975
10/01/2010	09/30/2011	\$ 1,266,587	\$ 1,235,540	\$ 37,780	\$ 1,273,320
10/01/2009	09/30/2010	\$ 1,257,246	\$ 1,257,246	\$ 0	\$ 1,257,246
10/01/2008	09/30/2009	\$ 843,731	\$ 843,731	\$ 0	\$ 843,731
10/01/2007	09/30/2008	\$ 769,186	\$ 769,186	\$ 0	\$ 769,186
10/01/2006	09/30/2007	\$ 794,068	\$ 756,288	\$ 37,780	\$ 794,068
10/01/2005	09/30/2006	\$ 632,035	\$ 632,397	\$ 0	\$ 632,397
10/01/2004	09/30/2005	\$ 917,230	\$ 879,812	\$ 37,418	\$ 917,230
10/01/2003	09/30/2004	\$ 757,439	\$ 744,941	\$ 12,498	\$ 757,439
10/01/2002	09/30/2003	\$ 752,389	\$ 739,891	\$ 13,378	\$ 753,269
10/01/2001	09/30/2002	\$ 621,909	\$ 620,377	\$ 12,498	\$ 632,875

Actuarial Valuation as of October 1, 2018State Required Exhibit(General Employees Tier 1)

	<u>10/01/2017</u>	<u>10/01/2018</u>
A. <u>Participant Data</u>		
1. Active participants	25	22
2. Retired participants and beneficiaries receiving benefits	27	25
3. Disabled participants receiving benefits	0	0
4. Terminated vested participants	3	4
5. Annual payroll of active participants	\$ 1,288,496	\$ 1,197,748
6. Expected payroll of active employees for the following year	\$ 1,288,496	\$ 1,197,748
7. Annual benefits payable to those currently receiving benefits	\$ 668,590	\$ 600,408
B. <u>Assets</u>		
1. Market Value of Assets	\$ 15,099,831	\$ 16,078,824
2. Smoothed Value of Assets	\$ 14,549,411	\$ 15,312,080
C. <u>Liabilities</u>		
1. Actuarial present value of future expected benefit payments for active members		
a. Retirement benefits	\$ 4,331,935	\$ 4,488,908
b. Vesting benefits	560,975	431,082
c. Death benefits	34,670	33,452
d. Disability benefits	270,779	262,699
e. Refunds	15,925	10,400
f. Total	\$ 5,214,284	\$ 5,226,541
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 610,140	\$ 673,794
3. Actuarial present value of future expected benefit payments for members currently receiving benefits		
a. Service retired	\$ 7,848,463	\$ 7,106,729
b. Disability retired	0	0
c. Beneficiaries	176,662	176,438
d. Miscellaneous	108,713	83,178
e. Total	\$ 8,133,838	\$ 7,366,345

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(General Employees Tier 1)

	<u>10/01/2017</u>	<u>10/01/2018</u>
4. Total actuarial present value of future expected benefit payments	\$ 13,958,262	\$ 13,266,680
5. Actuarial accrued liabilities	\$ 13,198,024	\$ 12,587,522
6. Unfunded actuarial accrued liabilities	\$ (1,351,387)	\$ (2,724,558)
 D. <u>Statement of Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated vested benefits		
a. Participants currently receiving benefits	\$ 8,025,125	\$ 7,283,167
b. Other participants	3,880,537	4,114,127
c. Total	\$ 11,905,662	\$ 11,397,294
2. Actuarial present value of accumulated non-vested Plan benefits	293,304	242,158
3. Total actuarial present value of accumulated Plan benefits	\$ 12,198,966	\$ 11,639,452
 E. <u>Statement of Change in Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated Plan benefits as of October 1, 2017		\$ 12,198,966
2. Increase (decrease) during period attributable to:		
a. Change in actuarial assumptions and / or Plan amendments		\$ 0
b. Benefits paid		(647,653)
c. Other, including benefits accumulated and increase for interest due to decrease in the discount period		88,139
d. Net increase		\$ (559,514)
3. Actuarial present value of accumulated Plan benefits as of October 1, 2018		\$ 11,639,452

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(General Employees Tier 1)

	<u>10/01/2017</u>	<u>10/01/2018</u>
F. Pension Cost		
1. Total normal cost (including administrative expenses)	\$ 188,814	\$ 172,241
2. Payment required to amortize unfunded liability	(128,421)	(246,945)
3. Interest adjustment	2,148	(2,657)
4. Total preliminary required contribution	\$ 62,541	\$ (77,361)
5. Total required contribution	\$ 188,814	\$ 172,241
6. Item 5 as a percentage of payroll	14.7%	14.4%
7. Estimated member contributions	\$ 90,195	\$ 83,842
8. Item 7 as a percentage of payroll	7.0% ¹	7.0% ²
9. Estimated State contributions	\$ 0	\$ 0
10. Item 9 as a percentage of payroll	0.0%	0.0%
11. Net amount payable by City	\$ 98,619	\$ 88,399
12. Item 11 as a percentage of payroll	7.7% ¹	7.4% ²
G. Past Contributions		
1. Total contribution required (prior year's valuation)	\$ 176,416	\$ 188,814
2. Actual contributions made:		
a. Members	\$ 90,352	N/A
b. State	N/A	N/A
c. City	86,064	N/A
d. Total	\$ 176,416	N/A
H. Net Actuarial Gain / (Loss)	\$ 264,316	\$ 1,290,160
I. Disclosure of Following Items:		
1. Actuarial present value of future salaries - attained age	\$ 9,140,160	\$ 7,930,096
2. Actuarial present value of future employee contributions - attained age	\$ 639,811	\$ 555,107
3. Actuarial present value of future contributions from other sources	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 1,403,491	\$ 1,338,844
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A

¹ Percent of expected 2018-2019 covered payroll (\$1,288,496)

² Percent of expected 2019-2020 covered payroll (\$1,197,748)

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(General Employees Tier 2)

	<u>10/01/2017</u>	<u>10/01/2018</u>
A. <u>Participant Data</u>		
1. Active participants	24	27
2. Retired participants and beneficiaries receiving benefits	0	0
3. Disabled participants receiving benefits	0	0
4. Terminated vested participants	0	0
5. Annual payroll of active participants	\$ 1,003,128	\$ 1,197,564
6. Expected payroll of active employees for the following year	\$ 1,003,128	\$ 1,197,564
7. Annual benefits payable to those currently receiving benefits	\$ 0	\$ 0
B. <u>Assets</u>		
1. Market Value of Assets	\$ 169,399	\$ 254,856
2. Smoothed Value of Assets	\$ 166,660	\$ 249,600
C. <u>Liabilities</u>		
1. Actuarial present value of future expected benefit payments for active members		
a. Retirement benefits	\$ 500,739	\$ 625,233
b. Vesting benefits	193,027	244,558
c. Death benefits	7,281	8,715
d. Disability benefits	45,208	56,674
e. Refunds	22,889	29,101
f. Total	<u>\$ 769,144</u>	<u>\$ 964,281</u>
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 0	\$ 0
3. Actuarial present value of future expected benefit payments for members currently receiving benefits		
a. Service retired	\$ 0	\$ 0
b. Disability retired	0	0
c. Beneficiaries	0	0
d. Miscellaneous	1,256	1,256
e. Total	<u>\$ 1,256</u>	<u>\$ 1,256</u>

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(General Employees Tier 2)

	<u>10/01/2017</u>	<u>10/01/2018</u>
4. Total actuarial present value of future expected benefit payments	\$ 770,400	\$ 965,537
5. Actuarial accrued liabilities	\$ 215,700	\$ 330,454
6. Unfunded actuarial accrued liabilities	\$ 49,040	\$ 80,854
D. <u>Statement of Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated vested benefits		
a. Participants currently receiving benefits	\$ 0	\$ 0
b. Other participants	81,587	122,608
c. Total	<u>\$ 81,587</u>	<u>\$ 122,608</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>21,396</u>	<u>36,624</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 102,983	\$ 159,232
E. <u>Statement of Change in Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated Plan benefits as of October 1, 2017		\$ 102,983
2. Increase (decrease) during period attributable to:		
a. Change in actuarial assumptions and / or Plan amendments		\$ 0
b. Benefits paid		0
c. Other, including benefits accumulated and increase for interest due to decrease in the discount period		<u>56,249</u>
d. Net increase		\$ 56,249
3. Actuarial present value of accumulated Plan benefits as of October 1, 2018		\$ 159,232

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(General Employees Tier 2)

	<u>10/01/2017</u>	<u>10/01/2018</u>
F. <u>Pension Cost</u>		
1. Total normal cost (including administrative expenses)	\$ 66,713	\$ 76,281
2. Payment required to amortize unfunded liability	4,114	6,844
3. Interest adjustment	2,518	2,956
4. Total preliminary required contribution	\$ 73,345	\$ 86,081
5. Total required contribution	\$ 73,345	\$ 86,081
6. Item 5 as a percentage of payroll	7.3%	7.2%
7. Estimated member contributions	\$ 30,094	\$ 35,927
8. Item 7 as a percentage of payroll	3.0% ¹	3.0% ²
9. Estimated State contributions	\$ 0	\$ 0
10. Item 9 as a percentage of payroll	0.0%	0.0%
11. Net amount payable by City	\$ 43,251	\$ 50,154
12. Item 11 as a percentage of payroll	4.3% ¹	4.2% ²
G. <u>Past Contributions</u>		
1. Total contribution required (prior year's valuation)	\$ 65,723	\$ 73,345
2. Actual contributions made:		
a. Members	\$ 35,964	N/A
b. State	N/A	N/A
c. City	29,759	N/A
d. Total	\$ 65,723	N/A
H. <u>Net Actuarial Gain / (Loss)</u>	N/A	\$ (19,733)
I. <u>Disclosure of Following Items:</u>		
1. Actuarial present value of future salaries - attained age	\$ 8,951,163	\$ 10,748,040
2. Actuarial present value of future employee contributions - attained age	\$ 268,535	\$ 322,441
3. Actuarial present value of future contributions from other sources	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 103,881	\$ 140,229
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A

¹ Percent of expected 2018-2019 covered payroll (\$1,003,128)

² Percent of expected 2019-2020 covered payroll (\$1,197,564)

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(AMSC)

	<u>10/01/2017</u>	<u>10/01/2018</u>
A. <u>Participant Data</u>		
1. Active participants	8	8
2. Retired participants and beneficiaries receiving benefits	1	2
3. Disabled participants receiving benefits	0	0
4. Terminated vested participants	0	0
5. Annual payroll of active participants	\$ 984,777	\$ 1,004,692
6. Expected payroll of active employees for the following year	\$ 984,777	\$ 1,004,692
7. Annual benefits payable to those currently receiving benefits	\$ 1,398	\$ 44,009
B. <u>Assets</u>		
1. Market Value of Assets	\$ 1,079,990	\$ 1,326,846
2. Smoothed Value of Assets	\$ 1,052,987	\$ 1,284,535
C. <u>Liabilities</u>		
1. Actuarial present value of future expected benefit payments for active members		
a. Retirement benefits	\$ 1,590,311	\$ 1,812,040
b. Vesting benefits	157,418	212,159
c. Death benefits	11,062	12,036
d. Disability benefits	47,918	69,628
e. Refunds	3,747	1,875
f. Total	<u>\$ 1,810,456</u>	<u>\$ 2,107,738</u>
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 0	\$ 0
3. Actuarial present value of future expected benefit payments for members currently receiving benefits		
a. Service retired	\$ 13,819	\$ 425,408
b. Disability retired	0	0
c. Beneficiaries	0	0
d. Miscellaneous	0	0
e. Total	<u>\$ 13,819</u>	<u>\$ 425,408</u>

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(AMSC)

	<u>10/01/2017</u>	<u>10/01/2018</u>
4. Total actuarial present value of future expected benefit payments	\$ 1,824,275	\$ 2,533,146
5. Actuarial accrued liabilities	\$ 1,245,169	\$ 1,959,405
6. Unfunded actuarial accrued liabilities	\$ 192,182	\$ 674,870
D. <u>Statement of Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated vested benefits		
a. Participants currently receiving benefits	\$ 13,819	\$ 425,408
b. Other participants	1,020,337	980,346
c. Total	\$ 1,034,156	\$ 1,405,754
2. Actuarial present value of accumulated non-vested Plan benefits	8,806	91,478
3. Total actuarial present value of accumulated Plan benefits	\$ 1,042,962	\$ 1,497,232
E. <u>Statement of Change in Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated Plan benefits as of October 1, 2017		\$ 1,042,962
2. Increase (decrease) during period attributable to:		
a. Change in actuarial assumptions and / or Plan amendments		\$ 0
b. Benefits paid		(11,887)
c. Other, including benefits accumulated and increase for interest due to decrease in the discount period		466,157
d. Net increase		\$ 454,270
3. Actuarial present value of accumulated Plan benefits as of October 1, 2018		\$ 1,497,232

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(AMSC)

	<u>10/01/2017</u>	<u>10/01/2018</u>
F. <u>Pension Cost</u>		
1. Total normal cost (including administrative expenses)	\$ 124,076	\$ 128,124
2. Payment required to amortize unfunded liability	16,123	56,265
3. Interest adjustment	4,986	6,558
4. Total preliminary required contribution	\$ 145,185	\$ 190,947
5. Total required contribution	\$ 145,185	\$ 190,947
6. Item 5 as a percentage of payroll	14.7%	19.0%
7. Estimated member contributions	\$ 68,934	\$ 70,328
8. Item 7 as a percentage of payroll	7.0% ¹	7.0% ²
9. Estimated State contributions	\$ 0	\$ 0
10. Item 9 as a percentage of payroll	0.0%	0.0%
11. Net amount payable by City	\$ 76,251	\$ 120,619
12. Item 11 as a percentage of payroll	7.7% ¹	12.0% ²
G. <u>Past Contributions</u>		
1. Total contribution required (prior year's valuation)	\$ 146,792	\$ 145,185
2. Actual contributions made:		
a. Members	\$ 71,753	N/A
b. State	N/A	N/A
c. City	75,039	N/A
d. Total	\$ 146,792	N/A
H. <u>Net Actuarial Gain / (Loss)</u>	N/A	\$ (487,112)
I. <u>Disclosure of Following Items:</u>		
1. Actuarial present value of future salaries - attained age	\$ 4,738,905	\$ 5,399,900
2. Actuarial present value of future employee contributions - attained age	\$ 331,723	\$ 377,993
3. Actuarial present value of future contributions from other sources	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 539,939	\$ 568,912
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A

¹ Percent of expected 2018-2019 covered payroll (\$984,777)

¹ Percent of expected 2019-2020 covered payroll (\$1,004,692)

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(Police Officers)

	<u>10/01/2017</u>	<u>10/01/2018</u>
A. <u>Participant Data</u>		
1. Active participants	44	50
2. Retired participants and beneficiaries receiving benefits	20	21
3. Disabled participants receiving benefits	0	0
4. Terminated vested participants	5	5
5. Annual payroll of active participants	\$ 2,970,815	\$ 3,275,192
6. Expected payroll of active employees for the following year	\$ 2,970,815	\$ 3,321,045
7. Annual benefits payable to those currently receiving benefits	\$ 816,814	\$ 886,250
B. <u>Assets</u>		
1. Market Value of Assets	\$ 23,100,141	\$ 25,558,852
2. Smoothed Value of Assets	\$ 22,292,682	\$ 24,418,419
C. <u>Liabilities</u>		
1. Actuarial present value of future expected benefit payments for active members		
a. Retirement benefits	\$ 13,738,516	\$ 14,415,896
b. Vesting benefits	1,244,105	573,244
c. Death benefits	53,561	55,566
d. Disability benefits	311,517	329,463
e. Refunds	231,334	242,168
f. Total	<u>\$ 15,579,033</u>	<u>\$ 15,616,337</u>
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 938,505	\$ 593,195
3. Actuarial present value of future expected benefit payments for members currently receiving benefits		
a. Service retired	\$ 10,668,504	\$ 11,677,885
b. Disability retired	0	0
c. Beneficiaries	0	0
d. Miscellaneous	25,861	64,944
e. Total	<u>\$ 10,694,365</u>	<u>\$ 11,742,829</u>

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(Police Officers)

	<u>10/01/2017</u>	<u>10/01/2018</u>
4. Total actuarial present value of future expected benefit payments	\$ 27,211,903	\$ 27,952,361
5. Actuarial accrued liabilities	\$ 23,514,576	\$ 24,292,223
6. Unfunded actuarial accrued liabilities	\$ 1,221,894	\$ (126,196)
D. <u>Statement of Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated vested benefits		
a. Participants currently receiving benefits	\$ 10,668,504	\$ 11,677,885
b. Other participants	8,491,260	7,006,821
c. Total	<u>\$ 19,159,764</u>	<u>\$ 18,684,706</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>1,322,661</u>	<u>2,763,866</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 20,482,425	\$ 21,448,572
E. <u>Statement of Change in Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated Plan benefits as of October 1, 2017		\$ 20,482,425
2. Increase (decrease) during period attributable to:		
a. Change in actuarial assumptions and / or Plan amendments		\$ 0
b. Benefits paid		(903,765)
c. Other, including benefits accumulated and increase for interest due to decrease in the discount period		<u>1,869,912</u>
d. Net increase		\$ 966,147
3. Actuarial present value of accumulated Plan benefits as of October 1, 2018		\$ 21,448,572

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(Police Officers)

	<u>10/01/2017</u>	<u>10/01/2018</u>
F. Pension Cost		
1. Total normal cost (including administrative expenses)	\$ 580,094	\$ 605,242
2. Payment required to amortize unfunded liability	159,394	(10,039)
3. Interest adjustment	26,970	21,839
4. Total preliminary required contribution	\$ 766,458	\$ 617,042
5. Total required contribution (Greater of F.1. and F.4.)	\$ 766,458	\$ 617,042
6. Item 5 as a percentage of payroll	25.8%	18.8%
7. Estimated member contributions	\$ 279,650	\$ 249,078
8. Item 7 as a percentage of payroll	9.4% ¹	7.5% ²
9. Estimated State contributions	\$ 37,780	\$ 37,780
10. Item 9 as a percentage of payroll	1.3% ¹	1.1% ²
11. Net amount payable by City	\$ 449,028	\$ 338,823
12. Item 11 as a percentage of payroll	15.1% ¹	10.2% ²
G. Past Contributions		
1. Total contribution required (prior year's valuation)	\$ 838,174	\$ 766,458
2. Actual contributions made:		
a. Members	\$ 338,404	N/A
b. State	37,780	N/A
c. City	461,990	N/A
d. Total	\$ 838,174	N/A
H. Net Actuarial Gain / (Loss)		
	\$ 395,514	\$ 1,504,304
I. Disclosure of Following Items:		
1. Actuarial present value of future salaries - attained age	\$ 20,678,494	\$ 21,878,999
2. Actuarial present value of future employee contributions - attained age	\$ 1,550,887	\$ 1,640,925
3. Actuarial present value of future contributions from other sources	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 3,334,667	\$ 3,383,846
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A

¹ Percent of expected 2018-2019 covered payroll (\$2,970,815)

² Percent of expected 2019-2020 covered payroll (\$3,321,045)

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(All Participants)

	<u>10/01/2017</u>	<u>10/01/2018</u>
A. <u>Participant Data</u>		
1. Active participants	101	107
2. Retired participants and beneficiaries receiving benefits	48	48
3. Disabled participants receiving benefits	0	0
4. Terminated vested participants	8	9
5. Annual payroll of active participants	\$ 6,247,216	\$ 6,675,196
6. Expected payroll of active employees for the following year	\$ 6,247,216	\$ 6,721,049
7. Annual benefits payable to those currently receiving benefits	\$ 1,486,802	\$ 1,530,667
B. <u>Assets</u>		
1. Market Value of Assets	\$ 39,449,361	\$ 43,219,378
2. Smoothed Value of Assets	\$ 38,061,740	\$ 41,264,634
C. <u>Liabilities</u>		
1. Actuarial present value of future expected benefit payments for active members		
a. Retirement benefits	\$ 20,161,501	\$ 21,342,077
b. Vesting benefits	2,155,525	1,461,043
c. Death benefits	106,574	109,769
d. Disability benefits	675,422	718,464
e. Refunds	273,895	283,544
f. Total	<u>\$ 23,372,917</u>	<u>\$ 23,914,897</u>
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 1,548,645	\$ 1,266,989
3. Actuarial present value of future expected benefit payments for members currently receiving benefits		
a. Service retired	\$ 18,530,786	\$ 19,210,022
b. Disability retired	0	0
c. Beneficiaries	176,662	176,438
d. Miscellaneous	135,830	149,378
e. Total	<u>\$ 18,843,278</u>	<u>\$ 19,535,838</u>

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(All Participants)

	<u>10/01/2017</u>	<u>10/01/2018</u>
4. Total actuarial present value of future expected benefit payments	\$ 43,764,840	\$ 44,717,724
5. Actuarial accrued liabilities	\$ 38,173,469	\$ 39,169,604
6. Unfunded actuarial accrued liabilities	\$ 111,729	\$ (2,095,030)
D. <u>Statement of Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated vested benefits		
a. Participants currently receiving benefits	\$ 18,707,448	\$ 19,386,460
b. Other participants	13,473,721	12,223,902
c. Total	<u>\$ 32,181,169</u>	<u>\$ 31,610,362</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>1,646,167</u>	<u>3,134,126</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 33,827,336	\$ 34,744,488
E. <u>Statement of Change in Accumulated Plan Benefits</u>		
1. Actuarial present value of accumulated Plan benefits as of October 1, 2017		\$ 33,827,336
2. Increase (decrease) during period attributable to:		
a. Change in actuarial assumptions and / or Plan amendments		\$ 0
b. Benefits paid		(1,563,305)
c. Other, including benefits accumulated and increase for interest due to decrease in the discount period		<u>2,480,457</u>
d. Net increase		\$ 917,152
3. Actuarial present value of accumulated Plan benefits as of October 1, 2018		\$ 34,744,488

Actuarial Valuation as of October 1, 2018

State Required Exhibit

(All Participants)

	<u>10/01/2017</u>	<u>10/01/2018</u>
F. <u>Pension Cost</u>		
1. Total normal cost (including expenses)	\$ 959,697	\$ 981,888
2. Payment required to amortize unfunded liability	51,210	(193,875)
3. Interest adjustment	36,622	28,696
4. Total preliminary required contribution	\$ 1,047,529	\$ 816,709
5. Total required contribution	\$ 1,173,802	\$ 1,066,311
6. Item 5 as a percentage of payroll	18.8%	16.0%
7. Estimated member contributions	\$ 468,872	\$ 439,175
8. Item 7 as a percentage of payroll	7.5% ¹	6.5% ²
9. Estimated State contributions	\$ 37,780	\$ 37,780
10. Item 9 as a percentage of payroll	0.6% ¹	0.6% ²
11. Net amount payable by City	\$ 667,149	\$ 597,995
12. Item 11 as a percentage of payroll	10.7% ¹	8.9% ²
G. <u>Past Contributions</u>		
1. Total contribution required (prior year's valuation)	\$ 1,227,105	\$ 1,173,802
2. Actual contributions made:		
a. Members	\$ 536,473	N/A
b. State	37,780	N/A
c. City	652,852	N/A
d. Total	\$ 1,227,105	N/A
H. <u>Net Actuarial Gain / (Loss)</u>		
	\$ 659,830	\$ 2,287,619
I. <u>Disclosure of Following Items:</u>		
1. Actuarial present value of future salaries - attained age	\$ 43,508,722	\$ 45,957,035
2. Actuarial present value of future employee contributions - attained age	\$ 2,790,956	\$ 2,896,466
3. Actuarial present value of future contributions from other sources	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 5,381,978	\$ 5,431,831
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A

¹ Percent of expected 2018-2019 covered payroll (\$6,247,216)

² Percent of expected 2019-2020 covered payroll (\$6,721,049)

State Required Exhibit

	<u>Unfunded Actuarial Accrued Liabilities</u>	<u>Current Unfunded Liabilities</u>	<u>Amortization Payment</u>	<u>Remaining Funding Period</u>
<u>General Employees Tier 1</u>				
10/01/2015	Combined Bases *	\$ (1,166,604)	\$ (117,886)	16 years
10/01/2016	Actuarial Loss / (Gain)	(413,545)	(35,269)	23 years
10/01/2016	Assumption Change	426,727	36,393	23 years
10/01/2017	Actuarial Loss / (Gain)	(280,976)	(23,571)	24 years
10/01/2018	Actuarial Loss / (Gain)	<u>(1,290,160)</u>	<u>(106,612)</u>	25 years
	TOTAL	\$ (2,724,558)	\$ (246,945)	
<u>General Employees Tier 2</u>				
10/01/2017	Initial Base	\$ 61,121	\$ 5,213	23 years
10/01/2018	Actuarial Loss / (Gain)	<u>19,733</u>	<u>1,631</u>	25 years
	TOTAL	\$ 80,854	\$ 6,844	
<u>AMSC</u>				
10/01/2017	Combined Bases *	\$ 187,758	\$ 16,013	23 years
10/01/2018	Actuarial Loss / (Gain)	<u>487,112</u>	<u>40,252</u>	25 years
	TOTAL	\$ 674,870	\$ 56,265	
<u>Police Officers</u>				
10/01/2018	Combined Bases *	<u>\$ (126,196)</u>	<u>\$ (10,039)</u>	21 years
	TOTAL	\$ (126,196)	\$ (10,039)	

* Combined per Internal Revenue Code Regulation 1.412(b)-1

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. Based upon our understanding of the Plan, there is no benefit or expense to be provided by the Plan and/or paid from the Plan's assets for which liabilities or current costs have not been established or otherwise provided for in the valuation. All known events or trends which may require material increase in Plan costs or required contribution rates have been taken into account in the valuation.

Enrollment Number: 17-02802
Dated: May 8, 2019



Lawrence F. Wilson, A.S.A.

Glossary

Actuarial Accrued Liability. The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs.

Actuarial Assumptions. Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members and other items.

Actuarial Cost Method. Actuarial Cost Method A procedure for allocating the Actuarial Present Value of Future Benefits between the Actuarial Present Value of Future Normal Costs and the Actuarial Accrued Liability.

Actuarial Equivalent. Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value of Future Benefits. The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits and inactive, non-retired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation. The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB No. 67.

Actuarial Value of Assets. The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially required contribution.

Amortization Method. A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase.

Glossary

Amortization Payment. That portion of the plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Amortization Period. The period used in calculating the Amortization Payment.

Annual Required Contribution. The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The annual required contribution consists of the Employer Normal Cost and Amortization Payment plus interest adjustment.

Closed Amortization Period. A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc.

Employer Normal Cost. The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.

Equivalent Single Amortization Period. For plans that do not establish separate amortization bases (separate components of the UAAL), this is the same as the Amortization Period. For plans that do establish separate amortization bases, this is the period over which the UAAL would be amortized if all amortization bases were combined upon the current UAAL payment.

Experience Gain/Loss. A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two actuarial valuations. To the extent that actual experience differs from that assumed, Unfunded Actuarial Accrued Liabilities emerge which may be larger or smaller than projected. Gains are due to favorable experience, e.g., the assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. Losses are the result of unfavorable experience, i.e., actual results that produce Unfunded Actuarial Accrued Liabilities which are larger than projected.

Funded Ratio. The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability.

GASB. Governmental Accounting Standards Board.

Glossary

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

Normal Cost. The annual cost assigned, under the Actuarial Cost Method, to the current plan year.

Open Amortization Period. An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.

Unfunded Actuarial Accrued Liability. The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.

Valuation Date. The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date.