



April 30, 2020

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, 2019 Actuarial Valuation**

Dear Pension Board Members:

As requested, we are pleased to enclose sixteen (16) copies of the October 1, 2019 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 'Michelle Jones'.

Shelly L. Jones, A.S.A.  
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, 2019

This Valuation Determines the Annual Contribution for the Plan Year October 1, 2020 through September 30, 2021 to be paid in Fiscal Year October 1, 2020 to September 30, 2021

April 30, 2020





## South Miami Pension Plan

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April 30, 2020

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, 2019 Projection Actuarial Valuation**

Dear Pension Board Members:

We are pleased to present our October 1, 2019 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, 2021** 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, 2020).

General Employees Tier 1	\$ 162,697	(14.9%)
General Employees Tier 2	99,213	(7.7%)
AMSC Members	238,282	(17.1%)
Police Officers	575,662	(18.6%)
Total	<u>\$ 1,075,854</u>	(15.7%)

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	\$ 76,561 (7.0%)	\$ 38,510 (3.0%)	\$ 97,306 (7.0%)	\$ 231,750 (7.5%)	\$ 444,127 (6.5%)
State	N/A	N/A	N/A	\$ 79,228 (2.6%)	\$ 79,228 (1.2%)
City *	\$ 86,136 (7.9%)	\$ 60,703 (4.7%)	\$ 140,976 (10.1%)	\$ 264,684 (8.6%)	\$ 552,499 (8.1%)
Total	\$ 162,697 (14.9%)	\$ 99,213 (7.7%)	\$ 238,282 (17.1%)	\$ 575,662 (18.6%)	\$ 1,075,854 (15.7%)

\* Plan expenses allocated to City.

If State payments under F.S., Chapter 185 total less than \$101,697, the contribution must be increased by such deficiency – maximum \$79,228.

#### Changes in Actuarial Assumptions, Methods and Plan Benefits

The Plan provisions are unchanged from the October 1, 2018 Actuarial Impact Statements and are summarized on Table IX.

The mortality assumptions have been updated to use the mortality assumption used by the Florida Retirement System (FRS) as required under the F.S., Chapter 2015-157 based upon the July 1, 2019 FRS Actuarial Valuation. The remaining actuarial assumptions and methods remain unchanged from the October 1, 2018 Actuarial Impact Statements and are outlined on Table X.

#### Comparison of October 1, 2018 and October 1, 2019 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 the October 1, 2018 Actuarial Valuation. The left center columns of the Table indicate the costs as calculated for the October 1, 2018 Actuarial Impact Statements. The right center columns of the Table indicate the costs as calculated for October 1, 2019 prior to assumption change. The right columns indicate the costs as calculated for October 1, 2019 after assumption change.

Comparing the left center and right center 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 5% while covered payroll decreased by approximately 3%. Total normal cost, unfunded actuarial accrued liability and the net City minimum funding requirement all decreased both as a dollar amount and as a percentage of covered payroll.



**General Employees Tier 2** - the total number of active participants decreased by approximately 18% while covered payroll decreased by approximately 13%. Total normal cost, unfunded actuarial accrued liability and the net City minimum funding requirement all decreased both as a dollar amount and as a percentage of covered payroll.

**AMSC Members** - the total number of active participants decreased by approximately 14% while covered payroll decreased by approximately 10%. Total normal cost, unfunded actuarial accrued liability and the net City minimum funding requirement all decreased both as a dollar amount and as a percentage of covered payroll.

**Police Officers** - the total number of active participants decreased by approximately 14% while covered payroll decreased by approximately 6%. Total normal cost and the net City minimum funding requirement decreased 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.

Comparing the center right and right columns of Table II shows the effect of the assumption change.

**All Groups** – the total normal cost, unfunded actuarial accrued liability and the net City minimum funding requirement all 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 123.1% (119.9% prior to assumption change). This is a decrease from 129.7% as of the October 1, 2018 Actuarial Impact Statements.

### Plan Experience

Table VI indicates General Employees (including AMSC members) experienced a total actuarial gain of \$1,432,271. Police Officers experienced an actuarial loss of \$236,756. This suggests actual Plan experience was more favorable than expected for General Employees (including AMSC members) and less favorable than expected for Police Officers.

A main source of actuarial gain for the General Employees (including AMSC members) was the inclusion of the receivable City payment for the Supplemental Benefit.

Table XV (salary, termination and investment yield) provides figures on recent Plan experience. Salary experience indicates actual salary increases during fiscal 2019 averaged 4.1% for General / AMSC Employees and 11.1% for Police Officers. Compared to the Plan's salary increase assumption of 4.7% for General / AMSC Employees and 4.3% for Police Officers, salary experience was generally a source of actuarial gain for General / AMSC Employees and a source of actuarial loss for Police Officers. Three, five and ten-year average annual salary average increases are 4.3%, 4.6% and 2.8%, respectively for General / AMSC Employees. Three, five and ten-year average annual salary average increases are 3.8%, 3.1% and 1.9%, respectively for Police Officers.



Employee turnover this year was 80% of the assumed turnover for General / AMSC Employees and was generally an offsetting source of actuarial loss. Employee turnover this year was 240% of the assumed turnover for Police Officers and was generally an offsetting source of actuarial gain. Three, five and ten-year average turnover is 70%, 90% and 100%, respectively for General Employees / AMSC Employees. Three, five and ten-year average turnover is 160%, 130% and 90%, respectively for Police Officers.

Smoothed value investment return of 7.398% (net of the receivable City payment for the Supplemental Benefit) slightly exceeded the Plan investment return assumption of 7.375%. Investment return was a small source of actuarial gain during the previous year. The three, five and ten-year average annual smoothed value investment returns are 8.645%, 8.790% and 6.9%, respectively. The one, three, five and ten-year average annual market value investment returns are 2.011%, 8.274%, 6.984% and 8.2%, respectively.

### Member Census and Financial Data

The Plan Administrator and City submitted the Member census data as of October 1, 2019 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, 2019 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>2018</u> *	<u>2019</u>
Ratio of the market value of assets to payroll	6.47	6.64
Ratio of actuarial accrued liability to payroll	5.87	6.25
Ratio of actives to retirees and beneficiaries	2.23	2.10
Ratio of net cash flow to market value of assets	-1.2%	-1.1%
Duration of the actuarial accrued liability	14.07	13.79

\* Based on October 1, 2018 Actuarial Valuation



### **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 25-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 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,



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Shelly L. Jones, A.S.A., E.A.  
Consultant and Actuary



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

## Summary of Retirement Plan Costs as of October 1, 2019

General Employees Tier 1

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
A. Participant Data Summary				
1. Active employees	20	N/A	20	N/A
2. Terminated vested	4	N/A	4	N/A
3. Receiving benefits (including DROPs)	25	N/A	25	N/A
4. Annual payroll of active employees	\$ 1,093,727	100.0%	\$ 1,093,727	100.0%
B. Total Normal Costs				
1. Age retirement benefits	\$ 83,372	7.6%	\$ 82,003	7.5%
2. Termination benefits	24,681	2.3%	23,981	2.2%
3. Death benefits	1,134	0.1%	920	0.1%
4. Disability benefits	7,992	0.7%	8,164	0.7%
5. Estimated administrative expenses	47,629	4.4%	47,629	4.4%
6. Total annual normal costs	\$ 164,808	15.1%	\$ 162,697	14.9%
C. Total Actuarial Accrued Liability				
1. Age retirement benefits active employees	\$ 4,646,364	424.8%	\$ 4,572,753	418.1%
2. Termination benefits active employees	174,142	15.9%	168,930	15.4%
3. Death benefits active employees	25,484	2.3%	18,105	1.7%
4. Disability benefits active employees	238,622	21.8%	243,557	22.3%
5. Retired or terminated vested participants receiving benefits including DROP participants	7,450,121	681.2%	7,321,411	669.4%
6. Terminated vested participants entitled to future benefits	724,284	66.2%	701,986	64.2%
7. Deceased participants whose beneficiaries are receiving benefits	174,543	16.0%	171,340	15.7%
8. Disabled participants receiving benefits	0	0.0%	0	0.0%
9. Miscellaneous liability	83,178	7.6%	83,178	7.6%
10. Total actuarial accrued liability	\$ 13,516,738	1235.8%	\$ 13,281,260	1214.3%
D. Market Value of Assets (Table V)	\$ 16,484,050	1507.1%	\$ 16,484,050	1507.1%
E. Smoothed Value of Assets (Table V)	\$ 16,512,687	1509.8%	\$ 16,512,687	1509.8%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ (2,995,949)	(273.9%)	\$ (3,231,427)	(295.5%)

Summary of Retirement Plan Costs as of October 1, 2019

General Employees Tier 1

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution				
1. Total normal cost	\$ 164,808	15.1%	\$ 162,697	14.9%
2. Amortization of unfunded liability	(276,676)	(25.3%)	(296,135)	(27.1%)
3. Interest adjustment	(3,978)	(0.4%)	(4,745)	(0.4%)
4. Total preliminary required contribution	<u>\$ (115,846)</u>	<u>(10.6%)</u>	<u>\$ (138,183)</u>	<u>(12.6%)</u>
H. Minimum Required Contribution (F.S., 112.66 (13)) (Greater of G.1. and G.4.)	\$ 164,808	15.1%	\$ 162,697	14.9%
I. Contribution Sources for <b>Fiscal Year Ending September 30, 2021</b>				
1. City	\$ 88,247	8.1%	\$ 86,136	7.9%
2. Member	76,561	7.0%	76,561	7.0%
3. State	N/A	N/A	N/A	N/A
4. Total minimum funding requirement	<u>\$ 164,808</u>	<u>15.1%</u>	<u>\$ 162,697</u>	<u>14.9%</u>
J. Actuarial Present Value of Vested Accrued Benefits				
1. Retired, terminated vested, beneficiaries and disabled receiving benefits including DROPs	\$ 7,624,664	697.1%	\$ 7,492,751	685.1%
2. Terminated vested participants entitled to future benefits and miscellaneous	807,462	73.8%	785,164	71.8%
3. Active participants entitled to future benefits	<u>3,627,252</u>	<u>331.6%</u>	<u>3,568,535</u>	<u>326.3%</u>
4. Total actuarial present value of vested accrued benefits	\$ 12,059,378	1102.6%	\$ 11,846,450	1083.1%
K. Unfunded Actuarial Present Value of Vested Accrued Benefits (J. - D., not less than zero)	\$ 0	0.0%	\$ 0	0.0%
L. Vested Benefit Security Ratio (D. ÷ J.)	136.7%	N/A	139.1%	N/A

Summary of Retirement Plan Costs as of October 1, 2019

General Employees Tier 2

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
<b>A. Participant Data Summary</b>				
1. Active employees	28	N/A	28	N/A
2. Terminated vested	0	N/A	0	N/A
3. Receiving benefits (including DROPs)	0	N/A	0	N/A
4. Annual payroll of active employees	\$ 1,283,674	100.0%	\$ 1,283,674	100.0%
<b>B. Total Normal Costs</b>				
1. Age retirement benefits	\$ 64,444	5.0%	\$ 63,564	5.0%
2. Termination benefits	21,959	1.7%	21,261	1.7%
3. Death benefits	714	0.1%	543	0.0%
4. Disability benefits	5,214	0.4%	5,295	0.4%
5. Estimated administrative expenses	1,146	0.1%	1,146	0.1%
6. Total annual normal costs	\$ 93,477	7.3%	\$ 91,809	7.2%
<b>C. Total Actuarial Accrued Liability</b>				
1. Age retirement benefits active employees	\$ 440,109	34.3%	\$ 433,299	33.8%
2. Termination benefits active employees	107,789	8.4%	103,721	8.1%
3. Death benefits active employees	3,906	0.3%	2,855	0.2%
4. Disability benefits active employees	31,310	2.4%	31,708	2.5%
5. Retired or terminated vested participants receiving benefits including DROP participants	0	0.0%	0	0.0%
6. Terminated vested participants entitled to future benefits	0	0.0%	0	0.0%
7. Deceased participants whose beneficiaries are receiving benefits	0	0.0%	0	0.0%
8. Disabled participants receiving benefits	0	0.0%	0	0.0%
9. Miscellaneous liability	3,551	0.3%	3,551	0.3%
10. Total actuarial accrued liability	\$ 586,665	45.7%	\$ 575,134	44.8%
D. Market Value of Assets (Table V)	\$ 524,022	40.8%	\$ 524,022	40.8%
E. Smoothed Value of Assets (Table V)	\$ 532,384	41.5%	\$ 532,384	41.5%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ 54,281	4.2%	\$ 42,750	3.3%

Summary of Retirement Plan Costs as of October 1, 2019

General Employees Tier 2

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution				
1. Total normal cost	\$ 93,477	7.3%	\$ 91,809	7.2%
2. Amortization of unfunded liability	4,949	0.4%	3,996	0.3%
3. Interest adjustment	3,501	0.3%	3,408	0.3%
4. Total preliminary required contribution	<u>\$ 101,927</u>	7.9%	<u>\$ 99,213</u>	7.7%
H. Minimum Required Contribution (F.S., 112.66 (13)) (Greater of G.1. and G.4.)	\$ 101,927	7.9%	\$ 99,213	7.7%
I. Contribution Sources for <b>Fiscal Year Ending September 30, 2021</b>				
1. City	\$ 63,417	4.9%	\$ 60,703	4.7%
2. Member	38,510	3.0%	38,510	3.0%
3. State	N/A	N/A	N/A	N/A
4. Total minimum funding requirement	<u>\$ 101,927</u>	7.9%	<u>\$ 99,213</u>	7.7%
J. Actuarial Present Value of Vested Accrued Benefits				
1. Retired, terminated vested, beneficiaries and disabled receiving benefits including DROPs	\$ 0	0.0%	\$ 0	0.0%
2. Terminated vested participants entitled to future benefits and miscellaneous	3,551	0.3%	3,551	0.3%
3. Active participants entitled to future benefits	<u>164,627</u>	12.8%	<u>161,659</u>	12.6%
4. Total actuarial present value of vested accrued benefits	\$ 168,178	13.1%	\$ 165,210	12.9%
K. Unfunded Actuarial Present Value of Vested Accrued Benefits (J. - D., not less than zero)	\$ 0	0.0%	\$ 0	0.0%
L. Vested Benefit Security Ratio (D. ÷ J.)	311.6%	N/A	317.2%	N/A

Summary of Retirement Plan Costs as of October 1, 2019

	<u>AMSC</u>			
	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
<b>A. Participant Data Summary</b>				
1. Active employees	12	N/A	12	N/A
2. Terminated vested	0	N/A	0	N/A
3. Receiving benefits (including DROPs)	2	N/A	2	N/A
4. Annual payroll of active employees	\$ 1,390,082	100.0%	\$ 1,390,082	100.0%
<b>B. Total Normal Costs</b>				
1. Age retirement benefits	\$ 132,904	9.6%	\$ 131,162	9.4%
2. Termination benefits	7,662	0.6%	6,907	0.5%
3. Death benefits	892	0.1%	672	0.0%
4. Disability benefits	7,072	0.5%	7,233	0.5%
5. Estimated administrative expenses	5,045	0.4%	5,045	0.4%
6. Total annual normal costs	\$ 153,575	11.0%	\$ 151,019	10.9%
<b>C. Total Actuarial Accrued Liability</b>				
1. Age retirement benefits active employees	\$ 2,434,493	175.1%	\$ 2,389,875	171.9%
2. Termination benefits active employees	437,248	31.5%	427,423	30.7%
3. Death benefits active employees	7,820	0.6%	6,045	0.4%
4. Disability benefits active employees	73,602	5.3%	75,289	5.4%
5. Retired or terminated vested participants receiving benefits including DROP participants	417,026	30.0%	405,834	29.2%
6. Terminated vested participants entitled to future benefits	0	0.0%	0	0.0%
7. Deceased participants whose beneficiaries are receiving benefits	0	0.0%	0	0.0%
8. Disabled participants receiving benefits	0	0.0%	0	0.0%
9. Miscellaneous liability	0	0.0%	0	0.0%
10. Total actuarial accrued liability	\$ 3,370,189	242.4%	\$ 3,304,466	237.7%
D. Market Value of Assets (Table V)	\$ 2,352,072	169.2%	\$ 2,352,072	169.2%
E. Smoothed Value of Assets (Table V)	\$ 2,377,554	171.0%	\$ 2,377,554	171.0%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ 992,635	71.4%	\$ 926,912	66.7%

Summary of Retirement Plan Costs as of October 1, 2019

	<u>AMSC</u>			
	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
<b>G. Preliminary Minimum Required Contribution</b>				
1. Total normal cost	\$ 153,575	11.0%	\$ 151,019	10.9%
2. Amortization of unfunded liability	84,511	6.1%	79,080	5.7%
3. Interest adjustment	8,467	0.6%	8,183	0.6%
4. Total preliminary required contribution	<u>\$ 246,553</u>	17.7%	<u>\$ 238,282</u>	17.1%
<b>H. Minimum Required Contribution (F.S., 112.66 (13)) (Greater of G.1. and G.4.)</b>				
	\$ 246,553	17.7%	\$ 238,282	17.1%
<b>I. Contribution Sources for Fiscal Year Ending September 30, 2021</b>				
1. City	\$ 149,247	10.7%	\$ 140,976	10.1%
2. Member	97,306	7.0%	97,306	7.0%
3. State	N/A	N/A	N/A	N/A
4. Total minimum funding requirement	<u>\$ 246,553</u>	17.7%	<u>\$ 238,282</u>	17.1%
<b>J. Actuarial Present Value of Vested Accrued Benefits</b>				
1. Retired, terminated vested, beneficiaries and disabled receiving benefits including DROPs	\$ 417,026	30.0%	\$ 405,834	29.2%
2. Terminated vested participants entitled to future benefits and miscellaneous	0	0.0%	0	0.0%
3. Active participants entitled to future benefits	<u>1,858,934</u>	133.7%	<u>1,827,574</u>	131.5%
4. Total actuarial present value of vested accrued benefits	\$ 2,275,960	163.7%	\$ 2,233,408	160.7%
<b>K. Unfunded Actuarial Present Value of Vested Accrued Benefits (J. - D., not less than zero)</b>				
	\$ 0	0.0%	\$ 0	0.0%
<b>L. Vested Benefit Security Ratio (D. ÷ J.)</b>				
	103.3%	N/A	105.3%	N/A

Summary of Retirement Plan Costs as of October 1, 2019

Police Officers

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
A. Participant Data Summary				
1. Active employees	43	N/A	43	N/A
2. Terminated vested	5	N/A	5	N/A
3. Receiving benefits (including DROPs)	22	N/A	22	N/A
4. Annual payroll of active employees	\$ 3,090,000	100.0%	\$ 3,090,000	100.0%
B. Total Normal Costs				
1. Age retirement benefits	\$ 420,768	13.6%	\$ 411,828	13.3%
2. Termination benefits	70,178	2.3%	69,972	2.3%
3. Death benefits	2,989	0.1%	2,202	0.1%
4. Disability benefits	16,168	0.5%	16,408	0.5%
5. Estimated administrative expenses	75,252	2.4%	75,252	2.4%
6. Total annual normal costs	\$ 585,355	18.9%	\$ 575,662	18.6%
C. Total Actuarial Accrued Liability				
1. Age retirement benefits active employees	\$ 12,554,509	406.3%	\$ 12,251,376	396.5%
2. Termination benefits active employees	459,066	14.9%	456,167	14.8%
3. Death benefits active employees	26,839	0.9%	18,121	0.6%
4. Disability benefits active employees	185,241	6.0%	187,677	6.1%
5. Retired or terminated vested participants receiving benefits including DROP participants	12,592,258	407.5%	12,124,305	392.4%
6. Terminated vested participants entitled to future benefits	640,146	20.7%	623,345	20.2%
7. Deceased participants whose beneficiaries are receiving benefits	0	0.0%	0	0.0%
8. Disabled participants receiving benefits	0	0.0%	0	0.0%
9. Miscellaneous liability	26,068	0.8%	26,068	0.8%
10. Total actuarial accrued liability	\$ 26,484,127	857.1%	\$ 25,687,059	831.3%
D. Market Value of Assets (Table V)	\$ 26,203,867	848.0%	\$ 26,203,867	848.0%
E. Smoothed Value of Assets (Table V)	\$ 26,368,672	853.4%	\$ 26,368,672	853.4%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ 115,455	3.7%	\$ (681,613)	(22.1%)

## Summary of Retirement Plan Costs as of October 1, 2019

	<u>Police Officers</u>			
	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution				
1. Total normal cost	\$ 585,355	18.9%	\$ 575,662	18.6%
2. Amortization of unfunded liability	6,636	0.2%	(59,230)	(1.9%)
3. Interest adjustment	22,461	0.7%	19,775	0.6%
4. Total preliminary required contribution	<u>\$ 614,452</u>	19.9%	<u>\$ 536,207</u>	17.4%
H. Minimum Required Contribution (F.S., 112.66 (13)) (Greater of G.1. and G.4.)	\$ 614,452	19.9%	\$ 575,662	18.6%
I. Expected Payroll of Active Employees for Fiscal Year Ending 2021 (A.4. x 1.000)	\$ 3,090,000	100.0%	\$ 3,090,000	100.0%
J. Contribution Sources for <b>Fiscal Year Ending September 30, 2021</b> (% of projected payroll of active employees for fiscal year ending 2021)				
1. City	\$ 303,474	9.8%	\$ 264,684	8.6%
2. Member	231,750	7.5%	231,750	7.5%
3. State	79,228	2.6%	79,228	2.6%
4. Total required contribution	<u>\$ 614,452</u>	19.9%	<u>\$ 575,662</u>	18.6%
K. Actuarial Present Value of Vested Accrued Benefits				
1. Retired, terminated vested, beneficiaries and disabled receiving benefits including DROPs	\$ 12,592,258	407.5%	\$ 12,124,305	392.4%
2. Terminated vested participants entitled to future benefits and miscellaneous	666,214	21.6%	649,413	21.0%
3. Active participants entitled to future benefits	8,641,562	279.7%	8,442,618	273.2%
4. Total actuarial present value of vested accrued benefits	<u>\$ 21,900,034</u>	708.7%	<u>\$ 21,216,336</u>	686.6%
L. Unfunded Actuarial Present Value of Vested Accrued Benefits (K. - D., not less than zero)	\$ 0	0.0%	\$ 0	0.0%
M. Vested Benefit Security Ratio (D. ÷ K.)	119.7%	N/A	123.5%	N/A

Summary of Retirement Plan Costs as of October 1, 2019

All Participants

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
A. Participant Data Summary				
1. Active employees	103	N/A	103	N/A
2. Terminated vested	9	N/A	9	N/A
3. Receiving benefits (including DROPs)	49	N/A	49	N/A
4. Annual payroll of active employees	\$ 6,857,483	100.0%	\$ 6,857,483	100.0%
B. Total Normal Costs				
1. Age retirement benefits	\$ 701,488	10.2%	\$ 688,557	10.0%
2. Termination benefits	124,480	1.8%	122,121	1.8%
3. Death benefits	5,729	0.1%	4,337	0.1%
4. Disability benefits	36,446	0.5%	37,100	0.5%
5. Estimated administrative expenses	129,072	1.9%	129,072	1.9%
6. Total annual normal costs	\$ 997,215	14.5%	\$ 981,187	14.3%
C. Total Actuarial Accrued Liability				
1. Age retirement benefits active employees	\$ 20,075,475	292.8%	\$ 19,647,303	286.5%
2. Termination benefits active employees	1,178,245	17.2%	1,156,241	16.9%
3. Death benefits active employees	64,049	0.9%	45,126	0.7%
4. Disability benefits active employees	528,775	7.7%	538,231	7.8%
5. Retired or terminated vested participants receiving benefits including DROP participants	20,459,405	298.4%	19,851,550	289.5%
6. Terminated vested participants entitled to future benefits	1,364,430	19.9%	1,325,331	19.3%
7. Deceased participants whose beneficiaries are receiving benefits	174,543	2.5%	171,340	2.5%
8. Disabled participants receiving benefits	0	0.0%	0	0.0%
9. Miscellaneous liability	112,797	1.6%	112,797	1.6%
10. Total actuarial accrued liability	\$ 43,957,719	641.0%	\$ 42,847,919	624.8%
D. Market Value of Assets (Table V)	\$ 45,564,011	664.4%	\$ 45,564,011	664.4%
E. Smoothed Value of Assets (Table V)	\$ 45,791,297	667.8%	\$ 45,791,297	667.8%
F. Unfunded Actuarial Accrued Liability (C. - E.)	\$ (1,833,578)	(26.7%)	\$ (2,943,378)	(42.9%)

## Summary of Retirement Plan Costs as of October 1, 2019

All Participants

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Payroll</u>	<u>Cost Data</u>	<u>% of Payroll</u>
G. Preliminary Minimum Required Contribution				
1. Total normal cost	\$ 997,215	14.5%	\$ 981,187	14.3%
2. Amortization of unfunded liability	(180,580)	(2.6%)	(272,289)	(4.0%)
3. Interest adjustment	30,451	0.4%	26,621	0.4%
4. Total preliminary required contribution	<u>\$ 847,086</u>	12.4%	<u>\$ 735,519</u>	10.7%
H. Minimum Required Contribution (F.S., 112.66 (13))	\$ 1,127,740	16.4%	\$ 1,075,854	15.7%
I. Expected Payroll of Active Employees for Fiscal Year Ending 2021 (\$1,093,727 x 1.000 + \$1,283,674 x 1.000 + \$1,390,082 x 1.000 + \$3,090,000 x 1.000)	\$ 6,857,483	100.0%	\$ 6,857,483	100.0%
J. Contribution Sources for <b>Fiscal Year Ending September 30, 2021</b> (% of projected payroll of active employees for fiscal year ending 2021)				
1. City	\$ 604,385	8.8%	\$ 552,499	8.1%
2. Member	444,127	6.5%	444,127	6.5%
3. State	79,228	1.2%	79,228	1.2%
4. Total required contribution	<u>\$ 1,127,740</u>	16.4%	<u>\$ 1,075,854</u>	15.7%
K. Actuarial Present Value of Vested Accrued Benefits				
1. Retired, terminated vested, beneficiaries and disabled receiving benefits including DROPs	\$ 20,633,948	300.9%	\$ 20,022,890	292.0%
2. Terminated vested participants entitled to future benefits and miscellaneous	1,477,227	21.5%	1,438,128	21.0%
3. Active participants entitled to future benefits	<u>14,292,375</u>	208.4%	<u>14,000,386</u>	204.2%
4. Total actuarial present value of vested accrued benefits	\$ 36,403,550	530.9%	\$ 35,461,404	517.1%
L. Unfunded Actuarial Present Value of Vested Accrued Benefits (K. - D., not less than zero)	\$ 0	0.0%	\$ 0	0.0%
M. Vested Benefit Security Ratio (D. ÷ K.)	125.2%	N/A	128.5%	N/A

## Comparison of Cost Data of October 1, 2018 and October 1, 2019 Valuations

	<u>General Employees Tier 1</u>							
	<u>Actuarial Valuation October 1, 2018</u>		<u>Actuarial Impact Statement October 1, 2018</u>		<u>Prior Assumptions October 1, 2019</u>		<u>Current Assumptions October 1, 2019</u>	
	<u>Cost Data</u>	<u>% of Annual Compensation</u>	<u>Cost Data</u>	<u>% of Annual Compensation</u>	<u>Cost Data</u>	<u>% of Annual Compensation</u>	<u>Cost Data</u>	<u>% of Annual Compensation</u>
A. Participants								
1. Active employees	22	N/A	21	N/A	20	N/A	20	N/A
2. Terminated vested	4	N/A	4	N/A	4	N/A	4	N/A
3. Receiving benefits	25	N/A	25	N/A	25	N/A	25	N/A
4. Annual payroll of active employees	\$ 1,197,748	100.0%	\$ 1,121,870	100.0%	\$ 1,093,727	100.0%	\$ 1,093,727	100.0%
B. Total Normal Costs	\$ 172,241	14.4%	\$ 180,778	16.1%	\$ 164,808	15.1%	\$ 162,697	14.9%
C. Total Actuarial Accrued Liability	\$ 12,587,522	1050.9%	\$ 13,055,074	1163.7%	\$ 13,516,738	1235.8%	\$ 13,281,260	1214.3%
D. Smoothed Value of Assets	\$ 15,312,080	1278.4%	\$ 15,117,299	1347.5%	\$ 16,512,687	1509.8%	\$ 16,512,687	1509.8%
E. Unfunded Actuarial Accrued Liability	\$ (2,724,558)	(227.5%)	\$ (2,062,225)	(183.8%)	\$ (2,995,949)	(273.9%)	\$ (3,231,427)	(295.5%)
F. Member Cost	\$ 83,842	7.0%	\$ 78,531	7.0%	\$ 76,561	7.0%	\$ 76,561	7.0%
G. City Cost (includes expenses)	\$ 88,399	7.4%	\$ 102,247	9.1%	\$ 88,247	8.1%	\$ 86,136	7.9%
H. Actuarial Present Value of Vested Accrued Benefits	\$ 11,397,294	951.6%	\$ 11,515,887	1026.5%	\$ 12,059,378	1102.6%	\$ 11,846,450	1083.1%
I. Vested Benefit Security Ratio	141.1%	N/A	137.9%	N/A	136.7%	N/A	139.1%	N/A

Comparison of Cost Data of October 1, 2018 and October 1, 2019 Valuations

General Employees Tier 2

	Actuarial Valuation October 1, 2018		Actuarial Impact Statement October 1, 2018		Prior Assumptions October 1, 2019		Current Assumptions October 1, 2019	
	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation
A. Participants								
1. Active employees	27	N/A	34	N/A	28	N/A	28	N/A
2. Terminated vested	0	N/A	0	N/A	0	N/A	0	N/A
3. Receiving benefits	0	N/A	0	N/A	0	N/A	0	N/A
4. Annual payroll of active employees	\$ 1,197,564	100.0%	\$ 1,480,965	100.0%	\$ 1,283,674	100.0%	\$ 1,283,674	100.0%
B. Total Normal Costs	\$ 76,281	6.4%	\$ 109,470	7.4%	\$ 93,477	7.3%	\$ 91,809	7.2%
C. Total Actuarial Accrued Liability	\$ 330,454	27.6%	\$ 400,355	27.0%	\$ 586,665	45.7%	\$ 575,134	44.8%
D. Smoothed Value of Assets	\$ 249,600	20.8%	\$ 245,745	16.6%	\$ 532,384	41.5%	\$ 532,384	41.5%
E. Unfunded Actuarial Accrued Liability	\$ 80,854	6.8%	\$ 154,610	10.4%	\$ 54,281	4.2%	\$ 42,750	3.3%
F. Member Cost	\$ 35,927	3.0%	\$ 44,429	3.0%	\$ 38,510	3.0%	\$ 38,510	3.0%
G. City Cost (includes expenses)	\$ 50,154	4.2%	\$ 81,531	5.5%	\$ 63,417	4.9%	\$ 60,703	4.7%
H. Actuarial Present Value of Vested Accrued Benefits	\$ 122,608	10.2%	\$ 123,082	8.3%	\$ 168,178	13.1%	\$ 165,210	12.9%
I. Vested Benefit Security Ratio	207.9%	N/A	203.9%	N/A	311.6%	N/A	317.2%	N/A

Comparison of Cost Data of October 1, 2018 and October 1, 2019 Valuations

	<u>AMSC</u>							
	Actuarial Valuation October 1, 2018		Actuarial Impact Statement October 1, 2018		Prior Assumptions October 1, 2019		Current Assumptions October 1, 2019	
	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation
A. Participants								
1. Active employees	8	N/A	14	N/A	12	N/A	12	N/A
2. Terminated vested	0	N/A	0	N/A	0	N/A	0	N/A
3. Receiving benefits	2	N/A	2	N/A	2	N/A	2	N/A
4. Annual payroll of active employees	\$ 1,004,692	100.0%	\$ 1,543,275	100.0%	\$ 1,390,082	100.0%	\$ 1,390,082	100.0%
B. Total Normal Costs	\$ 128,124	12.8%	\$ 199,805	12.9%	\$ 153,575	11.0%	\$ 151,019	10.9%
C. Total Actuarial Accrued Liability	\$ 1,959,405	195.0%	\$ 2,861,085	185.4%	\$ 3,370,189	242.4%	\$ 3,304,466	237.7%
D. Smoothed Value of Assets	\$ 1,284,535	127.9%	\$ 1,483,171	96.1%	\$ 2,377,554	171.0%	\$ 2,377,554	171.0%
E. Unfunded Actuarial Accrued Liability	\$ 674,870	67.2%	\$ 1,377,914	89.3%	\$ 992,635	71.4%	\$ 926,912	66.7%
F. Member Cost	\$ 70,328	7.0%	\$ 108,029	7.0%	\$ 97,306	7.0%	\$ 97,306	7.0%
G. City Cost (includes expenses)	\$ 120,619	12.0%	\$ 217,310	14.1%	\$ 149,247	10.7%	\$ 140,976	10.1%
H. Actuarial Present Value of Vested Accrued Benefits	\$ 1,405,754	139.9%	\$ 1,800,092	116.6%	\$ 2,275,960	163.7%	\$ 2,233,408	160.7%
I. Vested Benefit Security Ratio	94.4%	N/A	84.7%	N/A	103.3%	N/A	105.3%	N/A

Comparison of Cost Data of October 1, 2018 and October 1, 2019 Valuations

		<u>Police Officers</u>							
		<u>Actuarial Valuation</u> <u>October 1, 2018</u>		<u>Actuarial Impact Statement</u> <u>October 1, 2018</u>		<u>Prior Assumptions</u> <u>October 1, 2019</u>		<u>Current Assumptions</u> <u>October 1, 2019</u>	
		<u>Cost</u> <u>Data</u>	<u>% of Annual</u> <u>Compensation</u>	<u>Cost</u> <u>Data</u>	<u>% of Annual</u> <u>Compensation</u>	<u>Cost</u> <u>Data</u>	<u>% of Annual</u> <u>Compensation</u>	<u>Cost</u> <u>Data</u>	<u>% of Annual</u> <u>Compensation</u>
A.	Participants								
	1. Active employees	50	N/A	50	N/A	43	N/A	43	N/A
	2. Terminated vested	5	N/A	5	N/A	5	N/A	5	N/A
	3. Receiving benefits	21	N/A	21	N/A	22	N/A	22	N/A
	4. Annual payroll of active employees	\$ 3,275,192	100.0%	\$ 3,275,192	100.0%	\$ 3,090,000	100.0%	\$ 3,090,000	100.0%
B.	Total Normal Costs	\$ 605,242	18.5%	\$ 637,080	19.5%	\$ 585,355	18.9%	\$ 575,662	18.6%
C.	Total Actuarial Accrued Liability	\$ 24,292,223	741.7%	\$ 24,765,940	756.2%	\$ 26,484,127	857.1%	\$ 25,687,059	831.3%
D.	Smoothed Value of Assets	\$ 24,418,419	745.6%	\$ 24,797,471	757.1%	\$ 26,368,672	853.4%	\$ 26,368,672	853.4%
E.	Unfunded Actuarial Accrued Liability	\$ (126,196)	(3.9%)	\$ (31,531)	(1.0%)	\$ 115,455	3.7%	\$ (681,613)	(22.1%)
F.	Member Cost	\$ 249,078	7.5% <sup>1</sup>	\$ 249,078	7.5% <sup>1</sup>	\$ 231,750	7.5% <sup>2</sup>	\$ 231,750	7.5% <sup>2</sup>
G.	City Cost (includes expenses)	\$ 338,823	10.2% <sup>1</sup>	\$ 338,823	10.2% <sup>1</sup>	\$ 303,474	9.8% <sup>2</sup>	\$ 264,684	8.6% <sup>2</sup>
H.	Actuarial Present Value of Vested Accrued Benefits	\$ 18,684,706	570.5%	\$ 20,164,820	615.7%	\$ 21,900,034	708.7%	\$ 21,216,336	686.6%
I.	Vested Benefit Security Ratio	136.8%	N/A	128.6%	N/A	119.7%	N/A	123.5%	N/A

<sup>1</sup> Percent of expected 2019-2020 covered payroll (\$3,321,045)

<sup>2</sup> Percent of expected 2020-2021 covered payroll (\$3,090,000)

Comparison of Cost Data of October 1, 2018 and October 1, 2019 Valuations

		<u>All Participants</u>							
		<u>Actuarial Valuation</u>		<u>Actuarial Impact Statement</u>		<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
		<u>October 1, 2018</u>		<u>October 1, 2018</u>		<u>October 1, 2019</u>		<u>October 1, 2019</u>	
		<u>Cost</u>	<u>% of Annual</u>	<u>Cost</u>	<u>% of Annual</u>	<u>Cost</u>	<u>% of Annual</u>	<u>Cost</u>	<u>% of Annual</u>
		<u>Data</u>	<u>Compensation</u>	<u>Data</u>	<u>Compensation</u>	<u>Data</u>	<u>Compensation</u>	<u>Data</u>	<u>Compensation</u>
A.	Participants								
	1. Active employees	107	N/A	119	N/A	103	N/A	103	N/A
	2. Terminated vested	9	N/A	9	N/A	9	N/A	9	N/A
	3. Receiving benefits	48	N/A	48	N/A	49	N/A	49	N/A
	4. Annual payroll of active employees	\$ 6,675,196	100.0%	\$ 7,421,302	100.0%	\$ 6,857,483	100.0%	\$ 6,857,483	100.0%
B.	Total Normal Costs	\$ 981,888	14.7%	\$ 1,127,133	15.2%	\$ 997,215	14.5%	\$ 981,187	14.3%
C.	Total Actuarial Accrued Liability	\$ 39,169,604	586.8%	\$ 41,082,454	553.6%	\$ 43,957,719	641.0%	\$ 42,847,919	624.8%
D.	Smoothed Value of Assets	\$ 41,264,634	618.2%	\$ 41,643,686	561.1%	\$ 45,791,297	667.8%	\$ 45,791,297	667.8%
E.	Unfunded Actuarial Accrued Liability	\$ (2,095,030)	(31.4%)	\$ (561,232)	(7.6%)	\$ (1,833,578)	(26.7%)	\$ (2,943,378)	(42.9%)
F.	Member Cost	\$ 439,175	6.5% <sup>1</sup>	\$ 480,067	6.4% <sup>2</sup>	\$ 444,127	6.5% <sup>3</sup>	\$ 444,127	6.5% <sup>3</sup>
G.	City Cost (includes expenses)	\$ 597,995	8.9% <sup>1</sup>	\$ 739,911	9.9% <sup>2</sup>	\$ 604,385	8.8% <sup>3</sup>	\$ 552,499	8.1% <sup>3</sup>
H.	Actuarial Present Value of Vested Accrued Benefits	\$ 31,610,362	473.5%	\$ 33,603,881	452.8%	\$ 36,403,550	530.9%	\$ 35,461,404	517.1%
I.	Vested Benefit Security Ratio	136.7%	N/A	129.7%	N/A	125.2%	N/A	128.5%	N/A

<sup>1</sup> Percent of expected 2019-2020 covered payroll (\$6,721,049)

<sup>2</sup> Percent of expected 2019-2020 covered payroll (\$7,467,155)

<sup>3</sup> Percent of expected 2020-2021 covered payroll (\$6,857,483)

**Characteristics of Participants in  
Actuarial Valuation as of October 1, 2019**

	General		AMSC	Police	Total
	Tier 1	Tier 2			
<b>A. <u>Active Plan Participants Summary</u></b>					
1. Active participants fully vested	18	10	10	23	61
2. Active participants partially vested	0	0	0	0	0
3. Active participants non-vested	2	18	2	20	42
4. Total active participants	20	28	12	43	103
5. Annual rate of pay of active participants	\$ 1,093,727	\$ 1,283,674	\$ 1,390,082	\$ 3,090,000	\$ 6,857,483
<b>B. <u>Retired and Terminated Vested Participant Summary</u></b>					
1. Retired or terminated vested participants receiving benefits	24	0	2	22	48
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
<b>C. <u>Projected Annual Retirement Benefits</u></b>					
1. Retired or terminated vested receiving benefits including DROP participants	\$ 616,826	\$ 0	\$ 44,460	\$ 933,689	\$ 1,594,975
2. Terminated vested entitled to future benefits	\$ 89,056	\$ 0	\$ 0	\$ 116,164	\$ 205,220
3. Beneficiaries of deceased participants	\$ 15,066	\$ 0	\$ 0	\$ 0	\$ 15,066
4. Disabled participants	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

## Statement of Assets as of October 1, 2019

	General		AMSC	Police	Total
	Tier 1	Tier 2			
<u>Market Value of Assets</u>					
<b>A. <u>General Investments</u></b>					
1. Cash and Cash Equivalents	\$ 327,130	\$ 6,834	\$ 35,762	\$ 530,568	\$ 900,294
2. U.S. Government Securities	1,948,278	40,703	212,988	3,159,877	5,361,846
3. Common Stocks	2,081,483	43,486	227,550	3,375,918	5,728,437
4. Corporate Obligations	2,267,741	47,378	247,912	3,678,005	6,241,036
5. International Equity	301,218	6,293	32,929	488,539	828,979
6. Real Estate	608,025	12,703	66,470	986,144	1,673,342
7. Mutual Funds					
Equity	5,857,307	122,371	640,327	9,499,854	16,119,859
International Equity	2,343,189	48,954	256,160	3,800,375	6,448,678
8. Prepaid Insurance	690	14	75	1,120	1,899
9. Total General Investments	\$ 15,735,061	\$ 328,736	\$ 1,720,173	\$ 25,520,400	\$ 43,304,370
<b>B. <u>Receivables</u></b>					
1. City Contributions	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2. Employee Contributions	2,993	1,471	29,415	12,693	46,572
3. Share Plan Contributions	0	0	0	416,832 *	416,832 *
4. Interest and Dividends	28,733	600	3,141	46,603	79,077
5. Other	742,454	193,741	602,097	248,194	1,786,486
6. Pending Trades	27,009	564	2,953	43,805	74,331
7. Total Receivables	\$ 801,189	\$ 196,376	\$ 637,606	\$ 768,127	\$ 2,403,298
<b>C. <u>Payables</u></b>					
1. Accounts Payable	\$ 15,510	\$ 324	\$ 1,696	\$ 25,155	\$ 42,685
2. Pending Trades	36,689	767	4,011	59,505	100,972
3. Total Payables	\$ 52,199	\$ 1,091	\$ 5,707	\$ 84,660	\$ 143,657
<b>E. <u>Total Assets (A. + B. - C. + D.)</u></b>	<b>\$ 16,484,050</b>	<b>\$ 524,022</b>	<b>\$ 2,352,072</b>	<b>\$ 26,203,867</b>	<b>\$ 45,564,011</b>

\* State Monies received fiscal year ended September 30, 2019.

## Reconciliation of Plan Assets

	General		AMSC	Police	Total
	Tier 1	Tier 2			
A. <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
B. <u>Receipts During Year</u>					
1. Contributions					
a. Members	\$ 83,786	\$ 37,600	\$ 153,400	\$ 319,967	\$ 594,753
b. City	98,619	43,251	76,251	449,028	667,149
c. City - per settlement	0	0	0	49,243	49,243
d. State	0	0	0	416,832	416,832
e. Total	\$ 182,405	\$ 80,851	\$ 229,651	\$ 1,235,070	\$ 1,727,977
2. Investment income					
a. Interest, dividends and other	\$ 310,499	\$ 7,472	\$ 32,890	\$ 490,576	\$ 841,437
b. Investment expenses	(64,680)	(1,556)	(6,851)	(102,192)	(175,279)
c. Net interest and dividends	\$ 245,819	\$ 5,916	\$ 26,039	\$ 388,384	\$ 666,158
3. Realized and unrealized gain / ( loss)					
a. Realized gain / (loss)	\$ 275,150	\$ 6,621	\$ 29,145	\$ 434,728	\$ 745,644
b. Unrealized gain / (loss)	(200,519)	(4,825)	(21,240)	(316,812)	(543,396)
c. Net realized and unrealized gain/(loss)	\$ 74,631	\$ 1,796	\$ 7,905	\$ 117,916	\$ 202,248
4. Other	742,454	193,741	602,097	0	1,538,292
5. Total receipts during period	\$ 1,245,309	\$ 282,304	\$ 865,692	\$ 1,741,370	\$ 4,134,675
C. <u>Disbursements During Year</u>					
1. Benefit payments	\$ 593,358	\$ 0	\$ 44,009	\$ 861,711	\$ 1,499,078
2. Contribution refunds	0	2,500	0	159,392	161,892
3. Administrative expenses	47,629	1,146	5,045	75,252	129,072
4. Total disbursements during period	\$ 640,987	\$ 3,646	\$ 49,054	\$ 1,096,355	\$ 1,790,042
D. <u>Internal Transfer</u>	\$ (199,096)	\$ (9,492)	\$ 208,588	\$ 0	\$ 0
E. <u>Market Value of Assets as of October 1, 2019</u>	\$ 16,484,050	\$ 524,022	\$ 2,352,072	\$ 26,203,867	\$ 45,564,011
F. <u>Estimated expenses to be paid by the City as of October 1, 2019</u>					
1. Administrative	\$ 47,629	\$ 1,146	\$ 5,045	\$ 75,252	\$ 129,072
2. Investment	\$ 64,680	\$ 1,556	\$ 6,851	\$ 102,192	\$ 175,279

All Participants

Development of Smoothed Value of Assets as of September 30

	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
A. Preliminary smoothed value from prior year	\$ 38,061,740	\$ 41,264,634	\$ 45,791,297			
B. Market value beginning of year	\$ 39,449,361	\$ 43,219,378	\$ 45,564,011			
C. Market value end of year	\$ 43,219,378	\$ 45,564,011				
D. Non-investment net cash flow	\$ (214,525)	\$ 1,476,227				
E. Investment return						
1. Total market value return: C. - B. - D.	\$ 3,984,542	\$ 868,406				
2. Amount for immediate recognition (7.375%)	2,901,480	3,185,140				
3. Amount for phased-in recognition: E.1. - E.2.	1,083,062	(2,316,734)				
F. Phased-in recognition of investment return						
1. Current year: 20% of E.3.	\$ 216,612	\$ (463,347)				
2. First prior year	392,615	216,612	(463,347)			
3. Second prior year	191,037	392,615	216,612	(463,347)		
4. Third prior year	(471,622)	191,037	392,615	216,612	(463,347)	
5. Fourth prior year	187,297	(471,621)	191,035	392,613	216,614	(463,346)
6. Total phased-in recognition of investment return	\$ 515,939	\$ (134,704)	\$ 336,915	\$ 145,878	\$ (246,733)	\$ (463,346)
G. Smoothed value end of year						
1. Preliminary smoothed value end of year:						
A. + D. + E.2. + F.6.	\$ 41,264,634	\$ 45,791,297				
2. Upper corridor limit: 120% of C.	51,863,254	54,676,813				
3. Lower corridor limit: 80% of C.	34,575,502	36,451,209				
4. Smoothed value end of year:						
G.1., not more than G.2., nor less than G.3.	\$ 41,264,634	\$ 45,791,297				
H. Difference between market value and smoothed value	\$ 1,954,744	\$ (227,286)				
I. Smoothed value rate of return	9.004%	7.398%				
J. Market value rate of return	10.128%	2.011%				

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, 2018</u>	\$15,312,080	\$ 249,600	\$ 1,284,535	\$24,418,419	\$41,264,634
B. <u>Receipts During Period</u>					
1. Member Contributions	\$ 83,786	\$ 37,600	\$ 153,400	\$ 319,967	\$ 594,753
2. City Contributions	98,619	43,251	76,251	498,271	716,392
3. State Contributions	0	0	0	416,832	416,832
4. Other	742,454	193,741	602,097	0	1,538,292
5. Net Investment Return	<u>1,115,831</u>	<u>21,330</u>	<u>101,737</u>	<u>1,811,538</u>	<u>3,050,436</u>
6. Total Receipts During Period	\$ 2,040,690	\$ 295,922	\$ 933,485	\$ 3,046,608	\$ 6,316,705
C. <u>Disbursements During Period</u>					
1. Benefit Payments	\$ 593,358	\$ 0	\$ 44,009	\$ 861,711	\$ 1,499,078
2. Contribution Refunds	0	2,500	0	159,392	161,892
3. Administrative Expenses	<u>47,629</u>	<u>1,146</u>	<u>5,045</u>	<u>75,252</u>	<u>129,072</u>
4. Total Disbursements During Period	\$ 640,987	\$ 3,646	\$ 49,054	\$ 1,096,355	\$ 1,790,042
D. <u>Internal Transfer</u>	\$ (199,096)	\$ (9,492)	\$ 208,588	\$ 0	\$ 0
E. <u>Smoothed Value as of September 30, 2019</u>	\$16,512,687	\$ 532,384	\$ 2,377,554	\$26,368,672	\$45,791,297

**Actuarial Gain / (Loss) for  
Plan Year Ended September 30, 2019**

**(General Employees Tier 1)**

**A. Derivation of Actuarial Gain / (Loss)**

1. City normal cost previous actuarial impact statement	\$	102,247
2. Unfunded actuarial accrued liability previous actuarial impact statement		(2,062,225)
3. City contributions previous year		98,619
4. Interest on:		
(a) Normal cost	\$	7,541
(b) Unfunded actuarial accrued liability		(152,089)
(c) Contributions		3,637
(d) Net total: (a) + (b) - (c)	\$	(148,185)
5. Increase / (decrease) in actuarial accrued liability due to assumption changes	\$	(235,478)
6. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4. + 5.)	\$	(2,442,260)
7. Actual unfunded actuarial accrued liability current year		(3,231,427)
8. Actuarial gain / (loss): (6. - 7.)	\$	789,167

**B. Approximate Portion of Gain / (Loss)**

**Due to Investments**

1. Smoothed value of assets previous year	\$	15,312,080
2. Contributions during year		182,405
3. Benefits and admin expenses during year		640,987
4. Expected appreciation for period		1,112,356
5. Internal Transfer		(199,096)
6. Expected smoothed value of assets current year (1. + 2. - 3. + 4. + 5.)	\$	15,766,758
7. Actual smoothed value of assets current year		16,512,687
8. Approximate gain / (loss) due to investments: (7. - 6.)	\$	745,929

**C. Approximate Portion of Gain / (Loss)**

**Due to Liabilities: A. - B.**

\$ 43,238

**Actuarial Gain / (Loss) for  
Plan Year Ended September 30, 2019**

**(General Employees Tier 2)**

**A. Derivation of Actuarial Gain / (Loss)**

1. City normal cost previous actuarial impact statement	\$	65,041
2. Unfunded actuarial accrued liability previous actuarial impact statement		154,610
3. City contributions previous year		43,251
4. Interest on:		
(a) Normal cost	\$	4,797
(b) Unfunded actuarial accrued liability		11,402
(c) Contributions		1,595
(d) Net total: (a) + (b) - (c)		14,604
5. Increase / (decrease) in actuarial accrued liability due to assumption changes	\$	(11,531)
6. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4. + 5.)	\$	179,473
7. Actual unfunded actuarial accrued liability current year		42,750
8. Actuarial gain / (loss): (6. - 7.)	\$	136,723

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

1. Smoothed value of assets previous year	\$	249,600
2. Contributions during year		80,851
3. Benefits and admin expenses during year		3,646
4. Expected appreciation for period		21,255
5. Internal Transfer		(9,492)
6. Expected smoothed value of assets current year (1. + 2. - 3. + 4. + 5.)	\$	338,568
7. Actual smoothed value of assets current year		532,384
8. Approximate gain / (loss) due to investments: (7. - 6.)	\$	193,816

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

\$ (57,093)

Actuarial Gain / (Loss) for  
Plan Year Ended September 30, 2019

(AMSC)

A. Derivation of Actuarial Gain / (Loss)

1. City normal cost previous actuarial impact statement		\$	91,776
2. Unfunded actuarial accrued liability previous actuarial impact statement			1,377,914
3. City contributions previous year			76,251
4. Interest on:			
(a) Normal cost	\$	6,768	
(b) Unfunded actuarial accrued liability		101,621	
(c) Contributions		2,812	
(d) Net total: (a) + (b) - (c)			\$ 105,577
5. Increase / (decrease) in actuarial accrued liability due to assumption changes		\$	(65,723)
6. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4. + 5.)		\$	1,433,293
7. Actual unfunded actuarial accrued liability current year			926,912
8. Actuarial gain / (loss): (6. - 7.)		\$	506,381

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

1. Smoothed value of assets previous year		\$	1,284,535
2. Contributions during year			229,651
3. Benefits and admin expenses during year			49,054
4. Expected appreciation for period			101,394
5. Internal Transfer			208,588
6. Expected smoothed value of assets current year (1. + 2. - 3. + 4. + 5.)		\$	1,775,114
7. Actual smoothed value of assets current year			2,377,554
8. Approximate gain / (loss) due to investments: (7. - 6.)		\$	602,440

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

\$ (96,059)

Actuarial Gain / (Loss) for  
Plan Year Ended September 30, 2019

(Police Officers)

A. Derivation of Actuarial Gain / (Loss)

1. City normal cost previous actuarial impact statement		\$	388,002
2. Unfunded actuarial accrued liability previous actuarial impact statement			(31,531)
3. Contributions previous year			
(a) City	\$	449,028	
(b) State		37,780	
(c) Total		<u>          </u>	\$ 486,808
4. Interest on:			
(a) Normal cost	\$	28,615	
(b) Unfunded actuarial accrued liability		(2,325)	
(c) Contributions		17,254	
(d) Net total: (a) + (b) - (c)		<u>          </u>	\$ 9,036
5. Increase (decrease) in actuarial accrued liability due to assumption changes		\$	(797,068)
6. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4. + 5.)		\$	(918,369)
7. Actual unfunded actuarial accrued liability current year			(681,613)
8. Actuarial gain / (loss): (6. - 7.)		\$	<u>(236,756)</u>

B. Approximate Portion of Gain / (Loss)

Due to Investments

1. Smoothed value of assets previous year		\$	24,418,419
2. Contributions during year			1,235,070
3. Benefits and admin expenses during year			1,096,355
4. Expected appreciation for period			1,796,472
5. Expected smoothed value of assets current year (1. + 2. + 3. - 4. + 5.)		\$	<u>26,353,606</u>
6. Actual smoothed value of assets current year			<u>26,368,672</u>
7. Approximate gain / (loss) due to investments: (7. - 6.)		\$	15,066

C. Approximate Portion of Gain / (Loss)

Due to Liabilities: A. - B.

\$ (251,822)

## Amortization of Unfunded Actuarial Accrued Liability

A. 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, 2019	\$ (3,231,427)	\$ (296,135)	\$ 42,750	\$ 3,996
October 1, 2020	\$ (3,151,770)	\$ (296,135)	\$ 41,612	\$ 3,996
October 1, 2021	\$ (3,066,238)	\$ (296,135)	\$ 40,390	\$ 3,996
October 1, 2022	\$ (2,974,398)	\$ (296,135)	\$ 39,078	\$ 3,996
October 1, 2023	\$ (2,875,785)	\$ (296,135)	\$ 37,669	\$ 3,996
...				
October 1, 2044	\$ 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, 2019	\$ 926,912	\$ 79,080	\$ (681,613)	\$ (59,230)
October 1, 2020	\$ 910,360	\$ 79,080	\$ (668,284)	\$ (59,230)
October 1, 2021	\$ 892,587	\$ 79,080	\$ (653,972)	\$ (59,230)
October 1, 2022	\$ 873,503	\$ 79,080	\$ (638,604)	\$ (59,230)
October 1, 2023	\$ 853,012	\$ 79,080	\$ (622,103)	\$ (59,230)
...				
October 1, 2044	\$ 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, 2019	\$ 3,090,000	(5.7%)
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	N/A
10-Year Average Annual Increase		(0.3%)

## Accounting Disclosure Exhibit

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>I. <u>Number of Plan Members</u></b>				
a. Retirees and beneficiaries receiving benefits	48	48	49	49
b. Terminated Plan members entitled to deferred benefits	9	9	9	9
c. Active Plan members	107	119	103	103
d. Total	<u>164</u>	<u>176</u>	<u>161</u>	<u>161</u>
<b>II. <u>Financial Accounting Standards Board Allocation</u></b>				
<b><u>As of October 1, 2019</u></b>				
<b>A. <u>Statement of Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated vested Plan benefits				
a. Participants currently receiving benefits	\$ 19,386,460	\$ 19,386,460	\$ 20,633,948	\$ 20,022,890
b. Other participants	12,223,902	14,217,421	15,769,602	15,438,514
c. Total	<u>\$ 31,610,362</u>	<u>\$ 33,603,881</u>	<u>\$ 36,403,550</u>	<u>\$ 35,461,404</u>
2. Actuarial present value of accumulated non-vested Plan benefits				
	<u>\$ 3,134,126</u>	<u>\$ 2,506,083</u>	<u>\$ 2,018,468</u>	<u>\$ 1,955,704</u>
3. Total actuarial present value of accumulated Plan benefits				
	<u>\$ 34,744,488</u>	<u>\$ 36,109,964</u>	<u>\$ 38,422,018</u>	<u>\$ 37,417,108</u>
<b>B. <u>Statement of Change in Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated Plan benefits as of October 1, 2018				\$ 34,744,488
2. Increase / (decrease) during year attributable to:				
a. Plan amendments				\$ 1,365,476
b. Change in actuarial assumptions				(1,004,910)
c. Benefits paid				(1,660,970)
d. Other, including benefits accumulated, increase for interest due to decrease in the discount period				<u>3,973,024</u>
e. Net increase				<u>\$ 2,672,620</u>
3. Actuarial present value of accumulated plan benefits as of October 1, 2019				\$ 37,417,108
<b>C. <u>Significant Matters Affecting Calculations</u></b>				
1. Assumed rate of return used in determining actuarial present value				7.375%
2. Change in Plan provisions				See Table IX., Item O.
3. Change in actuarial assumptions				See Table X., Item M.

Accounting Disclosure Exhibit

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

Measurement Date	9/30/2014 <sup>1</sup>	9/30/2015 <sup>1</sup>	9/30/2016	9/30/2017	9/30/2018	9/30/2019	Projected 9/30/2020 <sup>2</sup>
<b>A. Total Pension Liability (TPL)</b>							
Service Cost	\$ 669,181	\$ 686,435	\$ 697,537	\$ 846,884	\$ 796,141	\$ 842,564	\$ 852,115
Interest	2,299,340	2,381,731	2,460,415	2,630,646	2,834,288	2,889,649	3,152,405
Benefit Changes	0	0	0	(20,122)	0	0	2,209,880
Difference Between Actual and Expected Experience	(598,374)	(502,259)	(656,677)	(112,807)	901,489	(1,314,061)	506,992
Assumption Changes	0	0	0	566,118	0	0	(1,109,800)
Benefit Payments, including Refunds of Member Contributions	(1,315,113)	(1,417,586)	(1,293,782)	(1,570,751)	(1,563,305)	(1,660,970)	(1,911,124)
<b>Net Change in Total Pension Liability</b>	<b>\$ 1,055,034</b>	<b>\$ 1,148,321</b>	<b>\$ 1,207,493</b>	<b>\$ 2,339,968</b>	<b>\$ 2,968,613</b>	<b>\$ 757,182</b>	<b>\$ 3,700,468</b>
<b>Total Pension Liability (TPL) - (beginning of year)</b>	<b>31,764,236</b>	<b>32,819,270</b>	<b>33,967,591</b>	<b>35,175,084</b>	<b>37,515,052</b>	<b>40,483,665</b>	<b>41,240,847</b>
<b>Total Pension Liability (TPL) - (end of year)</b>	<b>\$ 32,819,270</b>	<b>\$ 33,967,591</b>	<b>\$ 35,175,084</b>	<b>\$ 37,515,052</b>	<b>\$ 40,483,665</b>	<b>\$ 41,240,847</b>	<b>\$ 44,941,315</b>
<b>B. Plan Fiduciary Net Position</b>							
Contributions - City and State	\$ 878,217	\$ 834,251	\$ 570,154	\$ 681,713	\$ 690,632	\$ 704,929	\$ 677,223
Contributions - Member	593,396	562,835	490,452	910,127	536,473	594,753	444,127
Net Investment Income	3,054,164	16,750	3,306,002	4,542,693	3,984,542	868,406	3,255,761
Benefit Payments, including Refunds of Member Contributions	(1,315,113)	(1,417,586)	(1,293,782)	(1,570,751)	(1,563,305)	(1,660,970)	(1,911,124)
Administrative Expenses	(100,780)	(135,093)	(129,291)	(163,555)	(139,324)	(129,072)	(129,072)
Other	6,784	4,454	2,835	0	260,999	49,243	1,917,344
<b>Net Change in Plan Fiduciary Net Position</b>	<b>\$ 3,116,668</b>	<b>\$ (134,389)</b>	<b>\$ 2,946,370</b>	<b>\$ 4,400,227</b>	<b>\$ 3,770,017</b>	<b>\$ 427,289</b>	<b>\$ 4,254,259</b>
<b>Plan Fiduciary Net Position - (beginning of year)</b>	<b>29,120,485</b>	<b>32,237,153</b>	<b>32,102,764</b>	<b>35,049,134</b>	<b>39,449,361</b>	<b>43,219,378</b>	<b>43,646,667</b>
<b>Plan Fiduciary Net Position - (end of year)</b>	<b>\$ 32,237,153</b>	<b>\$ 32,102,764</b>	<b>\$ 35,049,134</b>	<b>\$ 39,449,361</b>	<b>\$ 43,219,378</b>	<b>\$ 43,646,667</b>	<b>\$ 47,900,926</b>
<b>C. Net Pension Liability (NPL) - (end of year): (A) - (B)</b>	<b>\$ 582,117</b>	<b>\$ 1,864,827</b>	<b>\$ 125,950</b>	<b>\$ (1,934,309)</b>	<b>\$ (2,735,713)</b>	<b>\$ (2,405,820)</b>	<b>\$ (2,959,611)</b>
<b>D. Plan Fiduciary Net Position as a Percentage of TPL: (B) / (A)</b>	<b>98.23 %</b>	<b>94.51 %</b>	<b>99.64 %</b>	<b>105.16 %</b>	<b>106.76 %</b>	<b>105.83 %</b>	<b>106.59 %</b>
<b>E. Covered Employee Payroll<sup>3</sup></b>	<b>\$ 4,902,128</b>	<b>\$ 4,086,300</b>	<b>\$ 4,861,991</b>	<b>\$ 6,368,739</b>	<b>\$ 6,447,564</b>	<b>\$ 6,840,856</b>	<b>\$ 6,857,483</b>
<b>F. NPL as a Percentage of Covered Employee Payroll: (C) / (E)</b>	<b>11.87 %</b>	<b>45.64 %</b>	<b>2.59 %</b>	<b>(30.37)%</b>	<b>(42.43)%</b>	<b>(35.17)%</b>	<b>(43.16)%</b>
<b>G. Notes to Schedule:</b>							
Valuation Date	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019
Reporting Date (GASB No. 68)	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019	9/30/2020	9/30/2021

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, 2019.

<sup>1</sup> As Reported in Plan's financial statements

<sup>2</sup> Projected - actual amounts will be available after fiscal year end

<sup>3</sup> 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)

Fiscal Year End 9/30	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll <sup>1,2</sup>	Actual Contribution as a % of Covered Payroll
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	704,929	704,929	0	6,840,856	10.30%
2020 <sup>3</sup>	677,223	677,223	0	6,857,483	9.88%

<sup>1</sup> Projected prior to fiscal year ended September 30, 2014

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

<sup>3</sup> 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, 2020:**

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 (1.4%) 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, 2019

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.375%	7.375%	8.375%
NPL	\$ 3,278,335	\$ (2,405,820)	\$ (7,043,835)

Measurement date: September 30, 2020 \*

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.375%	7.375%	8.375%
NPL	\$ 3,129,879	\$ (2,959,611)	\$ (7,944,134)

\* 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, 2020 \$ (94,493)

Summary of Outstanding Deferred Inflows and Outflows of Resources as of September 30, 2020

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between actual and expected experience on liabilities	\$ 561,305	\$ 1,322,994
Changes of assumptions or other inputs	251,607	0
Net difference between projected and actual earnings on pension Plan investments	<u>216,803</u>	<u>0</u>
Total	<u>\$ 1,029,715</u>	<u>\$ 1,322,994</u>

Projected Deferred Outflows for City Contributions to Be Recognized in Pension Expense for Fiscal Year Ending September 30, 2021 \$ 597,995

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>
2021	\$ (502,470)
2022	(179,743)
2023	199,669
2024	263,646
2025	(74,381)
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	9/30/2014	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019	Projected 9/30/2020 *
Service Cost	\$ 669,181	\$ 686,435	\$ 697,537	\$ 846,884	\$ 796,141	\$ 842,564	\$ 852,115
Interest on Total Pension Liability	2,299,340	2,381,731	2,460,415	2,630,646	2,834,288	2,889,649	3,152,405
Current-Period Benefit Changes	0	0	0	(20,122)	0	0	2,209,880
Contributions - Member	(593,396)	(562,835)	(490,452)	(910,127)	(536,473)	(594,753)	(444,127)
Projected Earnings on Plan Investments	(2,149,941)	(2,371,917)	(2,354,317)	(2,579,620)	(2,901,480)	(3,171,163)	(3,255,761)
Administrative Expenses	100,780	135,093	129,291	163,555	139,324	129,072	129,072
Other Changes in Plan Fiduciary Net Position	(6,784)	(4,454)	(2,835)	0	(260,999)	(49,243)	(1,917,344)
Recognition of Beginning Deferred Outflows / (Inflows) due to Liabilities	(106,853)	(198,173)	(322,074)	(238,127)	(68,035)	(273,227)	(281,655)
Recognition of Beginning Deferred Outflows / (Inflows) due to Assets	(193,020)	278,602	88,265	(304,350)	(520,961)	132,608	(339,013)
Total Pension Expense	\$ 19,307	\$ 344,482	\$ 205,830	\$ (411,261)	\$ (518,195)	\$ (94,493)	\$ 105,572

\* 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 9/30/2019	Recognition Amount for 2018 / 2019	Balance as of 9/30/2019
2013 / 2014	\$ 0	5.6	0.0	\$ 0	\$ 0
2014 / 2015	0	5.5	0.5	0	0
2015 / 2016	0	5.3	1.3	0	0
2016 / 2017	0	5.4	2.4	0	0
2017 / 2018	901,489	5.3	3.3	170,092	561,305
2018 / 2019	0	5.3	4.3	0	0
TOTAL				\$ 170,092	\$ 561,305

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 9/30/2019	Recognition Amount for 2018 / 2019	Balance as of 9/30/2019
2013 / 2014	\$ (598,374)	5.6	0.0	\$ (64,109)	\$ 0
2014 / 2015	(502,259)	5.5	0.5	(91,320)	(45,659)
2015 / 2016	(656,677)	5.3	1.3	(123,901)	(161,073)
2016 / 2017	(112,807)	5.4	2.4	(20,890)	(50,137)
2017 / 2018	0	5.3	3.3	0	0
2018 / 2019	(1,314,061)	5.3	4.3	(247,936)	(1,066,125)
TOTAL				\$ (548,156)	\$ (1,322,994)

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

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2019	Recognition Amount for 2018 / 2019	Balance as of 9/30/2019
2013 / 2014	\$ 0	5.6	0.0	\$ 0	\$ 0
2014 / 2015	0	5.5	0.5	0	0
2015 / 2016	0	5.3	1.3	0	0
2016 / 2017	566,118	5.4	2.4	104,837	251,607
2017 / 2018	0	5.3	3.3	0	0
2018 / 2019	0	5.3	4.3	0	0
TOTAL				\$ 104,837	\$ 251,607

**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 9/30/2019	Recognition Amount for 2018 / 2019	Balance as of 9/30/2019
2013 / 2014	\$ 0	5.6	0.0	\$ 0	\$ 0
2014 / 2015	0	5.5	0.5	0	0
2015 / 2016	0	5.3	1.3	0	0
2016 / 2017	0	5.4	2.4	0	0
2017 / 2018	0	5.3	3.3	0	0
2018 / 2019	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 9/30/2019	Recognition Amount for 2018 / 2019	Balance as of 9/30/2019
2014 / 2015	\$ 2,358,109	5	0	\$ 471,621	\$ 0
2015 / 2016	(951,685)	5	1	(190,337)	(190,337)
2016 / 2017	(1,963,073)	5	2	(392,615)	(785,228)
2017 / 2018	(1,083,062)	5	3	(216,612)	(649,838)
2018 / 2019	2,302,757	5	4	460,551	1,842,206
TOTAL				\$ 132,608	\$ 216,803

## Outline of Principal Provisions of the Retirement Plan

### A. Effective Date:

October 1, 1965. Most recently amended by Ordinance 38-19-2351 adopted December 3, 2019.

### 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 September 20, 2016 is eligible to enter the Plan as a Tier 2 employee as of October 1, 2016.

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.

Any regular full-time employee who previously entered into the Defined Contribution (DC) Plan may opt-out of the DC Plan and elect to join the Plan as a Tier 2 member or as their respective classification at the time they elect to join the Plan during an annual open enrollment period.

#### 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	Chief Administrative Officer (currently Finance Office Manager)
City Attorney	Chief Procurement Officer (currently Purchasing Manager)
City Clerk	Parks and Recreation Director
Assistant / Deputy City Manager	Assistant Director of Parks and Recreation
Finance Director / Chief Financial Officer	Community Redevelopment Agency Director
Chief of Police	Personnel Manager
Planning and Zoning Director	Project Manager
Building Director	Special Assistant to the Manager
Director of Public Works	Superintendent of Maintenance

## 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 date of Plan entry election date 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 55 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 60 and completion of five (5) 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. <u>General Employees</u>	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%.

No cost-of-living supplemental benefit is provided for Tier 2 General Employees and AMSC members who retired or entered the DROP prior to October 1, 2019. No cost-of-living supplemental benefit is provided on the portion of the benefit accrued after September 30, 2011 for Tier 1 General Employees who retired or entered the DROP prior to October 1, 2019.

G. Early Retirement:

1. Eligibility:

- a. Police Officers: Attainment of age 50 and completion of 10 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.
- 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.

**Outline of Principal Provisions of the Retirement Plan**

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.

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 5	0%
5 or more years	100%

AMSC members who have completed three (3) years of continuous Credited Service as of as of June 18, 2019 are 100% vested.

Outline of Principal Provisions of the Retirement Plan

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

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%.

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. Deferred Retirement Option Plan (DROP):

1. Eligibility: Attainment of normal retirement date.
2. The maximum period of participation in the DROP is sixty (60) months.
3. A member's account in the DROP shall be credited monthly with interest in an amount equal to 50% of the net (gross return minus investment expense) yearly interest earned by the Plan for the preceding fiscal year, up to a maximum of 5% and a minimum of 0%.
4. No payment may be made from the DROP until the member actually separates from service with the City. The DROP account balance may be distributed in a lump sum, periodic payments, an annuity or a combination thereof.

O. Changes Since Previous Actuarial Valuation (included in Actuarial Impact Statement):

1. Eligibility Requirements were:

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.

Outline of Principal Provisions of the Retirement Plan

O. Changes Since Previous Actuarial Valuation (included in Actuarial Impact Statement) (cont'd):

1. Eligibility Requirements were (cont'd):

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

2. Police Officers Normal Retirement Eligibility was:

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.

3. AMSC Normal Retirement Eligibility was:

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.

4. Supplemental Benefit was:

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.

5. Police Officers Early Retirement Eligibility was:

Attainment of age 50 and completion of 15 years of Credited Service.

6. AMSC Vesting Schedule was:

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

7. Police Officers Contributions were:

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.

**Actuarial Assumptions and Methods  
Used in the Valuation**

A. Mortality

General Employees including AMSC Mortality Assumptions:

For healthy participants during employment, PUB-2010 Headcount Weighted General Below Median Employee Mortality Table, separate rates for males and females, set back 1 year for males, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

For healthy participants post employment, PUB-2010 Headcount Weighted General Below Median Healthy Retiree Mortality Table, separate rates for males and females, set back 1 year for males, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

For disabled participants, PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table, separate rates for males and females, both set forward 3 years, without projected mortality improvements.

Sample Ages (2019)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.50	34.95	28.53
60	27.66	29.93	24.46	27.77
62	25.78	27.96	22.85	25.95

  

Sample Ages (2039)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	34.14	36.43	30.54
60	29.22	31.36	26.31	29.42
62	27.29	29.36	24.63	27.55

Police Officer Mortality Assumptions:

For healthy participants during employment, PUB-2010 Headcount Weighted Safety Employee Female Mortality Table and Safety Below Median Employee Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

For healthy participants post employment, PUB-2010 Headcount Weighted Safety Healthy Retiree Female Mortality Table and Safety Below Median Healthy Retiree Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-

For disabled participants, 80% PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table / 20% PUB-2010 Headcount Weighted Safety Disabled Retiree Mortality Table, separate rates for males and females, without projected mortality improvements.

**Actuarial Assumptions and Methods  
Used in the Valuation**

A. Mortality (cont'd)

Police Officer Mortality Assumptions (cont'd):

Sample Ages (2019)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	30.37	34.25	27.50
60	25.43	29.19	22.93	26.31
62	23.51	27.18	21.21	24.48

  

Sample Ages (2039)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.00	35.73	29.39
60	27.00	30.63	24.70	28.04
62	25.04	28.60	22.92	26.16

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:

Service	Withdrawal Rates Per 100 Employees	
	Police	General / AMSC
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.

Actuarial Assumptions and Methods  
Used in the Valuation

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%

H. Increase in Covered Payroll

4.0% per year, limited to average annual increase over most recent ten years (-0.3%) 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.

<u>Years Preceding</u>	<u>Police</u>
<u>Normal Retirement</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 *</u>	<u>AMSC **</u>
55 - 59	25%	10%	10%
60 - 61	25%	10%	25%
62 - 64	40%	25%	35%
65 - 66	100%	25%	35%
67 & above	100%	100%	100%

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

\* Rates are 25% for Tier 2 members for each year upon meeting 33 years of service until 100% at age 67.

\*\* Includes Early Retirement. Rates are 25% below the age of 62 and 35% between the ages of 62 and 66 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.

**Actuarial Assumptions and Methods  
Used in the Valuation**

J. Cost of Living Increases

Future cost of living increases for General Employees (including Tier 1 and Tier 2 General Employees), AMSC 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.

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

1. Mortality was:

General 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.

Actuarial Assumptions and Methods  
Used in the Valuation

M. Changes Since Previous Actuarial Valuation (cont'd)

1. Mortality was (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.

2. Police Officers and AMSC Retirement Rates were (changes included in Actuarial Impact Statement):

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

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

Service	Police
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.

3. Cost of Living Increases were (changes included in Actuarial Impact Statement):

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.



Distribution by Attained Age Groups  
and Service Groups as of October 1, 2019

Police Officers

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 &amp; Over</u>	
Under 25	1	-	-	-	-	-	-	1
25 - 29	7	1	-	-	-	-	-	8
30 - 34	2	1	2	-	-	-	-	5
35 - 39	1	-	7	-	-	-	-	8
40 - 44	1	-	-	1	-	-	-	2
45 - 49	1	-	-	2	1	1	-	5
50 - 54	2	-	3	-	2	-	-	7
55 - 59	2	1	1	-	2	-	-	6
60 - 64	-	-	1	-	-	-	-	1
65 & Over	-	-	-	-	-	-	-	0
TOTAL	17	3	14	3	5	1	0	43

	<u>October 1, 2018</u>	<u>October 1, 2019</u>
Average Attained Age	41.43 years	41.86 years
Average Hire Age	32.08 years	31.33 years
Average Pay	\$ 65,504	\$ 71,860
Percent Female	16.0%	18.6%

**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	60,308	20,103
55 - 59	2	25,103	12,552
60 - 64	-	-	-
65 & Over	-	-	-
TOTAL	<u>10 *</u>	<u>\$ 205,220</u>	<u>\$ 20,522</u>

**B. Receiving Benefits (including DROP participants)**

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	-	\$ -	\$ -
50 - 54	2	82,927	41,464
55 - 59	8	310,785	38,848
60 - 64	7	263,712	37,673
65 - 69	12	293,156	24,430
70 - 74	11	405,294	36,845
75 - 79	5	184,436	36,887
80 - 84	2	45,178	22,589
85 - 89	1	14,497	14,497
90 & Over	1	10,056	10,056
TOTAL	<u>49</u>	<u>\$ 1,610,041</u>	<u>\$ 32,858</u>

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

## Reconciliation of Employee Data

General Employees (including AMSC)

A. <u>Active Participants</u>	
1. Active participants previous year	57
2. Retired during period	0
3. Entered DROP during period	(1)
4. Died during period	0
5. Disabled during period	0
6. Terminated during period	(3)
7. New active participants	3
8. Re-instated during period	0
9. Transfer to Police	0
10. Transfer from 401(k) Plan	4
11. Adjustments	0
12. Active participants current year	<u>60</u>
B. <u>Participants Receiving Benefits</u>	
1. Participants receiving benefits previous year	27
2. New retired participants	0
3. Former DROPs now receiving benefits	0
4. New terminated vested receiving benefits	0
5. New disabled receiving benefits	0
6. New beneficiaries receiving benefits	0
7. Died or ceased payment during period	(1)
8. Adjustments	0
9. Retired or terminated vested receiving benefits current year	<u>26</u>
C. <u>DROP Participants</u>	
1. DROP participants previous year	0
2. Died during year	0
3. Became disabled during year	0
4. Employment terminated and retired during year	0
5. Entered DROP during year	1
6. DROP participants current year	<u>1</u>
D. <u>Terminated Vested Participants Entitled to Future Benefits</u>	
1. Terminated vested entitled previous year	4
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>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	50
2. Retired during period	(1)
3. Entered DROP during period	(1)
4. Died during period	0
5. Disabled during period	0
6. Terminated during period	(8)
7. New active participants	3
8. Re-instated during period	0
9. Transfer from General	0
10. Active participants current year	<u>43</u>
B. <u>Participants Receiving Benefits</u>	
1. Participants receiving benefits previous year	21
2. New retired participants	1
3. Former DROPs now receiving benefits	0
4. New terminated vested receiving benefits	0
5. New disabled receiving benefits	0
6. New beneficiaries receiving benefits	0
7. Died or ceased payment during period	(1)
8. Adjustments	0
9. Retired or terminated vested receiving benefits current year	<u>21</u>
C. <u>DROP Participants</u>	
1. DROP participants previous year	0
2. Died during year	0
3. Became disabled during year	0
4. Employment terminated and retired during year	0
5. Entered DROP during year	1
6. DROP participants current year	<u>1</u>
D. <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>
2020	\$ 1,997,411
2021	\$ 2,144,375
2022	\$ 2,335,808
2023	\$ 2,502,927
2024	\$ 2,663,808
2025	\$ 2,794,304
2026	\$ 3,009,070
2027	\$ 3,116,268
2028	\$ 3,211,672
2029	\$ 3,364,827

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 <sup>1</sup>		
	% 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					
10/01/2019	4.1%	4.7%	11.1%	4.3%	0.8	2.4	7.398%	2.011%	7.375%
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%
Last 3 Years	4.3%	4.6%	3.8%	4.4%	0.7	1.6	8.645%	8.274%	7.375%
Last 5 Years	4.6%	4.7%	3.1%	4.4%	0.9	1.3	8.790%	6.984%	7.375%
Last 10 Years	2.8%	5.3%	1.9%	4.7%	1.0	0.9	6.9%	8.2%	7.3%

<sup>1</sup> 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	Other / Transfers	Market Value
10/01/2019	\$ 1,660,970	\$ 304,351	\$ 1,299,682	\$ 1,043,685	\$ 1,917,344	\$ 45,564,011
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

## Employer Contribution Information

Valuation Date	Contribution Fiscal Year End	Minimum Required Employer Contributions	Actual City Contributions	Actual State Contributions	Actual Employer Contributions
10/01/2019	09/30/2021	\$ 631,727	N/A	N/A	N/A
10/01/2018	09/30/2020	\$ 677,223	N/A	N/A	N/A
10/01/2017	09/30/2019	\$ 704,929	\$ 667,149	\$ 37,780	\$ 704,929
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

\* State contribution in the amount of \$37,780 included in the City contribution as receivable

## Actuarial Valuation as of October 1, 2019

## State Required Exhibit

(General Employees Tier 1)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>A. <u>Participant Data</u></b>				
1. Active participants	22	21	20	20
2. Retired participants and beneficiaries receiving benefits	25	25	25	25
3. Disabled participants receiving benefits	0	0	0	0
4. Terminated vested participants	4	4	4	4
5. Annual payroll of active participants	\$ 1,197,748	\$ 1,121,870	\$ 1,093,727	\$ 1,093,727
6. Expected payroll of active employees for the following year	\$ 1,197,748	\$ 1,121,870	\$ 1,093,727	\$ 1,093,727
7. Annual benefits payable to those currently receiving benefits	\$ 600,408	\$ 600,408	\$ 631,892	\$ 631,892
<b>B. <u>Assets</u></b>				
1. Market Value of Assets	\$ 16,078,824	\$ 15,884,043	\$ 16,484,050	\$ 16,484,050
2. Smoothed Value of Assets	\$ 15,312,080	\$ 15,117,299	\$ 16,512,687	\$ 16,512,687
<b>C. <u>Liabilities</u></b>				
1. Actuarial present value of future expected benefit payments for active members				
a. Retirement benefits	\$ 4,488,908	\$ 5,060,560	\$ 5,103,431	\$ 5,023,317
b. Vesting benefits	431,082	353,653	328,450	319,304
c. Death benefits	33,452	31,494	31,780	23,295
d. Disability benefits	262,699	277,694	280,270	286,260
e. Refunds	10,400	10,400	3,201	3,201
f. Total	\$ 5,226,541	\$ 5,733,801	\$ 5,747,132	\$ 5,655,377
2. Actuarial present value of future expected benefit payments for terminated vested members				
	\$ 673,794	\$ 673,794	\$ 724,284	\$ 701,986
3. Actuarial present value of future expected benefit payments for members currently receiving benefits				
a. Service retired	\$ 7,106,729	\$ 7,106,729	\$ 7,450,121	\$ 7,321,411
b. Disability retired	0	0	0	0
c. Beneficiaries	176,438	176,438	174,543	171,340
d. Miscellaneous	83,178	83,178	83,178	83,178
e. Total	\$ 7,366,345	\$ 7,366,345	\$ 7,707,842	\$ 7,575,929

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(General Employees Tier 1)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
4. Total actuarial present value of future expected benefit payments	\$ 13,266,680	\$ 13,773,940	\$ 14,179,258	\$ 13,933,292
5. Actuarial accrued liabilities	\$ 12,587,522	\$ 13,055,074	\$ 13,516,738	\$ 13,281,260
6. Unfunded actuarial accrued liabilities	\$ (2,724,558)	\$ (2,062,225)	\$ (2,995,949)	\$ (3,231,427)
<b>D. <u>Statement of Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated vested benefits				
a. Participants currently receiving benefits	\$ 7,283,167	\$ 7,283,167	\$ 7,624,664	\$ 7,492,751
b. Other participants	4,114,127	4,232,720	4,434,714	4,353,699
c. Total	<u>\$ 11,397,294</u>	<u>\$ 11,515,887</u>	<u>\$ 12,059,378</u>	<u>\$ 11,846,450</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>242,158</u>	<u>335,122</u>	<u>223,002</u>	<u>214,912</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 11,639,452	\$ 11,851,009	\$ 12,282,380	\$ 12,061,362
<b>E. <u>Statement of Change in Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated Plan benefits as of October 1, 2018				\$ 11,639,452
2. Increase (decrease) during period attributable to:				
a. Plan amendment				\$ 211,557
b. Change in actuarial assumptions				(221,018)
c. Benefits paid				(593,358)
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period				<u>1,024,729</u>
e. Net increase				\$ 421,910
3. Actuarial present value of accumulated Plan benefits as of October 1, 2019				\$ 12,061,362

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(General Employees Tier 1)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>F. Pension Cost</b>				
1. Total normal cost (including administrative expenses)	\$ 172,241	\$ 180,778	\$ 164,808	\$ 162,697
2. Payment required to amortize unfunded liability	(246,945)	(192,213)	(276,676)	(296,135)
3. Interest adjustment	(2,657)	(407)	(3,978)	(4,745)
4. Total preliminary required contribution	\$ (77,361)	\$ (11,842)	\$ (115,846)	\$ (138,183)
5. Total required contribution	\$ 172,241	\$ 180,778	\$ 164,808	\$ 162,697
6. Item 5 as a percentage of payroll	14.4%	16.1%	15.1%	14.9%
7. Estimated member contributions	\$ 83,842	\$ 78,531	\$ 76,561	\$ 76,561
8. Item 7 as a percentage of payroll	7.0%	7.0%	7.0%	7.0%
9. Estimated State contributions	\$ 0	\$ 0	\$ 0	\$ 0
10. Item 9 as a percentage of payroll	0.0%	0.0%	0.0%	0.0%
11. Net amount payable by City	\$ 88,399	\$ 102,247	\$ 88,247	\$ 86,136
12. Item 11 as a percentage of payroll	7.4%	9.1%	8.1%	7.9%
<b>G. Past Contributions</b>				
1. Total contribution required (prior year's valuation)	\$ 182,405	\$ 182,405	\$ 172,241	\$ 172,241
2. Actual contributions made:				
a. Members	\$ 83,786	\$ 83,786	N/A	N/A
b. State	N/A	N/A	N/A	N/A
c. City	98,619	98,619	N/A	N/A
d. Total	\$ 182,405	\$ 182,405	N/A	N/A
<b>H. Net Actuarial Gain / (Loss)</b>				
	\$ 1,290,160	\$ 1,290,160	\$ 789,167	\$ 789,167
<b>I. Disclosure of Following Items:</b>				
1. Actuarial present value of future salaries - attained age	\$ 7,930,096	\$ 7,188,706	\$ 6,908,694	\$ 6,928,689
2. Actuarial present value of future employee contributions - attained age	\$ 555,107	\$ 503,209	\$ 483,609	\$ 485,008
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 1,338,844	\$ 1,272,872	\$ 1,272,820	\$ 1,272,820
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A	N/A

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(General Employees Tier 2)

	<u>Actuarial Valuation 10/01/2018</u>	<u>Actuarial Impact Statement 10/01/2018</u>	<u>Prior Assumptions 10/01/2019</u>	<u>Current Assumptions 10/01/2019</u>
<b>A. <u>Participant Data</u></b>				
1. Active participants	27	34	28	28
2. Retired participants and beneficiaries receiving benefits	0	0	0	0
3. Disabled participants receiving benefits	0	0	0	0
4. Terminated vested participants	0	0	0	0
5. Annual payroll of active participants	\$ 1,197,564	\$ 1,480,965	\$ 1,283,674	\$ 1,283,674
6. Expected payroll of active employees for the following year	\$ 1,197,564	\$ 1,480,965	\$ 1,283,674	\$ 1,283,674
7. Annual benefits payable to those currently receiving benefits	\$ 0	\$ 0	\$ 0	\$ 0
<b>B. <u>Assets</u></b>				
1. Market Value of Assets	\$ 254,856	\$ 251,001	\$ 524,022	\$ 524,022
2. Smoothed Value of Assets	\$ 249,600	\$ 245,745	\$ 532,384	\$ 532,384
<b>C. <u>Liabilities</u></b>				
1. Actuarial present value of future expected benefit payments for active members				
a. Retirement benefits	\$ 625,233	\$ 913,225	\$ 958,059	\$ 945,276
b. Vesting benefits	244,558	293,185	282,640	272,503
c. Death benefits	8,715	9,811	9,589	7,246
d. Disability benefits	56,674	74,159	75,740	76,998
e. Refunds	29,101	26,732	27,524	27,536
f. Total	<u>\$ 964,281</u>	<u>\$ 1,317,112</u>	<u>\$ 1,353,552</u>	<u>\$ 1,329,559</u>
2. Actuarial present value of future expected benefit payments for terminated vested members				
	\$ 0	\$ 0	\$ 0	\$ 0
3. Actuarial present value of future expected benefit payments for members currently receiving benefits				
a. Service retired	\$ 0	\$ 0	\$ 0	\$ 0
b. Disability retired	0	0	0	0
c. Beneficiaries	0	0	0	0
d. Miscellaneous	1,256	1,256	3,551	3,551
e. Total	<u>\$ 1,256</u>	<u>\$ 1,256</u>	<u>\$ 3,551</u>	<u>\$ 3,551</u>

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(General Employees Tier 2)

	<u>Actuarial Valuation 10/01/2018</u>	<u>Actuarial Impact Statement 10/01/2018</u>	<u>Prior Assumptions 10/01/2019</u>	<u>Current Assumptions 10/01/2019</u>
4. Total actuarial present value of future expected benefit payments	\$ 965,537	\$ 1,318,368	\$ 1,357,103	\$ 1,333,110
5. Actuarial accrued liabilities	\$ 330,454	\$ 400,355	\$ 586,665	\$ 575,134
6. Unfunded actuarial accrued liabilities	\$ 80,854	\$ 154,610	\$ 54,281	\$ 42,750
 <b>D. <u>Statement of Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated vested benefits				
a. Participants currently receiving benefits	\$ 0	\$ 0	\$ 0	\$ 0
b. Other participants	122,608	123,082	168,178	165,210
c. Total	<u>\$ 122,608</u>	<u>\$ 123,082</u>	<u>\$ 168,178</u>	<u>\$ 165,210</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>36,624</u>	<u>59,987</u>	<u>88,043</u>	<u>85,833</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 159,232	\$ 183,069	\$ 256,221	\$ 251,043
 <b>E. <u>Statement of Change in Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated Plan benefits as of October 1, 2018				\$ 159,232
2. Increase (decrease) during period attributable to:				
a. Plan amendment				\$ 23,837
b. Change in actuarial assumptions				(5,178)
c. Benefits paid				(2,500)
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period				<u>75,652</u>
e. Net increase				\$ 91,811
3. Actuarial present value of accumulated Plan benefits as of October 1, 2019				\$ 251,043

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(General Employees Tier 2)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>F. Pension Cost</b>				
1. Total normal cost (including administrative expenses)	\$ 76,281	\$ 109,470	\$ 93,477	\$ 91,809
2. Payment required to amortize unfunded liability	6,844	12,939	4,949	3,996
3. Interest adjustment	2,956	3,551	3,501	3,408
4. Total preliminary required contribution	\$ 86,081	\$ 125,960	\$ 101,927	\$ 99,213
5. Total required contribution	\$ 86,081	\$ 125,960	\$ 101,927	\$ 99,213
6. Item 5 as a percentage of payroll	7.2%	8.5%	7.9%	7.7%
7. Estimated member contributions	\$ 35,927	\$ 44,429	\$ 38,510	\$ 38,510
8. Item 7 as a percentage of payroll	3.0%	3.0%	3.0%	3.0%
9. Estimated State contributions	\$ 0	\$ 0	\$ 0	\$ 0
10. Item 9 as a percentage of payroll	0.0%	0.0%	0.0%	0.0%
11. Net amount payable by City	\$ 50,154	\$ 81,531	\$ 63,417	\$ 60,703
12. Item 11 as a percentage of payroll	4.2%	5.5%	4.9%	4.7%
<b>G. Past Contributions</b>				
1. Total contribution required (prior year's valuation)	\$ 80,851	\$ 80,851	\$ 86,081	\$ 86,081
2. Actual contributions made:				
a. Members	\$ 37,600	\$ 37,600	N/A	N/A
b. State	N/A	N/A	N/A	N/A
c. City	43,251	43,251	N/A	N/A
d. Total	\$ 80,851	\$ 80,851	N/A	N/A
<b>H. Net Actuarial Gain / (Loss)</b>	\$ (19,733)	\$ (19,733)	\$ 136,723	\$ 136,723
<b>I. Disclosure of Following Items:</b>				
1. Actuarial present value of future salaries - attained age	\$ 10,748,040	\$ 13,353,995	\$ 11,562,922	\$ 11,589,146
2. Actuarial present value of future employee contributions - attained age	\$ 322,441	\$ 400,620	\$ 346,888	\$ 347,674
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 140,229	\$ 138,550	\$ 169,606	\$ 169,606
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A	N/A

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(AMSC)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>A. Participant Data</b>				
1. Active participants	8	14	12	12
2. Retired participants and beneficiaries receiving benefits	2	2	2	2
3. Disabled participants receiving benefits	0	0	0	0
4. Terminated vested participants	0	0	0	0
5. Annual payroll of active participants	\$ 1,004,692	\$ 1,543,275	\$ 1,390,082	\$ 1,390,082
6. Expected payroll of active employees for the following year	\$ 1,004,692	\$ 1,543,275	\$ 1,390,082	\$ 1,390,082
7. Annual benefits payable to those currently receiving benefits	\$ 44,009	\$ 44,009	\$ 44,460	\$ 44,460
<b>B. Assets</b>				
1. Market Value of Assets	\$ 1,326,846	\$ 1,525,482	\$ 2,352,072	\$ 2,352,072
2. Smoothed Value of Assets	\$ 1,284,535	\$ 1,483,171	\$ 2,377,554	\$ 2,377,554
<b>C. Liabilities</b>				
1. Actuarial present value of future expected benefit payments for active members				
a. Retirement benefits	\$ 1,812,040	\$ 2,808,983	\$ 3,208,019	\$ 3,152,045
b. Vesting benefits	212,159	466,182	476,741	460,403
c. Death benefits	12,036	14,357	13,728	10,721
d. Disability benefits	69,628	113,068	120,889	123,794
e. Refunds	1,875	807	10,209	10,211
f. Total	\$ 2,107,738	\$ 3,403,397	\$ 3,829,586	\$ 3,757,174
2. Actuarial present value of future expected benefit payments for terminated vested members				
	\$ 0	\$ 0	\$ 0	\$ 0
3. Actuarial present value of future expected benefit payments for members currently receiving benefits				
a. Service retired	\$ 425,408	\$ 425,408	\$ 417,026	\$ 405,834
b. Disability retired	0	0	0	0
c. Beneficiaries	0	0	0	0
d. Miscellaneous	0	0	0	0
e. Total	\$ 425,408	\$ 425,408	\$ 417,026	\$ 405,834

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(AMSC)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
4. Total actuarial present value of future expected benefit payments	\$ 2,533,146	\$ 3,828,805	\$ 4,246,612	\$ 4,163,008
5. Actuarial accrued liabilities	\$ 1,959,405	\$ 2,861,085	\$ 3,370,189	\$ 3,304,466
6. Unfunded actuarial accrued liabilities	\$ 674,870	\$ 1,377,914	\$ 992,635	\$ 926,912
<b>D. <u>Statement of Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated vested benefits				
a. Participants currently receiving benefits	\$ 425,408	\$ 425,408	\$ 417,026	\$ 405,834
b. Other participants	980,346	1,374,684	1,858,934	1,827,574
c. Total	<u>\$ 1,405,754</u>	<u>\$ 1,800,092</u>	<u>\$ 2,275,960</u>	<u>\$ 2,233,408</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>91,478</u>	<u>76,661</u>	<u>35,505</u>	<u>32,620</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 1,497,232	\$ 1,876,753	\$ 2,311,465	\$ 2,266,028
<b>E. <u>Statement of Change in Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated Plan benefits as of October 1, 2018				\$ 1,497,232
2. Increase (decrease) during period attributable to:				
a. Plan amendment				\$ 379,521
b. Change in actuarial assumptions				(45,437)
c. Benefits paid				(44,009)
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period				478,721
e. Net increase				<u>\$ 768,796</u>
3. Actuarial present value of accumulated Plan benefits as of October 1, 2019				\$ 2,266,028

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(AMSC)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>F. Pension Cost</b>				
1. Total normal cost (including administrative expenses)	\$ 128,124	\$ 199,805	\$ 153,575	\$ 151,019
2. Payment required to amortize unfunded liability	56,265	114,361	84,511	79,080
3. Interest adjustment	6,558	11,173	8,467	8,183
4. Total preliminary required contribution	\$ 190,947	\$ 325,339	\$ 246,553	\$ 238,282
5. Total required contribution	\$ 190,947	\$ 325,339	\$ 246,553	\$ 238,282
6. Item 5 as a percentage of payroll	19.0%	21.1%	17.7%	17.1%
7. Estimated member contributions	\$ 70,328	\$ 108,029	\$ 97,306	\$ 97,306
8. Item 7 as a percentage of payroll	7.0%	7.0%	7.0%	7.0%
9. Estimated State contributions	\$ 0	\$ 0	\$ 0	\$ 0
10. Item 9 as a percentage of payroll	0.0%	0.0%	0.0%	0.0%
11. Net amount payable by City	\$ 120,619	\$ 217,310	\$ 149,247	\$ 140,976
12. Item 11 as a percentage of payroll	12.0%	14.1%	10.7%	10.1%
<b>G. Past Contributions</b>				
1. Total contribution required (prior year's valuation)	\$ 229,651	\$ 229,651	\$ 190,947	\$ 190,947
2. Actual contributions made:				
a. Members	\$ 153,400	\$ 153,400	N/A	N/A
b. State	N/A	N/A	N/A	N/A
c. City	76,251	76,251	N/A	N/A
d. Total	\$ 229,651	\$ 229,651	N/A	N/A
<b>H. Net Actuarial Gain / (Loss)</b>				
	\$ (487,112)	\$ (487,112)	\$ 506,381	\$ 506,381
<b>I. Disclosure of Following Items:</b>				
1. Actuarial present value of future salaries - attained age	\$ 5,399,900	\$ 8,851,277	\$ 7,896,066	\$ 7,909,696
2. Actuarial present value of future employee contributions - attained age	\$ 377,993	\$ 619,589	\$ 552,725	\$ 553,679
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 568,912	\$ 636,563	\$ 796,065	\$ 796,065
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A	N/A

Actuarial Valuation as of October 1, 2019

State Required Exhibit

**(Police Officers)**

	<b>Actuarial Valuation 10/01/2018</b>	<b>Actuarial Impact Statement 10/01/2018</b>	<b>Prior Assumptions 10/01/2019</b>	<b>Current Assumptions 10/01/2019</b>
<b>A. <u>Participant Data</u></b>				
1. Active participants	50	50	43	43
2. Retired participants and beneficiaries receiving benefits	21	21	22	22
3. Disabled participants receiving benefits	0	0	0	0
4. Terminated vested participants	5	5	5	5
5. Annual payroll of active participants	\$ 3,275,192	\$ 3,275,192	\$ 3,090,000	\$ 3,090,000
6. Expected payroll of active employees for the following year	\$ 3,321,045	\$ 3,321,045	\$ 3,090,000	\$ 3,090,000
7. Annual benefits payable to those currently receiving benefits	\$ 886,250	\$ 886,250	\$ 933,689	\$ 933,689
<b>B. <u>Assets</u></b>				
1. Market Value of Assets	\$ 25,558,852	\$ 25,937,904	\$ 26,203,867	\$ 26,203,867
2. Smoothed Value of Assets	\$ 24,418,419	\$ 24,797,471	\$ 26,368,672	\$ 26,368,672
<b>C. <u>Liabilities</u></b>				
1. Actuarial present value of future expected benefit payments for active members				
a. Retirement benefits	\$ 14,415,896	\$ 14,773,709	\$ 15,372,919	\$ 15,018,199
b. Vesting benefits	573,244	793,081	769,553	765,216
c. Death benefits	55,566	48,568	43,424	30,898
d. Disability benefits	329,463	285,173	277,607	281,738
e. Refunds	242,168	242,168	188,657	188,959
f. Total	\$ 15,616,337	\$ 16,142,699	\$ 16,652,160	\$ 16,285,010
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 593,195	\$ 593,195	\$ 640,146	\$ 623,345
3. Actuarial present value of future expected benefit payments for members currently receiving benefits				
a. Service retired	\$ 11,677,885	\$ 11,677,885	\$ 12,592,258	\$ 12,124,305
b. Disability retired	0	0	0	0
c. Beneficiaries	0	0	0	0
d. Miscellaneous	64,944	64,944	26,068	26,068
e. Total	\$ 11,742,829	\$ 11,742,829	\$ 12,618,326	\$ 12,150,373

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(Police Officers)

	<u>Actuarial Valuation 10/01/2018</u>	<u>Actuarial Impact Statement 10/01/2018</u>	<u>Prior Assumptions 10/01/2019</u>	<u>Current Assumptions 10/01/2019</u>
4. Total actuarial present value of future expected benefit payments	\$ 27,952,361	\$ 28,478,723	\$ 29,910,632	\$ 29,058,728
5. Actuarial accrued liabilities	\$ 24,292,223	\$ 24,765,940	\$ 26,484,127	\$ 25,687,059
6. Unfunded actuarial accrued liabilities	\$ (126,196)	\$ (31,531)	\$ 115,455	\$ (681,613)
<b>D. <u>Statement of Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated vested benefits				
a. Participants currently receiving benefits	\$ 11,677,885	\$ 11,677,885	\$ 12,592,258	\$ 12,124,305
b. Other participants	7,006,821	8,486,935	9,307,776	9,092,031
c. Total	<u>\$ 18,684,706</u>	<u>\$ 20,164,820</u>	<u>\$ 21,900,034</u>	<u>\$ 21,216,336</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>2,763,866</u>	<u>2,034,313</u>	<u>1,671,918</u>	<u>1,622,339</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 21,448,572	\$ 22,199,133	\$ 23,571,952	\$ 22,838,675
<b>E. <u>Statement of Change in Accumulated Plan Benefits</u></b>				
1. Actuarial present value of accumulated Plan benefits as of October 1, 2018				\$ 21,448,572
2. Increase (decrease) during period attributable to:				
a. Plan amendment				\$ 750,561
b. Change in actuarial assumptions				(733,277)
c. Benefits paid				(1,021,103)
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period				<u>2,393,922</u>
e. Net increase				\$ 1,390,103
3. Actuarial present value of accumulated Plan benefits as of October 1, 2019				\$ 22,838,675

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(Police Officers)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>F. Pension Cost</b>				
1. Total normal cost (including administrative expenses)	\$ 605,242	\$ 637,080	\$ 585,355	\$ 575,662
2. Payment required to amortize unfunded liability	(10,039)	(3,117)	6,636	(59,230)
3. Interest adjustment	21,839	23,955	22,461	19,775
4. Total preliminary required contribution	<u>\$ 617,042</u>	<u>\$ 657,918</u>	<u>\$ 614,452</u>	<u>\$ 536,207</u>
5. Total required contribution (Greater of F.1. and F.4.)	\$ 617,042	\$ 657,918	\$ 614,452	\$ 575,662
6. Item 5 as a percentage of payroll	18.8%	20.1%	19.9%	18.6%
7. Estimated member contributions	\$ 249,078	\$ 249,078	\$ 231,750	\$ 231,750
8. Item 7 as a percentage of payroll	7.5% <sup>1</sup>	7.5% <sup>1</sup>	7.5% <sup>2</sup>	7.5% <sup>2</sup>
9. Estimated State contributions	\$ 37,780	\$ 79,228	\$ 79,228	\$ 79,228
10. Item 9 as a percentage of payroll	1.1% <sup>1</sup>	2.4% <sup>1</sup>	2.6% <sup>2</sup>	2.6% <sup>2</sup>
11. Net amount payable by City	\$ 338,823	\$ 338,823	\$ 303,474	\$ 264,684
12. Item 11 as a percentage of payroll	10.2% <sup>1</sup>	10.2% <sup>1</sup>	9.8% <sup>2</sup>	8.6% <sup>2</sup>
<b>G. Past Contributions</b>				
1. Total contribution required (prior year's valuation)	\$ 806,775	\$ 806,775	\$ 625,681	\$ 625,681
2. Actual contributions made:				
a. Members	\$ 319,967	\$ 319,967	N/A	N/A
b. State	416,832	416,832	N/A	N/A
c. City	449,028	449,028	N/A	N/A
d. Total	<u>\$ 1,185,827</u>	<u>\$ 1,185,827</u>	<u>N/A</u>	<u>N/A</u>
<b>H. Net Actuarial Gain / (Loss)</b>	\$ 1,504,304	\$ 1,504,304	\$ (236,756)	\$ (236,756)
<b>I. Disclosure of Following Items:</b>				
1. Actuarial present value of future salaries - attained age	\$ 21,878,999	\$ 21,057,847	\$ 19,352,915	\$ 19,381,726
2. Actuarial present value of future employee contributions - attained age	\$ 1,640,925	\$ 1,579,339	\$ 1,451,469	\$ 1,453,629
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 3,383,846	\$ 3,383,846	\$ 3,316,133	\$ 3,316,133
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A	N/A

<sup>1</sup> Percent of expected 2019-2020 covered payroll (\$3,321,045)

<sup>2</sup> Percent of expected 2020-2021 covered payroll (\$3,090,000)

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(All Participants)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>A. Participant Data</b>				
1. Active participants	107	119	103	103
2. Retired participants and beneficiaries receiving benefits	48	48	49	49
3. Disabled participants receiving benefits	0	0	0	0
4. Terminated vested participants	9	9	9	9
5. Annual payroll of active participants	\$ 6,675,196	\$ 7,421,302	\$ 6,857,483	\$ 6,857,483
6. Expected payroll of active employees for the following year	\$ 6,721,049	\$ 7,467,155	\$ 6,857,483	\$ 6,857,483
7. Annual benefits payable to those currently receiving benefits	\$ 1,530,667	\$ 1,530,667	\$ 1,610,041	\$ 1,610,041
<b>B. Assets</b>				
1. Market Value of Assets	\$ 43,219,378	\$ 43,598,430	\$ 45,564,011	\$ 45,564,011
2. Smoothed Value of Assets	\$ 41,264,634	\$ 41,643,686	\$ 45,791,297	\$ 45,791,297
<b>C. Liabilities</b>				
1. Actuarial present value of future expected benefit payments for active members				
a. Retirement benefits	\$ 21,342,077	\$ 23,556,477	\$ 24,642,428	\$ 24,138,837
b. Vesting benefits	1,461,043	1,906,101	1,857,384	1,817,426
c. Death benefits	109,769	104,230	98,521	72,160
d. Disability benefits	718,464	750,094	754,506	768,790
e. Refunds	283,544	280,107	229,591	229,907
f. Total	\$ 23,914,897	\$ 26,597,009	\$ 27,582,430	\$ 27,027,120
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 1,266,989	\$ 1,266,989	1,364,430	\$ 1,325,331
3. Actuarial present value of future expected benefit payments for members currently receiving benefits				
a. Service retired	\$ 19,210,022	\$ 19,210,022	\$ 20,459,405	\$ 19,851,550
b. Disability retired	0	0	0	0
c. Beneficiaries	176,438	176,438	174,543	171,340
d. Miscellaneous	149,378	149,378	112,797	112,797
e. Total	\$ 19,535,838	\$ 19,535,838	\$ 20,746,745	\$ 20,135,687

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(All Participants)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
4. Total actuarial present value of future expected benefit payments	\$ 44,717,724	\$ 47,399,836	\$ 49,693,605	\$ 48,488,138
5. Actuarial accrued liabilities	\$ 39,169,604	\$ 41,082,454	\$ 43,957,719	\$ 42,847,919
6. Unfunded actuarial accrued liabilities	\$ (2,095,030)	\$ (561,232)	\$ (1,833,578)	\$ (2,943,378)
<b>D. Statement of Accumulated Plan Benefits</b>				
1. Actuarial present value of accumulated vested benefits				
a. Participants currently receiving benefits	\$ 19,386,460	\$ 19,386,460	\$ 20,633,948	\$ 20,022,890
b. Other participants	12,223,902	14,217,421	15,769,602	15,438,514
c. Total	<u>\$ 31,610,362</u>	<u>\$ 33,603,881</u>	<u>\$ 36,403,550</u>	<u>\$ 35,461,404</u>
2. Actuarial present value of accumulated non-vested Plan benefits	<u>3,134,126</u>	<u>2,506,083</u>	<u>2,018,468</u>	<u>1,955,704</u>
3. Total actuarial present value of accumulated Plan benefits	\$ 34,744,488	\$ 36,109,964	\$ 38,422,018	\$ 37,417,108
<b>E. Statement of Change in Accumulated Plan Benefits</b>				
1. Actuarial present value of accumulated Plan benefits as of October 1, 2018				\$ 34,744,488
2. Increase (decrease) during period attributable to:				
a. Plan amendment				\$ 1,365,476
b. Change in actuarial assumptions				(1,004,910)
c. Benefits paid				(1,660,970)
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period				<u>3,973,024</u>
e. Net increase				<u>\$ 2,672,620</u>
3. Actuarial present value of accumulated Plan benefits as of October 1, 2019				\$ 37,417,108

Actuarial Valuation as of October 1, 2019

State Required Exhibit

(All Participants)

	Actuarial Valuation 10/01/2018	Actuarial Impact Statement 10/01/2018	Prior Assumptions 10/01/2019	Current Assumptions 10/01/2019
<b>F. Pension Cost</b>				
1. Total normal cost (including expenses)	\$ 981,888	\$ 1,127,133	\$ 997,215	\$ 981,187
2. Payment required to amortize unfunded liability	(193,875)	(68,030)	(180,580)	(272,289)
3. Interest adjustment	28,696	38,272	30,451	26,621
4. Total preliminary required contribution	\$ 816,709	\$ 1,097,375	\$ 847,086	\$ 735,519
5. Total required contribution	\$ 1,066,311	\$ 1,289,995	\$ 1,127,740	\$ 1,075,854
6. Item 5 as a percentage of payroll	16.0%	17.4%	16.4%	15.7%
7. Estimated member contributions	\$ 439,175	\$ 480,067	\$ 444,127	\$ 444,127
8. Item 7 as a percentage of payroll	6.5% <sup>1</sup>	6.4% <sup>2</sup>	6.5% <sup>3</sup>	6.5% <sup>3</sup>
9. Estimated State contributions	\$ 37,780	\$ 79,228	\$ 79,228	\$ 79,228
10. Item 9 as a percentage of payroll	0.6% <sup>1</sup>	1.1% <sup>2</sup>	1.2% <sup>3</sup>	1.2% <sup>3</sup>
11. Net amount payable by City	\$ 597,995	\$ 739,911	\$ 604,385	\$ 552,499
12. Item 11 as a percentage of payroll	8.9% <sup>1</sup>	9.9% <sup>2</sup>	8.8% <sup>3</sup>	8.1% <sup>3</sup>
<b>G. Past Contributions</b>				
1. Total contribution required (prior year's valuation)	\$ 1,299,682	\$ 1,299,682	\$ 1,074,950	\$ 1,074,950
2. Actual contributions made:				
a. Members	\$ 594,753	\$ 594,753	N/A	N/A
b. State	416,832	416,832	N/A	N/A
c. City	667,149	667,149	N/A	N/A
d. Total	\$ 1,678,734	\$ 1,678,734	N/A	N/A
H. <u>Net Actuarial Gain / (Loss)</u>	\$ 2,287,619	\$ 2,287,619	\$ 1,195,515	\$ 1,195,515
<b>I. Disclosure of Following Items:</b>				
1. Actuarial present value of future salaries - attained age	\$ 45,957,035	\$ 50,451,825	\$ 45,720,597	\$ 45,809,257
2. Actuarial present value of future employee contributions - attained age	\$ 2,896,466	\$ 3,102,757	\$ 2,834,691	\$ 2,839,990
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 5,431,831	\$ 5,431,831	\$ 5,554,624	\$ 5,554,624
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A	N/A

<sup>1</sup> Percent of expected 2019-2020 covered payroll (\$6,721,049)

<sup>2</sup> Percent of expected 2019-2020 covered payroll (\$7,467,155)

<sup>3</sup> Percent of expected 2020-2021 covered payroll (\$6,857,483)

Table XVII  
(Cont'd)

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 *	\$ (1,248,022)	\$ (130,654)	15 years
10/01/2016	Actuarial Loss / (Gain)	(442,662)	(38,437)	22 years
10/01/2016	Assumption Change	456,772	39,662	22 years
10/01/2017	Actuarial Loss / (Gain)	(300,774)	(25,651)	23 years
10/01/2018	Actuarial Loss / (Gain)	(1,381,131)	(115,865)	24 years
10/01/2018	Plan Amendment - Ord. #35-19-2348	709,035	59,482	24 years
10/01/2019	Actuarial Loss / (Gain)	(789,167)	(65,213)	25 years
10/01/2019	Assumption Change	<u>(235,478)</u>	<u>(19,459)</u>	25 years
	TOTAL	\$ (3,231,427)	\$ (296,135)	
<u>General Employees Tier 2</u>				
10/01/2017	Initial Base	\$ 75,697	\$ 6,573	22 years
10/01/2018	Actuarial Loss / (Gain)	24,338	2,042	24 years
10/01/2018	Plan Amendment - Ord. #35-19-2348	90,969	7,632	24 years
10/01/2019	Actuarial Loss / (Gain)	(136,723)	(11,298)	25 years
10/01/2019	Assumption Change	<u>(11,531)</u>	<u>(953)</u>	25 years
	TOTAL	\$ 42,750	\$ 3,996	
<u>AMSC</u>				
10/01/2017	Combined Bases *	\$ 204,332	\$ 17,742	22 years
10/01/2018	Actuarial Loss / (Gain)	529,894	44,454	24 years
10/01/2018	Plan Amendment - Ord. #23-19-2336	240,427	20,170	24 years
10/01/2018	Plan Amendment - Ord. #35-19-2348	524,363	43,990	24 years
10/01/2019	Actuarial Loss / (Gain)	(506,381)	(41,845)	25 years
10/01/2019	Assumption Change	<u>(65,723)</u>	<u>(5,431)</u>	25 years
	TOTAL	\$ 926,912	\$ 79,080	

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

State Required Exhibit

	<u>Unfunded Actuarial Accrued Liabilities</u>	<u>Current Unfunded Liabilities</u>	<u>Amortization Payment</u>	<u>Remaining Funding Period</u>
		<u>Police Officers</u>		
10/01/2018	Combined Bases *	\$ (417,139)	\$ (37,746)	20 years
10/01/2018	Plan Amendment - Ord. #38-19-2351	295,838	24,818	24 years
10/01/2019	Actuarial Loss / (Gain)	236,756	19,564	25 years
10/01/2019	Assumption Change	<u>(797,068)</u>	<u>(65,866)</u>	25 years
	TOTAL	\$ (681,613)	\$ (59,230)	

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

This actuarial valuation and/or cost determination was prepared and completed by us or under our direct supervision, and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate, and in our 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 other wise 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.

*Michelle Jones*

Shelly L. Jones, A.S.A.  
Enrollment Number: 20-08646

*Jennifer Borregard*

Jennifer M. Borregard, E.A.  
Enrollment Number: 20-07624

Dated: April 30, 2020

## 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.

**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.

**Vested Benefit Security Ratio.** The ratio of the Market Value of Assets to the Actuarial Present Value of Vested Accrued Benefits.