

June 5, 2019

Ms. Kimberly Groome  
Coral Gables Retirement System  
147 Alhambra Circle, Suite 215  
Coral Gables, FL 33134

**Re: City of Coral Gables Retirement System  
Actuarial Impact Statement – Proposed Ordinance for Firefighters**

Dear Kim:

We have prepared this Actuarial Impact Statement for the City of Coral Gables Retirement System (“Plan”) to measure the first-year financial impact of the proposed Ordinance for Firefighters which would amend the Plan as follows:

1. Effective October 1, 2019, add a “25 and out” Normal Retirement eligibility provision for all Firefighters who currently have the “Rule of 76” provision, such that they will be eligible to retire upon reaching the earlier of the “Rule of 76” or 25 years of service regardless of age.
2. Effective October 1, 2019, for Firefighters hired after September 30, 2013, change the benefit multiplier for the 25<sup>th</sup> year of Credited Service to 10% so that the total benefit multiplier will be 75% after 25 years of Credited Service. The maximum benefit remains at 75%.
3. Recalculate the Average Final Compensation based on 4-year average as of the date of retirement and including payments for compensatory time for the Firefighter retirees who entered the DROP after September 30, 2013 but before September 30, 2014.

In addition, pursuant to the successor collective bargaining agreement (CBA) with the International Association of Fire Fighters (IAFF) union, effective October 14, 2019, the 5% non-pensionable Driver Pay assignment pay will be eliminated. Driver Engineers will be placed into the job classification of a Driver Engineer on October 14, 2019 and will be paid in accordance with the pay listed for Driver Engineers set forth in the Step Plan in Addendum III of the successor CBA, which shall be pensionable.

**Summary of Findings**

- Based on the proposed plan changes pursuant to the proposed Ordinance, the required City contribution for the fiscal year ending September 30, 2020 (payable October 1, 2019) increases by \$86,645, from \$24,183,338 to \$24,269,983, and when combined with the additional change for Driver Engineers pursuant to the successor CBA, by \$98,300, from \$24,183,338 to \$24,281,638.

- Based on the proposed plan changes pursuant to the proposed Ordinance, as a percentage of covered payroll, the required City contribution for the fiscal year ending September 30, 2020 increases by 0.20% of covered payroll, from 54.46% to 54.66%, and when combined with the additional change for Driver Engineers pursuant to the successor CBA, by 0.22%, from 54.46% to 54.68%.
- Based on the proposed plan changes pursuant to the proposed Ordinance, the unfunded actuarial accrued liability as of October 1, 2018 increases by \$293,234, from \$219,192,633 to \$219,485,867 and when combined with the additional change for Driver Engineers pursuant to the successor CBA, by \$373,605, from \$219,192,633 to \$219,566,238.
- The ultimate cost of the proposed plan changes for all current members over their full careers is measured by the change in the actuarial present value of projected future benefits minus the change in the actuarial present value of projected future member contributions, which is \$1,127,074, and when combined with the additional change for Driver Engineers pursuant to the successor CBA, is \$1,263,682. This assumes all of the actuarial assumptions are met each year. The difference will be funded by additional City contributions over time.

This Statement must be filed with the Division of Retirement before the final public hearing on the Ordinance. Please have a member of the Board of Trustees sign the Statement. Then please send the Statement along with a copy of the proposed Ordinance to Tallahassee.

### **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 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 this assignment 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 the expected returns;
2. 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;
3. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
4. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
5. 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 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 cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

### **Risk Assessment**

A quantitative risk assessment is outside the scope of this assignment. 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. We are prepared to perform such assessment to aid in the decision-making process.

### **Required Disclosures**

We note that the change described in the successor CBA for Driver Engineers may have a higher impact than the results shown herein because based on data provided by the City, there are currently a total of 30 Driver Engineers, but 21 of them are in the DROP, so currently there are only 9 active (non-DROP) Firefighters affected. After the Driver Engineers currently in the DROP retire and leave the DROP, if there are more Driver Engineers actively earning benefits under the Plan in future years, the impact will be greater.

This report was prepared at the request of the Board of Trustees, and is intended for use by the Board and those designated or approved by the Board. This report may be provided to parties other than the Board only in its entirety and only with their permission. GRS is not responsible for unauthorized use of this report.

This report is intended to describe the financial effect of the proposed plan changes. No statement in this report is intended to be interpreted as a recommendation in favor of the changes, or in opposition to them. This report should not be relied on for any purpose other than the purpose described above.

The calculations in this report are based upon Driver Engineer data and other information furnished by the City, as well as data and other information furnished by the Plan Administrator for the October 1, 2018 actuarial valuation concerning plan benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We reviewed this information for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City and the Plan Administrator.

In the event that more than one change is being considered, the results of separate actuarial valuations cannot generally be added together to produce a correct estimate of the combined effects of all the changes. The total can differ considerably from the sum of the parts due to the interaction of the various plan provisions with each other and with the assumptions that must be used.

The calculations are based upon assumptions regarding future events, which may or may not materialize. They are also based on the assumptions, methods, and plan provisions outlined in this report. If you have reason to believe that the assumptions that were used are unreasonable, that the plan provisions are incorrectly described, that important plan provisions relevant to this proposal are not described, or that conditions have changed since the calculations were made, you should contact the author of this report prior to relying on information in this report.

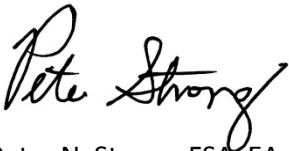
This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the Plan as of the valuation date. All calculations have 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.

Peter N. Strong and Melissa R. Moskovitz are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

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. In our opinion, the techniques and assumptions used are reasonable, meet the requirements and intent of Part VII, Chapter 112, Florida Statutes, and are based on generally accepted actuarial principles and practices. There is no benefit or expense to be provided by the Plan and/or paid from the Plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account in the valuation.

Respectfully submitted,



Peter N. Strong, FSA, EA, MAAA, FCA  
Senior Consultant & Actuary



Melissa R. Moskovitz, EA, MAAA, FCA  
Consultant & Actuary

Enclosures

cc: Ms. Raquel Elejabarrieta, Esq. (City of Coral Gables)

This communication shall not be construed to provide tax advice, legal advice or investment advice.

# City of Coral Gables Retirement System

## Actuarial Impact Statement – June 5, 2019

### Description of Amendment

The proposed ordinance would amend the Plan as follows:

1. Effective October 1, 2019, add a “25 and out” Normal Retirement eligibility provision for all Firefighters who currently have the “Rule of 76” provision, such that they will be eligible to retire upon reaching the earlier of the “Rule of 76” or 25 years of service regardless of age.
2. Effective October 1, 2019, for Firefighters hired after September 30, 2013, change the benefit multiplier for the 25<sup>th</sup> year of Credited Service to 10% so that the total benefit multiplier will be 75% after 25 years of Credited Service. The maximum benefit remains at 75%.
3. Recalculate the Average Final Compensation based on 4-year average as of the date of retirement and including payments for compensatory time for the Firefighter retirees who entered the DROP after September 30, 2013 but before September 30, 2014.

### Funding Implications of Amendment

See attached exhibits.

### Certification of Administrator

I believe the amendment to be in compliance with Part VII, Chapter 112, Florida Statutes and Section 14, Article X of the Constitution of the State of Florida.

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For the Board of Trustees  
as Plan Administrator

# Actuarial Impact Statement

## Plan

City of Coral Gables Retirement System

## Valuation Date

October 1, 2018

## Date of Report

June 5, 2019

## Report Requested by

The Board of Trustees of the Plan

## Prepared by

Peter N. Strong, FSA, EA, MAAA, FCA

## Group Valued

All active and inactive members of the Plan

## Plan Changes Being Proposed

1. Effective October 1, 2019, add a “25 and out” Normal Retirement eligibility provision for all Firefighters who currently have the “Rule of 76” provision (most Firefighters hired after October 1, 2003), such that they will be eligible to retire upon reaching the earlier of the “Rule of 76” or 25 years of service regardless of age.
2. Effective October 1, 2019, for Firefighters hired after September 30, 2013, change the benefit multiplier for the 25<sup>th</sup> year of Credited Service to 10% so that the total benefit multiplier will be 75% after 25 years of Credited Service. The maximum benefit remains at 75%.
3. Recalculate the Average Final Compensation based on 4-year average as of the date of retirement and including payments for compensatory time for the Firefighter retirees who entered the DROP after September 30, 2013 but before September 30, 2014.

## Participants Affected

1. All active Firefighter members who currently have the “Rule of 76” provision (most Firefighters hired after October 1, 2003)
2. All active Firefighter members hired after September 30, 2013
3. 11 Firefighter retired members that entered the DROP after September 30, 2013 but before September 30, 2014

## Actuarial Assumptions and Methods

It was assumed that the placement of Driver Engineers into the Driver Engineer job classification with the pay set forth in the Step Plan in Addendum III of the successor CBA would increase their Pensionable Earnings by 5%.

Otherwise, the assumptions/methods are the same as used in the October 1, 2018 actuarial valuation, except that the assumed rates of retirement for members hired after 9/30/2013 were changed to 10% per year prior to completion of 25 years of service for any Firefighter expected to complete 25 years of service by the time they reach age 60.

Some of the key assumptions/methods are:

Investment Return	7.60%
Mortality Table	Same used in the July 1, 2018 actuarial valuation of the Florida Retirement System
Cost Method	Entry Age Normal

## Amortization Period for Change in Actuarial Accrued Liability Associated with Benefit Changes

10 years for the change applicable to the 11 Firefighter retired members that entered the DROP after 9/30/2013 but before 9/30/2014, and 20 years for all other changes

## Summary of Data Used in Report

See page 18. Data used the October 1, 2018 actuarial valuation provided by the Plan Administrator, data identifying current Driver Engineer active members provided by the City, and data and other information provided by the City and the Plan Administrator for Firefighter retired members that entered the DROP after 9/30/2013 but before 9/30/2014.

## Actuarial Impact of Proposals

See attached exhibits.

## Special Risks Involved with the Proposal that the Plan Has Not Been Exposed to Previously

Based on data provided by the City, there are currently a total of 30 Driver Engineers, but 21 of them are in the DROP, so currently there are only 9 active (non-DROP) Firefighters affected by the change for Driver Engineers pursuant to the successor CBA. After the Driver Engineers currently in the DROP retire and leave the DROP, if the number of Driver Engineers who are actively earning benefits under the Plan increases, the cost/liability impact will be higher than reflected in this report.



## Actuarially Determined Contribution (ADC) - Reflecting Proposed Ordinance and CBA

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. ADC to Be Paid During Fiscal Year Ending	9/30/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020
C. Assumed City Contribution Date	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019
D. Annual Payment to Amortize Unfunded Actuarial Accrued Liability	\$ 21,591,274	\$ 29,150	\$ 3,319,847	\$ 6,718,675	\$ 6,307,352	\$ 5,216,250
E. Total Normal Cost	7,272,619	285	1,387,240	1,652,499	2,446,112	1,786,483
F. Increase in Normal Cost due to Expected Payroll Growth	272,724	11	52,022	61,969	91,729	66,993
G. Total Contribution Requirement	29,136,617	29,446	4,759,109	8,433,143	8,845,193	7,069,726
H. State Contributions	145,830	0	0	0	93,559	52,271
I. State Contributions Discounted to BOY	136,776	0	0	0	87,750	49,026
J. City and Members Combined = G. - I.	28,999,841	29,446	4,759,109	8,433,143	8,757,443	7,020,700
K. Expected Member Contributions	4,440,571	0	1,028,623	1,296,117	1,306,372	809,459
L. Expected Member Contributions Discounted to BOY	4,280,876	0	991,631	1,249,505	1,259,391	780,349
M. Member Cost Sharing	453,641	0	0	453,641	0	0
N. Member Cost Sharing Discounted to BOY	437,327	0	0	437,327	0	0
O. Net City Contribution* = J. - L. - N.	24,281,638	29,446	3,767,478	6,746,311	7,498,052	6,240,351
P. Net City Contribution as % of Covered Payroll	54.68 %	N/A	36.63 %	52.05 %	57.40 %	77.09 %

\* Interest at the 7.60% annual rate must be added from October 1 to the date(s) of deposit.

## Actuarially Determined Contribution (ADC) - Reflecting Proposed Ordinance

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. ADC to Be Paid During Fiscal Year Ending	9/30/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020
C. Assumed City Contribution Date	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019
D. Annual Payment to Amortize Unfunded Actuarial Accrued Liability	\$ 21,583,891	\$ 29,150	\$ 3,319,847	\$ 6,718,675	\$ 6,307,352	\$ 5,208,867
E. Total Normal Cost	7,268,501	285	1,387,240	1,652,499	2,446,112	1,782,365
F. Increase in Normal Cost due to Expected Payroll Growth	<u>272,570</u>	<u>11</u>	<u>52,022</u>	<u>61,969</u>	<u>91,729</u>	<u>66,839</u>
G. Total Contribution Requirement	29,124,962	29,446	4,759,109	8,433,143	8,845,193	7,058,071
H. State Contributions	145,830	0	0	0	93,559	52,271
I. State Contributions Discounted to BOY	<u>136,776</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>87,750</u>	<u>49,026</u>
J. City and Members Combined = G. - I.	28,988,186	29,446	4,759,109	8,433,143	8,757,443	7,009,045
K. Expected Member Contributions	4,440,571	0	1,028,623	1,296,117	1,306,372	809,459
L. Expected Member Contributions Discounted to BOY	4,280,876	0	991,631	1,249,505	1,259,391	780,349
M. Member Cost Sharing	453,641	0	0	453,641	0	0
N. Member Cost Sharing Discounted to BOY	<u>437,327</u>	<u>0</u>	<u>0</u>	<u>437,327</u>	<u>0</u>	<u>0</u>
O. Net City Contribution* = J. - L. - N.	24,269,983	29,446	3,767,478	6,746,311	7,498,052	6,228,696
P. Net City Contribution as % of Covered Payroll	54.66 %	N/A	36.63 %	52.05 %	57.40 %	76.95 %

\* Interest at the 7.60% annual rate must be added from October 1 to the date(s) of deposit.

## Actuarially Determined Contribution (ADC) - Actuarial Valuation as of October 1, 2018

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. ADC to Be Paid During Fiscal Year Ending	9/30/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020
C. Assumed City Contribution Date	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019	10/1/2019
D. Annual Payment to Amortize Unfunded Actuarial Accrued Liability	\$ 21,550,269	\$ 29,150	\$ 3,319,847	\$ 6,718,675	\$ 6,307,352	\$ 5,175,245
E. Total Normal Cost	7,217,395	285	1,387,240	1,652,499	2,446,112	1,731,259
F. Increase in Normal Cost due to Expected Payroll Growth	<u>270,653</u>	<u>11</u>	<u>52,022</u>	<u>61,969</u>	<u>91,729</u>	<u>64,922</u>
G. Total Contribution Requirement	29,038,317	29,446	4,759,109	8,433,143	8,845,193	6,971,426
H. State Contributions	145,830	0	0	0	93,559	52,271
I. State Contributions Discounted to BOY	<u>136,776</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>87,750</u>	<u>49,026</u>
J. City and Members Combined = G. - I.	28,901,541	29,446	4,759,109	8,433,143	8,757,443	6,922,400
K. Expected Member Contributions	4,440,571	0	1,028,623	1,296,117	1,306,372	809,459
L. Expected Member Contributions Discounted to BOY	4,280,876	0	991,631	1,249,505	1,259,391	780,349
M. Member Cost Sharing	453,641	0	0	453,641	0	0
N. Member Cost Sharing Discounted to BOY	<u>437,327</u>	<u>0</u>	<u>0</u>	<u>437,327</u>	<u>0</u>	<u>0</u>
O. Net City Contribution* = J. - L. - N.	24,183,338	29,446	3,767,478	6,746,311	7,498,052	6,142,051
P. Net City Contribution as % of Covered Payroll	54.46 %	N/A	36.63 %	52.05 %	57.40 %	75.88 %

\* Interest at the 7.60% annual rate must be added from October 1 to the date(s) of deposit.

## Actuarial Value of Benefits and Assets - Reflecting Proposed Ordinance and CBA

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. Actuarial Present Value (APV) of All Projected Benefits						
1. Active Members						
a. Service Retirement Benefits	\$ 152,004,898	\$ -	\$ 24,336,353	\$ 32,735,835	\$ 59,580,412	\$ 35,352,298
b. Vesting Benefits	5,830,350	-	1,398,880	2,240,835	814,098	1,376,537
c. Disability Benefits	2,193,465	-	401,057	387,295	814,903	590,210
d. Preretirement Death Benefits	3,945,202	-	729,432	575,243	1,458,418	1,182,109
e. Return of Member Contributions	3,441,956	-	869,984	1,984,270	481,820	105,882
f. Total	167,415,871	-	27,735,706	37,923,478	63,149,651	38,607,036
2. Inactive Members						
a. Service Retirees & Beneficiaries	431,564,407	511,253	64,020,751	125,398,790	122,793,971	118,839,642
b. Disability Retirees	16,913,528	-	557,719	3,716,386	8,893,873	3,745,550
c. Terminated Vested Members	7,512,195	-	1,136,694	3,493,073	2,308,715	573,713
d. DROP Account Balances	37,364,445	-	1,968,610	4,422,518	6,606,409	24,366,908
e. Total	493,354,575	511,253	67,683,774	137,030,767	140,602,968	147,525,813
3. Total for All Members	660,770,446	511,253	95,419,480	174,954,245	203,752,619	186,132,849
C. Actuarial Accrued (Past Service) Liability	602,090,015	511,253	83,979,383	164,875,952	183,882,384	168,841,043
D. APV of Accumulated Plan Benefits per FASB ASC 960	N/A	N/A	N/A	N/A	N/A	N/A
E. Plan Assets						
1. Market Value	402,426,005	221,542	52,925,494	101,693,775	125,275,305	122,309,889
2. Actuarial Value	382,523,777	210,586	50,308,031	96,664,446	119,079,737	116,260,977
F. Unfunded Actuarial Accrued Liability	219,566,238	300,667	33,671,352	68,211,506	64,802,647	52,580,066
G. APV of Projected Covered Payroll	328,170,497	-	79,105,035	76,284,699	95,038,660	77,742,103
H. APV of Projected Member Contributions	32,817,050	-	7,910,504	7,628,470	9,503,866	7,774,210
I. Accumulated Value of Member Contributions	27,752,812	-	6,521,842	11,903,867	5,619,069	3,708,034

## Actuarial Value of Benefits and Assets - Reflecting Proposed Ordinance

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. Actuarial Present Value (APV) of All Projected Benefits						
1. Active Members						
a. Service Retirement Benefits	\$ 151,858,880	\$ -	\$ 24,336,353	\$ 32,735,835	\$ 59,580,412	\$ 35,206,280
b. Vesting Benefits	5,826,710	-	1,398,880	2,240,835	814,098	1,372,897
c. Disability Benefits	2,190,946	-	401,057	387,295	814,903	587,691
d. Preretirement Death Benefits	3,940,083	-	729,432	575,243	1,458,418	1,176,990
e. Return of Member Contributions	3,441,956	-	869,984	1,984,270	481,820	105,882
f. Total	167,258,575	-	27,735,706	37,923,478	63,149,651	38,449,740
2. Inactive Members						
a. Service Retirees & Beneficiaries	431,564,407	511,253	64,020,751	125,398,790	122,793,971	118,839,642
b. Disability Retirees	16,913,528	-	557,719	3,716,386	8,893,873	3,745,550
c. Terminated Vested Members	7,512,195	-	1,136,694	3,493,073	2,308,715	573,713
d. DROP Account Balances	37,364,445	-	1,968,610	4,422,518	6,606,409	24,366,908
e. Total	493,354,575	511,253	67,683,774	137,030,767	140,602,968	147,525,813
3. Total for All Members	660,613,150	511,253	95,419,480	174,954,245	203,752,619	185,975,553
C. Actuarial Accrued (Past Service) Liability	602,009,644	511,253	83,979,383	164,875,952	183,882,384	168,760,672
D. APV of Accumulated Plan Benefits per FASB ASC 960	N/A	N/A	N/A	N/A	N/A	N/A
E. Plan Assets						
1. Market Value	402,426,005	221,542	52,925,494	101,693,775	125,275,305	122,309,889
2. Actuarial Value	382,523,777	210,586	50,308,031	96,664,446	119,079,737	116,260,977
F. Unfunded Actuarial Accrued Liability	219,485,867	300,667	33,671,352	68,211,506	64,802,647	52,499,695
G. APV of Projected Covered Payroll	327,963,616	-	79,105,035	76,284,699	95,038,660	77,535,222
H. APV of Projected Member Contributions	32,796,362	-	7,910,504	7,628,470	9,503,866	7,753,522
I. Accumulated Value of Member Contributions	27,752,812	-	6,521,842	11,903,867	5,619,069	3,708,034

## Actuarial Value of Benefits and Assets - Actuarial Valuation as of October 1, 2018

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. Actuarial Present Value (APV) of All Projected Benefits						
1. Active Members						
a. Service Retirement Benefits	\$ 150,810,502	\$ -	\$ 24,336,353	\$ 32,735,835	\$ 59,580,412	\$ 34,157,902
b. Vesting Benefits	5,899,593	-	1,398,880	2,240,835	814,098	1,445,780
c. Disability Benefits	2,208,309	-	401,057	387,295	814,903	605,054
d. Preretirement Death Benefits	3,939,040	-	729,432	575,243	1,458,418	1,175,947
e. Return of Member Contributions	3,441,956	-	869,984	1,984,270	481,820	105,882
f. Total	166,299,400	-	27,735,706	37,923,478	63,149,651	37,490,565
2. Inactive Members						
a. Service Retirees & Beneficiaries	431,458,339	511,253	64,020,751	125,398,790	122,793,971	118,733,574
b. Disability Retirees	16,913,528	-	557,719	3,716,386	8,893,873	3,745,550
c. Terminated Vested Members	7,512,195	-	1,136,694	3,493,073	2,308,715	573,713
d. DROP Account Balances	37,319,093	-	1,968,610	4,422,518	6,606,409	24,321,556
e. Total	493,203,155	511,253	67,683,774	137,030,767	140,602,968	147,374,393
3. Total for All Members	659,502,555	511,253	95,419,480	174,954,245	203,752,619	184,864,958
C. Actuarial Accrued (Past Service) Liability	601,716,410	511,253	83,979,383	164,875,952	183,882,384	168,467,438
D. APV of Accumulated Plan Benefits per FASB ASC 960	579,343,678	511,253	80,645,684	160,739,657	174,143,512	163,303,572
E. Plan Assets						
1. Market Value	402,426,005	221,542	52,925,494	101,693,775	125,275,305	122,309,889
2. Actuarial Value	382,523,777	210,586	50,308,031	96,664,446	119,079,737	116,260,977
F. Unfunded Actuarial Accrued Liability	219,192,633	300,667	33,671,352	68,211,506	64,802,647	52,206,461
G. APV of Projected Covered Payroll	328,128,401	-	79,105,035	76,284,699	95,038,660	77,700,007
H. APV of Projected Member Contributions	32,812,841	-	7,910,504	7,628,470	9,503,866	7,770,001
I. Accumulated Value of Member Contributions	27,752,812	-	6,521,842	11,903,867	5,619,069	3,708,034

## Calculation of Employer Normal Cost - Reflecting Proposed Ordinance and CBA

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. Normal Cost for						
1. Service Retirement Benefits	\$ 5,325,500	\$ -	\$ 1,024,533	\$ 892,444	\$ 1,983,688	\$ 1,424,835
2. Vesting Benefits	385,336	-	95,436	154,581	59,276	76,043
3. Disability Benefits	168,279	-	34,817	30,457	61,993	41,012
4. Preretirement Death Benefits	288,138	-	47,345	35,554	118,430	86,809
5. Return of Member Contributions	621,007	-	121,666	414,601	72,801	11,939
6. Total for Future Benefits	6,788,260	-	1,323,797	1,527,637	2,296,188	1,640,638
7. Assumed Amount for Administrative Expenses	484,359	285	63,443	124,862	149,924	145,845
8. Total Normal Cost	7,272,619	285	1,387,240	1,652,499	2,446,112	1,786,483
C. Expected Member Contribution	4,440,571	-	1,028,623	1,296,117	1,306,372	809,459
D. Employer Normal Cost: B8-C	2,832,048	285	358,617	356,382	1,139,740	977,024
E. Employer Normal Cost as a % of Covered Payroll	6.38%	N/A	3.49%	2.75%	8.72%	12.07%

## Calculation of Employer Normal Cost - Reflecting Proposed Ordinance

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. Normal Cost for						
1. Service Retirement Benefits	\$ 5,321,550	\$ -	\$ 1,024,533	\$ 892,444	\$ 1,983,688	\$ 1,420,885
2. Vesting Benefits	385,286	-	95,436	154,581	59,276	75,993
3. Disability Benefits	168,234	-	34,817	30,457	61,993	40,967
4. Preretirement Death Benefits	288,055	-	47,345	35,554	118,430	86,726
5. Return of Member Contributions	621,017	-	121,666	414,601	72,801	11,949
6. Total for Future Benefits	6,784,142	-	1,323,797	1,527,637	2,296,188	1,636,520
7. Assumed Amount for Administrative Expenses	484,359	285	63,443	124,862	149,924	145,845
8. Total Normal Cost	7,268,501	285	1,387,240	1,652,499	2,446,112	1,782,365
C. Expected Member Contribution	4,440,571	-	1,028,623	1,296,117	1,306,372	809,459
D. Employer Normal Cost: B8-C	2,827,930	285	358,617	356,382	1,139,740	972,906
E. Employer Normal Cost as a % of Covered Payroll	6.37%	N/A	3.49%	2.75%	8.72%	12.02%



## Calculation of Employer Normal Cost - Actuarial Valuation as of October 1, 2018

A. Valuation Date	October 1, 2018					
	<i>Total</i>	<i>Elected</i>	<i>General Excludable</i>	<i>General Non-Excludable</i>	<i>Police Officers</i>	<i>Firefighters</i>
B. Normal Cost for						
1. Service Retirement Benefits	\$ 5,265,395	\$ -	\$ 1,024,533	\$ 892,444	\$ 1,983,688	\$ 1,364,730
2. Vesting Benefits	388,947	-	95,436	154,581	59,276	79,654
3. Disability Benefits	169,251	-	34,817	30,457	61,993	41,984
4. Preretirement Death Benefits	288,481	-	47,345	35,554	118,430	87,152
5. Return of Member Contributions	620,962	-	121,666	414,601	72,801	11,894
6. Total for Future Benefits	6,733,036	-	1,323,797	1,527,637	2,296,188	1,585,414
7. Assumed Amount for Administrative Expenses	484,359	285	63,443	124,862	149,924	145,845
8. Total Normal Cost	7,217,395	285	1,387,240	1,652,499	2,446,112	1,731,259
C. Expected Member Contribution	4,440,571	-	1,028,623	1,296,117	1,306,372	809,459
D. Employer Normal Cost: B8-C	2,776,824	285	358,617	356,382	1,139,740	921,800
E. Employer Normal Cost as a % of Covered Payroll	6.25%	N/A	3.49%	2.75%	8.72%	11.39%

Participant Data						
October 1, 2018						
	Total	Elected	General Excludable	General Non-Excludable	Police Officers	Firefighters
<b>Active Members</b>						
Number	602	0	117	245	157	83
Covered Annual Payroll (expected)	\$ 44,405,705	\$ 0	\$ 10,286,229	\$ 12,961,170	\$ 13,063,718	\$ 8,094,588
Average Annual Salary	\$ 73,764	\$ 0	\$ 87,916	\$ 52,903	\$ 83,208	\$ 97,525
Average Age	41.4	0.0	45.7	43.3	37.8	36.4
Average Past Service	9.7	0.0	8.4	10.1	10.4	8.7
Average Age at Hire	31.7	0.0	37.3	33.2	27.4	27.7
<b>Service Retirees, Beneficiaries &amp; DROP Participants</b>						
Number	886	4	139	397	177	169
Annual Benefits	\$ 41,624,881	\$ 52,586	\$ 6,363,405	\$ 12,442,030	\$ 11,488,761	\$ 11,278,099
Average Annual Benefit	\$ 46,981	\$ 13,147	\$ 45,780	\$ 31,340	\$ 64,908	\$ 66,734
Average Age	65.4	71.7	67.9	67.3	63.5	60.9
<b>Disability Retirees</b>						
Number	55	0	2	20	23	10
Annual Benefits	\$ 2,024,387	\$ 0	\$ 93,574	\$ 474,145	\$ 992,016	\$ 464,652
Average Annual Benefit	\$ 36,807	\$ 0	\$ 46,787	\$ 23,707	\$ 43,131	\$ 46,465
Average Age	63.9	0.0	75.7	62.9	62.4	66.9
<b>Terminated Vested Members</b>						
Number	38	0	5	21	10	2
Annual Benefits	\$ 888,158	\$ 0	\$ 132,179	\$ 393,761	\$ 309,814	\$ 52,404
Average Annual Benefit	\$ 23,373	\$ 0	\$ 26,436	\$ 18,751	\$ 30,981	\$ 26,202
Average Age	48.0	0.0	47.6	48.8	46.5	48.9