

# CITY PENSION FUND FOR FIREFIGHTERS AND POLICE OFFICERS IN THE CITY OF MIAMI BEACH

ACTUARIAL VALUATION AS OF OCTOBER 1, 2016



**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

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May 3, 2017

Ms. Donna Brito  
Executive Director  
City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach  
1691 Michigan Avenue, Suite 355  
Miami Beach, Florida 33139

Dear Donna:

### **October 1, 2016 Actuarial Valuation**

We are pleased to present our October 1, 2016 Actuarial Valuation for the City Pension Fund for Firefighters and Police Officers in the City of Miami Beach. The purpose of this report is to indicate appropriate contribution levels, comment on the actuarial stability of the Fund and to satisfy State requirements. The Board of Trustees has retained Gabriel, Roeder, Smith and Company (GRS) to prepare an annual actuarial valuation under Section 63 of the Fund Ordinance.

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

### **Retirement Fund Costs**

Our Actuarial Valuation develops the required minimum Retirement Fund payment under the Florida Protection of Public Employee Retirement Benefits Act and for Fire and Police Retirement Chapters 175 and 185. The minimum payment consists of payment of annual normal costs including amortization of the components of the unfunded actuarial accrued liability over various periods as prescribed by law. The **minimum required contribution for fiscal year ending September 30, 2018 is \$43,653,658 (73.0% / 61.2%)**. The figures in parentheses is the Fund cost expressed as a percentage of projected annual pensionable payroll excluding DROP payroll (\$59,793,025) and projected annual pensionable payroll including DROP payroll (\$71,375,310) respectively for fiscal year ending September 30, 2018.

This total cost is to be met by member, City and State (Share Plan) contributions. We anticipate member contributions will be **\$6,013,721 (10.1% / 8.4%)**. The State (Share Plan) will contribute **\$120,549 (0.2% / 0.2%)** and the resulting minimum required City contribution will be **\$37,519,388 (62.7% / 52.6%)**. The City contribution does not include an interest adjustment

and must be increased if State contributions are less than \$120,549. The City contribution requirements reflect an annual City payment at the beginning of the fiscal year.

### **Changes in Actuarial Assumptions, Methods and Fund Benefits**

Fund provisions remain unchanged from the Fund provisions considered in the October 1, 2015 Actuarial Impact Statement. Fund provisions are summarized on Table IX. Changes from the prior Actuarial Valuation incorporated in the Actuarial Impact Statement are shown for informational purposes.

Assumed investment return has been updated to 7.85%, net of investment expenses, compounded annually.

The mortality assumption has been updated to use the mortality assumption used by the Florida Retirement System (FRS) as required under F.S., Chapter 2015-157 based upon the July 1, 2016 FRS Actuarial Valuation.

The remaining actuarial assumptions and methods are unchanged from the actuarial assumptions and methods utilized in the October 1, 2015 Actuarial Impact Statement. The actuarial assumptions and methods are outlined on Table X.

### **Comparison of October 1, 2015 Actuarial Impact Statement and October 1, 2016 Valuation Results**

Table II of our report provides information of a comparative nature. The left columns of the Table indicate the costs as calculated for October 1, 2015 Actuarial Impact Statement. The center columns indicate the costs as calculated for October 1, 2016, prior to the update in actuarial assumptions. The right columns indicate the costs as calculated for October 1, 2016, after the update in actuarial assumptions.

Comparing the left and center columns of Table II shows the effect of Fund experience during the year. The number of active participants decreased by approximately 3%. Projected pensionable payroll decreased by approximately 1%. Total Fund membership increased by approximately 1%. Total normal cost decreased as a dollar amount and remained unchanged as a percentage of projected pensionable payroll. The unfunded actuarial accrued liability decreased as a dollar amount and as a percentage of projected pensionable payroll. The net City minimum funding requirement increased as a dollar amount and as a percentage of projected pensionable payroll.

Comparing the center and right columns of Table II shows the effect of the update of the actuarial assumptions. Total normal cost, unfunded actuarial accrued liability, and net City minimum funding requirement increased both as a dollar amount and as a percentage of projected pensionable payroll.

The value of vested accrued benefits exceeds Fund assets, resulting in a Vested Benefit Security Ratio (VBSR) of 75.5% (78.1% before the update in actuarial assumptions) which is a decrease from 75.8% as of the October 1, 2015 Actuarial Impact Statement. The VBSR is measured on a market value of assets basis.

### **Fund Experience**

The Fund experienced an actuarial gain in the amount of \$11,275,664 this year. This indicates net Fund experience was more favorable than expected based upon the prior actuarial assumptions.

Table XVI (salary, turnover, mortality and investment yield) provides figures on recent Fund experience. Salary experience indicates actual salary increases averaged approximately 4.3% for Fund Year ended September 30, 2016. The average salary increase assumption was 4.4%. Salary increase experience was a source of actuarial gain. Three, five and ten-year average annual salary increases are 6.0%, 5.5% and 6.0%, respectively.

Employee turnover this year was approximately 100% of expected turnover based upon the prior turnover assumption and was generally neither a source of actuarial gain or loss. Three and five-year turnover has averaged 110% and 120% of assumed turnover, respectively.

Mortality this year was approximately 150% of the prior assumed mortality. Three and five-year mortality experience has averaged 120% and 110% of the prior assumed mortality, respectively. As previously stated, the mortality assumption has been updated in compliance with State statute.

This year's smoothed value investment return of 9.62% exceeded the Fund's prior year investment return assumption of 7.90%. Smoothed investment return was a source of actuarial gain during the year. Three, five and ten-year average annual investment returns are 9.8%, 8.3% and 6.6%, respectively on a smoothed actuarial value basis. Average annual market value returns for the one, three, five and ten-year periods have been 9.49%, 6.8%, 10.6% and 6.6%, respectively.

The Funded Ratio based on the actuarial accrued liability compared to the smoothed actuarial value of assets remained unchanged from the prior year Actuarial Impact Statement at 72.3% (74.6% prior to the actuarial assumption changes).

### **Member Census and Financial Data**

The Board submitted the Member census data as of October 1, 2016 used for this actuarial valuation to us. This information contains name, Social Security number, date of birth, date of hire, October 1, 2016 rate of pay and member contributions for the previous year. Dates of

termination and retirement are provided where applicable. The Board updated information on inactive participants including retirees, beneficiaries and vested terminees.

We received financial information as of September 30, 2016 concerning Fund assets from the Fund Auditors. We do not audit the Member census data and asset information that is provided to us; however, we perform certain reasonableness checks. We are not otherwise responsible for the accuracy of the data.

### **Summary**

In our opinion the benefits provided for under the Fund 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 future payment requirements for the Fund through future Actuarial Valuation reports. In addition, these reports will continue to monitor future experience of the Fund.

The actuarial assumptions used in this Actuarial Valuation are as adopted by the Board. The demographic actuarial assumptions are based on the results of an Experience Study for the period October 1, 2009 – September 30, 2014. The investment return assumption is based upon a Capital Market Assumption Study completed in 2014 and based upon recommendations from the Investment Consultant. Each assumption represents an estimate of future Fund experience.

If all actuarial assumptions are met and if all future minimum required contributions are paid, Fund assets will be sufficient to pay all Fund benefits, future contributions are expected to remain relatively stable as a percent of payroll and the funded status is expected to improve. Fund 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 closed amortization period of 30 years.

The Unfunded Actuarial Accrued Liability (UAAL) and the Funded Ratio may not be appropriate for assessing the sufficiency of Fund 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 and Funded Ratio would be different if it reflected the market value of assets rather than the smoothed actuarial value of assets.

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

The Government Accounting Standards Board Net Pension Liability and Fund Fiduciary Net Position as a Percentage of Total Pension Liability may not be appropriate for assessing the

sufficiency of Fund 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.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: Fund experience differing from anticipated under the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period) and changes in Fund provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

This report should not be relied on for any purpose other than the purpose described in the primary communication. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

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 Fund 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 Board only in its entirety and only with the permission of an approved representative of the Board.

The signing actuaries are independent of the Fund sponsor.

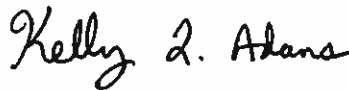
The undersigned are Members of the American Academy of Actuaries and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. We are available to respond to any questions with regards to matters covered in this report.

Very truly yours,



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



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Kelly L. Adams, A.S.A.  
Consultant and Actuary

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Summary of Pension Fund Costs as of October 1, 2016**

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost Data</u>	<u>% of Projected Pensionable Payroll</u>	<u>Cost Data</u>	<u>% of Projected Pensionable Payroll</u>
<b>A. Participant Data Summary (Table III)</b>				
1. Active Employees	494	N/A	494	N/A
2. Terminated Vested	25	N/A	25	N/A
3. Receiving Benefits (including DROPs)	742	N/A	742	N/A
4. Annual Pensionable Payroll <sup>1</sup>	\$ 58,277,802	97.5%	\$ 58,277,802	97.5%
5. Projected Annual Pensionable Payroll <sup>2</sup>	59,793,025	100.0%	59,793,025	100.0%
6. Projected Annual Pensionable Payroll including DROP <sup>3</sup>	71,375,310	119.4%	71,375,310	119.4%
<b>B. Total Normal Costs</b>				
1. Age Retirement Benefits	\$ 13,438,403	22.5%	\$ 13,769,894	23.0%
2. Termination Benefits	965,359	1.6%	996,728	1.7%
3. Death Benefits	445,008	0.7%	589,757	1.0%
4. Disability Benefits	2,030,147	3.4%	2,174,603	3.6%
5. Estimated Expenses	826,044	1.4%	826,044	1.4%
6. Total Annual Normal Costs	\$ 17,704,961	29.6%	\$ 18,357,026	30.7%
<b>C. Total Actuarial Accrued Liability</b>				
1. Age Retirement Benefits Active Employees	\$ 203,288,575	340.0%	\$ 208,301,151	348.4%
2. Termination Benefits Active Employees	3,581,039	6.0%	3,712,081	6.2%
3. Death Benefits Active Employees	1,162,369	1.9%	1,992,941	3.3%
4. Disability Benefits Active Employees	9,921,045	16.6%	10,753,680	18.0%
5. Retired or Terminated Vested Participants Receiving Benefits (including DROPs)	786,468,103	1315.3%	808,781,158	1352.6%
6. Terminated Vested Participants Entitled to Future Benefits	3,257,773	5.4%	3,277,939	5.5%
7. Deceased Participants Whose Beneficiaries are Receiving Benefits	44,624,516	74.6%	46,673,753	78.1%
8. Disabled Participants Receiving Benefits	42,203,910	70.6%	45,983,881	76.9%
9. Miscellaneous Liability (Refunds in Process)	0	0.0%	0	0.0%
10. Total Actuarial Accrued Liability	\$ 1,094,507,330	1830.5%	\$ 1,129,476,584	1889.0%

<sup>1</sup> Annual Pensionable Payroll - Participant's pensionable pay for year ending September 30th increased by assumed salary increases to reflect pay increases.

<sup>2</sup> Projected Annual Pensionable Payroll - Annual Pensionable Payroll projected to the end of year (and beginning of fiscal year for which the city contributions are determined) by assuming an aggregate increase in payroll of 2.6%.

<sup>3</sup> Projected Annual Pensionable Payroll including DROP - Projected Annual Pensionable Payroll plus DROP participants pay for year ending September 30th increased by assumed salary increases to reflect pay increases then projected to the end of the year assuming an aggregate increase in payroll of 2.6%.



City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach

Summary of Retirement Plan Costs as of October 1, 2016

	Prior Assumptions		Current Assumptions	
	Cost Data	% of Projected Pensionable Payroll	Cost Data	% of Projected Pensionable Payroll
<b>D. Assets (Table V)</b>				
1. Smoothed Actuarial Value of Assets	\$ 816,917,537	1366.2%	\$ 816,917,537	1366.2%
2. Market Value of Assets	\$ 806,424,132	1348.7%	\$ 806,424,132	1348.7%
<b>E. Unfunded Actuarial Accrued Liability (C. - D.1.)</b>	\$ 277,589,793	464.3%	\$ 312,559,047	522.7%
<b>F. Preliminary Minimum Required Contribution</b>				
1. Total Normal Cost (including expenses)	\$ 17,704,961	29.6%	\$ 18,357,026	30.7%
2. Amortization of Unfunded Liability	21,681,603	36.3%	23,796,708	39.8%
3. Interest Adjustment	220,150	0.4%	218,858	0.4%
4. Expected Service Buyback	174,833	0.3%	174,833	0.3%
5. Total Preliminary Minimum Required Contribution	\$ 39,781,547	66.5%	\$ 42,547,425	71.2%
<b>G. Expected Payroll of Active Employees for 2017-2018 Fund Year (A.5)</b>	\$ 59,793,025	100.0%	\$ 59,793,025	100.0%
<b>H. Contribution Sources for Fiscal Year Ending September 30, 2018</b>				
1. City	\$ 34,681,597	58.0%	\$ 37,519,388	62.7%
2. State (Share Plan)	\$ 120,549	0.2%	\$ 120,549	0.2%
3. Member	\$ 6,013,721	10.1%	\$ 6,013,721	10.1%
<b>I. City Contribution (% of Projected Annual Pensionable Payroll including DROP)</b>	\$ 34,681,597	48.6%	\$ 37,519,388	52.6%
<b>J. Actuarial Gain / (Loss)</b>	\$ 11,275,664	18.9%	\$ 11,275,664	18.9%
<b>K. Actuarial Present Value of Vested Accrued Benefits</b>				
1. Retired, Terminated Vested, Beneficiaries and Disabled Receiving Benefits (including DROPs)	\$ 873,296,529	1460.5%	\$ 901,438,792	1507.6%
2. Terminated Vested Participants Entitled to Future Benefits and Miscellaneous	3,257,773	5.4%	3,277,939	5.5%
3. Active Participants Entitled to Future Benefits	156,644,689	262.0%	162,967,340	272.6%
4. Total Actuarial Present Value of Vested Accrued Benefits	\$ 1,033,198,991	1728.0%	\$ 1,067,684,071	1785.6%
<b>L. Unfunded Actuarial Present Value of Vested Accrued Benefits (K. - D.2., not less than zero)</b>	\$ 226,774,859	379.3%	\$ 261,259,939	436.9%
<b>M. Vested Benefit Security Ratio (D.2. ÷ K.)</b>	78.1%	N/A	75.5%	N/A

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Comparison of Cost Data of October 1, 2015 Actuarial Impact Statement and October 1, 2016 Valuations**

	Actuarial Impact Statement October 1, 2015		Prior Assumptions October 1, 2016		Current Assumptions October 1, 2016	
	Cost Data	% of Projected Pensionable Payroll	Cost Data	% of Projected Pensionable Payroll	Cost Data	% of Projected Pensionable Payroll
<b>A. Participants</b>						
1. Active Employees	508	N/A	494	N/A	494	N/A
2. Terminated Vested	20	N/A	25	N/A	25	N/A
3. Receiving Benefits (including DROPs)	724	N/A	742	N/A	742	N/A
4. Projected Annual Pensionable Payroll	\$ 60,477,959	100.0%	\$ 59,793,025	100.0%	\$ 59,793,025	100.0%
5. Projected Annual Pensionable Payroll (including DROPs)	\$ 69,222,673	114.5%	\$ 71,375,310	119.4%	\$ 71,375,310	119.4%
<b>B. Present Value of Future Benefits</b>	\$ 1,220,841,717	2018.7%	\$ 1,262,967,708	2112.2%	\$ 1,304,067,417	2181.0%
<b>C. Total Normal Costs</b>	\$ 17,931,596	29.6%	\$ 17,704,961	29.6%	\$ 18,357,026	30.7%
<b>D. Actuarial Accrued Liability</b>	\$ 1,050,154,648	1736.4%	\$ 1,094,507,330	1830.5%	\$ 1,129,476,584	1889.0%
<b>E. Fund Assets</b>						
1. Market Value of Assets	\$ 750,617,498	1241.1%	\$ 806,424,132	1348.7%	\$ 806,424,132	1348.7%
2. Smoothed Actuarial Value of Assets	\$ 759,327,614	1255.5%	\$ 816,917,537	1366.2%	\$ 816,917,537	1366.2%
<b>F. Unfunded Actuarial Accrued Liability</b>	\$ 290,827,034	480.9%	\$ 277,589,793	464.3%	\$ 312,559,047	522.7%
<b>G. City Minimum Funding Payment     (% of Projected Annual Payroll including DROP)</b>	\$ 34,144,451	56.5% 49.3%	\$ 34,681,597	58.0% 48.6%	\$ 37,519,388	62.7% 52.6%
<b>H. Vested Benefit Security Ratio</b>	75.8%	N/A	78.1%	N/A	75.5%	N/A

**Table III**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Characteristics of Participants in  
Actuarial Valuation as of October 1, 2016**

**A. Active Fund Participants Summary**

1. Active participants fully vested	329
2. Active participants partially vested	0
3. Active participants non-vested	165
4. Total active participants	<u>494</u>
5. Annual Pensionable Payroll	\$ 58,277,802
6. Projected Annual Pensionable Payroll	\$ 59,793,025
7. Projected Annual Pensionable Payroll (Including DROPs)	\$ 71,375,310

**B. Retired and Terminated Vested Participant Summary**

1. Retired or terminated vested participants receiving benefits (including DROPs)	569
2. Terminated vested participants entitled to future benefits	25
3. Beneficiaries receiving benefits	121
4. Disabled participants receiving benefits	52

**C. Projected Annual Retirement Benefits**

1. Retired or terminated vested receiving benefits (including DROPs)	\$ 55,600,227
2. Terminated vested entitled to future benefits	\$ 317,737
3. Beneficiaries of deceased participants	\$ 4,935,798
4. Disabled participants	\$ 3,622,291

Table IV

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Statement of Assets as of October 1, 2016**

<u>Assets</u>	<u>Market Value</u>
A. <u>Cash and Cash Equivalents</u>	\$ 20,951
B. <u>General Investments</u>	
1. Short Term Investments	\$ 5,860,046
2. U.S. Government Securities	64,658,443
3. Common Stocks	342,649,084
4. Domestic Equity Fund	76,730,314
5. International Equity Fund	29,484,393
6. Domestic Corporate Bonds	175,131,361
7. International Fixed Income	47,144,078
8. Real Estate Fund	42,306,906
9. Mutual Funds Self-Directed DROP Participants	19,626,380
C. <u>Receivables</u>	
1. Accrued Interest	\$ 2,718,007
2. Due from Broker	1,754,543
3. Member Buybacks	0
D. <u>Payables</u>	
1. Accounts Payable	\$ 392,680
2. Due to Broker	1,267,694
E. <u>Total Assets</u> (A. + B. + C. - D.)	\$ 806,424,132

Table V

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Reconciliation of Plan Assets**

<b>A. <u>Market Value of Assets as of October 1, 2015</u></b>		<b>\$ 750,617,498</b>
<b>B. <u>Receipts During Period</u></b>		
1. Contributions		
a. Member	\$ 5,706,014	
b. Buybacks	278,383	
c. City	34,850,092	
d. State (Share Plan)	120,549	
e. Total	\$ 40,955,038	
2. Investment Income		
a. Interest and dividends	\$ 17,156,573	
b. Realized gains	8,615,935	
c. Unrealized gains	48,010,797	
d. Investment expenses	(3,244,005)	
e. Net investment income	\$ 70,539,300	
3. Total receipts during period		<b>\$ 111,494,338</b>
<b>C. <u>Disbursements During Period</u></b>		
1. Pension payments	\$ 54,729,245	
2. DROP distributions	132,415	
3. Contribution refunds	0	
4. Administrative expenses	826,044	
5. Total disbursements during period	\$ 55,687,704	
<b>D. <u>Market Value of Assets as of September 30, 2016</u></b>		<b>\$ 806,424,132</b>
<b>E. <u>Reconciliation of DROP Account Balances</u></b>		
1. DROP Accounts Balance as of October 1, 2015	\$ 11,437,162	
2. Benefit Payments into DROP Accounts during Year	7,364,295	
3. Investment Gains / (Losses) during Year	957,338	
4. Distributions from DROP Accounts during Year	(132,415)	
5. DROP Accounts Balance as of September 30, 2016	\$ 19,626,380	

City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach

Development of Smoothed Value of Assets as of September 30

	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
A. Preliminary smoothed value of assets prior year	\$ 721,567,277	\$ 759,327,614	\$ 816,917,537			
B. Market value of assets beginning of year	769,298,572	750,617,498	806,424,132			
C. Market value of assets end of year	750,617,498	\$ 806,424,132				
D. Non-investment net cash flow	(24,370,407)	\$ (14,732,666)				
E. Investment return						
1. Market value return: C. - B. - D.	5,689,333	70,539,300				
2. Amount for immediate recognition (7.95% / 7.90%)	60,190,513	58,716,842				
3. Amount for phased-in recognition: E.1. - E.2.	(54,501,180)	11,822,458				
F. Phased-in recognition of investment return						
1. Current year: 20% of E.3.	(10,900,236)	2,364,492				
2. First prior year	3,192,985	(10,900,236)	2,364,492			
3. Second prior year	6,363,369	3,192,985	(10,900,236)	2,364,492		
4. Third prior year	12,585,137	6,363,369	3,192,985	(10,900,236)	2,364,492	
5. Fourth prior year	(9,301,024)	12,585,137	6,363,367	3,192,985	(10,900,236)	2,364,490
6. Total phased-in recognition of investment return	1,940,231	13,605,747	1,020,608	(5,342,759)	(8,535,744)	2,364,490
G. Smoothed value of assets end of year						
1. Preliminary smoothed value of assets end of year:						
A. + D. + E.2. + F.6.	759,327,614	816,917,537				
2. Upper corridor limit: 120% of C.	900,740,998	967,708,958				
3. Lower corridor limit: 80% of C.	600,493,998	645,139,306				
4. Smoothed value of assets end of year:						
G.1., not more than G.2., nor less than G.3.	759,327,614	816,917,537				
H. Difference - market value less smoothed value	(8,710,116)	(10,493,405)				
I. Smoothed value rate of return	8.76%	9.62%				
J. Market value rate of return	0.75%	9.49%				

Table VI

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Actuarial Gain / (Loss) for Fund Year  
Ended September 30, 2016**

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

1. Employer normal cost previous actuarial impact statement	\$ 11,859,508
2. Unfunded actuarial accrued liability previous actuarial impact statement	\$ 290,827,034
3. Employer contributions previous year:	
(a) City	\$ 34,850,092
(b) State	120,549
(c) Total	\$ 34,970,641
4. Interest on:	
(a) Employer normal cost	\$ 936,901
(b) Unfunded actuarial accrued liability	22,975,336
(c) Employer contributions	2,762,681
(d) Net total: (a) + (b) - (c)	\$ 21,149,556
5. Increase / (decrease) due to assumption changes	\$ 34,969,254
6. Expected unfunded actuarial liability current year:	
(1. + 2. - 3. + 4. + 5.)	\$ 323,834,711
7. Actual unfunded actuarial liability current year	312,559,047
8. Actuarial gain / (loss): (6. - 7.)	\$ 11,275,664

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

1. Smoothed actuarial value of assets previous year	\$ 759,327,614
2. Contributions during period	40,955,038
3. Benefits, refunds and administrative expenses during period	55,687,704
4. Expected net appreciation for period	60,786,282
5. Expected smoothed actuarial value assets current year:	
(1. + 2. - 3. + 4.)	\$ 805,381,230
6. Actual smoothed actuarial value of assets current year	\$ 816,917,537
7. Approximate gain / (loss) due to investments: (6. - 5.)	\$ 11,536,307

**C. Approximate Portion of Gain / (Loss) due to Liabilities: (A. - B.)** \$ (260,643)

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Amortization of Unfunded Actuarial Accrued Liability**

A. Unfunded Actuarial Accrued Liability

<u>Valuation Date</u>	<u>Unfunded Liability</u>	<u>Amortization Payment</u>
October 1, 2016	\$ 312,559,047	\$ 23,796,708
October 1, 2017	\$ 311,430,185	\$ 24,415,425
October 1, 2018	\$ 309,545,417	\$ 25,050,228
October 1, 2019	\$ 306,828,060	\$ 25,701,534
October 1, 2020	\$ 303,194,958	\$ 26,369,773
October 1, 2021	\$ 298,555,964	\$ 27,055,386
October 1, 2022	\$ 292,813,374	\$ 27,758,828
October 1, 2023	\$ 285,861,330	\$ 28,480,558
October 1, 2024	\$ 277,585,162	\$ 29,221,049
October 1, 2025	\$ 267,860,697	\$ 29,980,795
October 1, 2026	\$ 256,553,474	\$ 30,760,295
October 1, 2027	\$ 243,517,944	\$ 31,560,065
October 1, 2028	\$ 228,596,572	\$ 32,380,626
October 1, 2029	\$ 211,618,901	\$ 33,222,521
October 1, 2030	\$ 192,400,497	\$ 34,086,291
October 1, 2031	\$ 170,741,869	\$ 33,395,610
October 1, 2032	\$ 148,127,942	\$ 32,493,696
October 1, 2033	\$ 124,711,532	\$ 28,632,321
October 1, 2034	\$ 103,621,429	\$ 24,522,079
October 1, 2035	\$ 85,308,647	\$ 25,382,275
October 1, 2036	\$ 64,630,591	\$ 23,901,395
October 1, 2037	\$ 43,926,438	\$ 21,279,390
October 1, 2038	\$ 24,424,843	\$ 16,790,041
October 1, 2039	\$ 8,234,134	\$ 5,418,156
October 1, 2040	\$ 3,037,032	\$ 2,730,463
October 1, 2041	\$ 330,635	\$ 330,635
October 1, 2042	\$ -	\$ -
October 1, 2043	\$ -	\$ -
October 1, 2044	\$ -	\$ -
October 1, 2045	\$ -	\$ -
October 1, 2046	\$ -	\$ -



**Table VII  
(Cont'd)**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**B. Covered Payroll History**

<u>Year Ended</u>	<u>Pensionable Payroll</u>	<u>Annual Increase</u>
September 30, 2016	\$ 56,759,632	0.4%
September 30, 2015	\$ 56,545,113	11.4%
September 30, 2014	\$ 50,740,542	7.6%
September 30, 2013	\$ 47,164,030	(11.5%)
September 30, 2012	\$ 53,273,735	8.6%
September 30, 2011	\$ 49,041,435	(0.2%)
September 30, 2010	\$ 49,144,179	(2.5%)
September 30, 2009	\$ 50,393,490	2.4%
September 30, 2008	\$ 49,192,010	5.4%
September 30, 2007	\$ 46,668,370	6.5%
September 30, 2006	\$ 43,816,180	N/A
 Ten-Year Average Annual Increase		 2.6%

Table VIII

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Accounting Disclosure Exhibit**

	<b>Actuarial Impact Statement 10/01/2015</b>	<b>Prior Assumptions 10/01/2016</b>	<b>Current Assumptions 10/01/2016</b>
<b>I. <u>Number of Fund Members</u></b>			
a. Retirees and beneficiaries receiving benefits	724	742	742
b. Terminated fund members entitled to but not yet receiving benefits (including dormant members)	20	25	25
c. Active fund members	508	494	494
d. Total	<u>1,252</u>	<u>1,261</u>	<u>1,261</u>
<b>II. <u>Financial Accounting Standards Board Allocation as of October 1, 2016</u></b>			
<b>A. <u>Statement of Accumulated Fund Benefits</u></b>			
1. Actuarial present value of accumulated vested plan benefits			
a. Participants currently receiving benefits	\$ 820,673,464	\$ 873,296,529	\$ 901,438,792
b. Other participants	170,106,822	159,902,462	166,245,279
c. Total	<u>\$ 990,780,286</u>	<u>\$ 1,033,198,991</u>	<u>\$ 1,067,684,071</u>
2. Actuarial present value of accumulated non-vested plan benefits	<u>\$ 5,657,726</u>	<u>\$ 6,866,582</u>	<u>\$ 6,812,616</u>
3. Total actuarial present value of accumulated fund benefits	<u>\$ 996,438,012</u>	<u>\$ 1,040,065,573</u>	<u>\$ 1,074,496,687</u>
<b>B. <u>Statement of Change in Accumulated Fund Benefits</u></b>			
1. Actuarial present value of accumulated fund benefits as of October 1, 2015			\$ 996,438,012
2. Increase / (decrease) during year attributable to:			
a. Plan amendment			\$ (6,486,103)
b. Change in actuarial assumptions			34,431,114
c. Benefits paid including refunds			(54,861,660)
d. Other, including benefits accumulated, increase for interest due to decrease in the discount period			<u>104,975,324</u>
e. Net increase			\$ 78,058,675
3. Actuarial present value of accumulated fund benefits as of October 1, 2016			\$ 1,074,496,687
<b>C. <u>Significant Matters Affecting Calculations</u></b>			
1. Assumed rate of return used in determining actuarial present values			7.85%
2. Change in plan provisions			See Table IX, Item Q.
3. Change in actuarial assumptions and methods			See Table X, Item O.

City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach

Accounting Disclosure Exhibit

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

Measurement date	9/30/2014	9/30/2015	9/30/2016	Projected 9/30/2017 *
<b>A. Total Pension Liability (TPL)</b>				
Service Cost	\$ 14,763,595	\$ 16,098,560	\$ 17,803,602	\$ 17,530,982
Interest	75,108,912	78,415,039	82,627,847	87,795,699
Benefit Changes	0	0	0	(9,688,441)
Difference Between Actual and Expected Experience	7,685,043	12,428,547	14,588,712	141,740
Assumption Changes	0	5,686,196	2,447,885	34,969,254
Benefit Payments including Refunds of Member Contributions	(53,605,094)	(62,686,716)	(54,861,660)	(57,182,029)
Net Change in Total Pension Liability	\$ 43,952,456	\$ 49,941,626	\$ 62,606,386	\$ 73,567,205
Total Pension Liability (TPL) - (beginning of year)	947,553,563	991,506,019	1,041,447,645	1,104,054,031
Total Pension Liability (TPL) - (end of year)	<u>\$ 991,506,019</u>	<u>\$ 1,041,447,645</u>	<u>\$ 1,104,054,031</u>	<u>\$ 1,177,621,236</u>
<b>B. Fund Fiduciary Net Position</b>				
Contributions - City and State	\$ 35,960,326	\$ 33,149,388	\$ 34,970,641	\$ 34,265,000
Contributions - Member	5,258,974	5,944,414	5,984,397	5,861,327
Net Investment Income	72,259,674	5,689,333	70,539,300	63,947,337
Benefit Payments including Refunds of Member Contributions	(53,605,094)	(62,686,716)	(54,861,660)	(57,182,029)
Administrative Expenses	(905,130)	(777,493)	(826,044)	(826,044)
Other	0	0	0	0
Net Change in Fund Fiduciary Net Position	\$ 58,968,750	\$ (18,681,074)	\$ 55,806,634	\$ 46,065,591
Fund Fiduciary Net Position - (beginning of year)	710,329,822	769,298,572	750,617,498	806,424,132
Fund Fiduciary Net Position - (end of year)	<u>\$ 769,298,572</u>	<u>\$ 750,617,498</u>	<u>\$ 806,424,132</u>	<u>\$ 852,489,723</u>
<b>C. Net Pension Liability (NPL) - (end of year): (A) - (B)</b>	\$ 222,207,447	\$ 290,830,147	\$ 297,629,899	\$ 325,131,513
<b>D. Fund Fiduciary Net Position as a Percentage of TPL: (B) / (A)</b>	77.59 %	72.07 %	73.04 % **	72.39 %
<b>E. Covered Employee Payroll ***</b>	\$ 50,740,542	\$ 56,545,113	\$ 56,759,632	\$ 58,277,802
<b>F. NPL as a Percentage of Covered Employee Payroll: (C) / (E)</b>	437.93 %	514.33 %	524.37 %	557.90 %

G. Notes to Schedule:

Valuation Date 10/01/2013 10/01/2014 10/01/2015 10/01/2016

Update procedures used to roll forward TPL excluding DROP account balances to the measurement dates - actual DROP account balances as of measurement dates included in TPL.

See next page for benefit changes

See next page for assumption and / or method changes

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

\*\* The percentage projected in the prior year's valuation report was 71.78% assuming no gains or losses on assets or benefit payments. The information in this footnote is shown as requested by the Board and is not a required disclosure under GASB No. 67.

\*\*\* Reported payroll used to determine contribution as provided under GASB No. 82.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Accounting Disclosure Exhibit**

III. Notes to Schedule of Net Pension Liability and Related Ratios (GASB No. 67)  
(con't.)

**Benefit Changes**

For 9-30-2017 a Tier 4 was added for Fire Department members hired on or after June 8, 2016 and Police Department members hired on or after July 20, 2016. Tier 4 members Final Average Monthly Earnings (FAME) is average of the 5 highest paid years prior to date of retirement taking into consideration the overtime limit, the Normal Retirement eligibility is earlier of attainment of age 52 with 5 years of creditable service or Rule of 70 but must be at least attained age 48. Members currently participating in the DROP were permitted to extend DROP participation but no COLA will be paid during the extended years of participation. Member who elect the DROP in the future can participate for up to 96 months - no COLA will be provided for the first through fourth year of DROP participation for these members.

**Assumption Changes**

For 9-30-2017, investment return was decreased from 7.90% to 7.85% and the mortality assumption was updated to the assumption used in the Florida Retirement System July 1, 2016 Actuarial Valuation. For 9-30-2016, investment return was decreased from 7.95% to 7.90%, withdrawal and retirement rates were updated, disability incidence was updated to 65% service incurred / 35% non-service incurred and the load for compensation and projected pensionable payroll was replaced with actual pensionable pay - these changes do not affect the contribution until the fiscal year ending 9-30-2017. For 9-30-2015, investment return was decreased from 8.00% to 7.95% and payroll growth assumption was limited to 10 year average.

**Table VIII  
(Cont'd)**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Accounting Disclosure Exhibit**

**IV. Schedule of Employer Contributions (GASB No. 67)**

<u>Fiscal Year Ended 9/30</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered Payroll <sup>1</sup></u>	<u>Actual Contribution as a % of Covered Payroll</u>
2007	15,231,417	15,231,417	0	46,668,370	32.64%
2008	17,618,045	17,618,045	0	49,192,010	35.81%
2009	20,159,995	20,159,995	0	50,393,490	40.01%
2010	23,403,818	23,403,818	0	49,144,179	47.62%
2011	32,811,570	32,811,570	0	49,041,435	66.91%
2012	36,297,459	36,297,459	0	53,273,735	68.13%
2013	39,492,050	39,492,050	0	47,164,030	83.73%
2014	35,960,326	35,960,326	0	50,740,542	70.87%
2015	33,149,388	33,149,388	0	56,545,113	58.62%
2016	34,970,641	34,970,641	0	56,759,632	61.61%
2017 <sup>2</sup>	34,265,000	34,265,000	0	58,277,802	58.80%

<sup>1</sup> Reported payroll used to determine contribution as provided under GASB Statement No. 82

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

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Accounting Disclosure Exhibit**

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

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

**Methods and Assumptions Used to Determine Contribution Rates:**

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage, Closed
Amortization Period	30 years
Asset Valuation Method	5-year smoothed market
Inflation	3.0%
Payroll Growth	3.3%
Salary Increases	0.7% - 10.7%
Investment Rate of Return	7.90%

Retirement Age Experience-based table of rates that are specific to the type of eligibility condition

Mortality For healthy participants, RP-2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with Blue Collar Adjustment and projected 15 years from valuation date for pre-retirement mortality and 7 years from valuation date for post-retirement mortality with projection Scale AA.

For disabled participants, RP-2000 Disabled Mortality Tables, separate rates for males and females, without projection for future mortality improvements.

Cost-of-Living Increases 1.5%, 2.0% or 2.5%

**Other Information:**

**Benefit Changes**

In 2013, participants were categorized into different Tiers: Tier 1 - members hired prior to July 14, 2010, Tier 2 - members hired on or after July 14, 2010 but prior to September 30, 2013 and Tier 3 - members hired on or after September 30, 2013. Final average monthly earnings (FAME) were updated to the greater of the average of the 2 highest paid years prior to date of retirement or the 2 last paid years after taking into consideration the overtime limit (Tier 1 and eligible to retire prior to September 30, 2015), the greater of the average of the 3 highest paid years prior to date of retirement or the 3 last paid years after taking into consideration the overtime limit (Tier 1 and eligible to retire on or after September 30, 2015), the greater of the average of the 3 highest paid years prior to date of retirement or the 3 last paid years after taking into consideration the overtime limit (Tier 2) and the greater of the average of the 5 highest paid years prior to date of retirement or the 5 last paid years after taking into consideration the overtime limit (Tier 3). Normal retirement eligibility was updated to the earlier of attainment of age 50 or Rule of 70 (Tier 1 and eligible to retire prior to September 30, 2013), the earlier of attainment of age 50 or Rule of 70 and attainment of age 47 (Tier 1 and eligible to retire on or after September 30, 2013) and the earlier of attainment of age 50 or Rule of 70 and attainment of age 48 (Tier 2 and 3). Benefits were updated to not exceed 85% of FAME (if eligible to retire on or after September 30, 2013) unless exceeded 85% as of September 30, 2013 (Tier 1 and eligible to retire on or after September 30, 2013 but prior to September 30, 2015). Pensionable salary was updated to exclude overtime pay in excess of 300 hours per calendar year, withdrawal benefit eligibility was updated to any age prior to 50 with at least 5 years of service for members who terminate employment on or after September 30, 2013, member contributions were updated to 10.0% of salary per year for members hired prior to September 30, 2013 and 10.5% of salary per year for members hired on or after September 30, 2013, members will no longer be able to purchase an additional multiplier or pre-employment public safety service as a police officer or firefighter and overtime for police officer's was limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at the time of retirement.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Accounting Disclosure Exhibit**

**Other Information:**

**Benefit Changes (cont'd)**

In 2010, for members who enter the DROP on or after September 1, 2012, the DROP period was updated to a maximum of 60 months and a 2.5% COLA will be paid annually on the anniversary date of the member's retirement. Pensionable pay was updated to include off-duty pay, overtime for police officers was limited in each year to an amount that is equal to 70% of the difference between the member's annualized pay rate at retirement and the highest annualized pay rate for the next higher salary rank, overtime for firefighters was limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at the time of retirement and members with ten or more years of service were allowed to purchase up to four years of pre-employment military service, up to two years pre-employment public safety service, or either 3% or 6% additional benefit multiplier. In 2010, for new hires on or after July 14, 2010, the pension multiplier was updated to 3% for each year of service up to 20 years and 4% for each year of service thereafter (subject to a maximum of 90%), the Rule of 70 retirement was updated to state that members must attain age 48 to be eligible, final average salary was updated to the three highest paid years of last three years prior to retirement and the cost of living adjustment was updated to 1.5% annually.

**Assumption Changes**

In 2015, investment return was decreased from 7.95% to 7.90%, withdrawal and retirement rates were updated, disability incidence was updated to 65% service incurred / 35% non-service incurred and the load for compensation and projected pensionable payroll was replaced with actual pensionable pay - these changes do not affect the contribution until the fiscal year ending September 30, 2017. In 2014, investment return was decreased from 8.00% to 7.95% and payroll growth assumption was limited to 10 year average. In 2013, the asset valuation method was updated to phase in the deviation between the expected and actual return on assets at the rate of 20% per year and the load for projected pensionable payroll was decreased to 16%. In 2012, investment return was updated to 8.0%, expected salary increases for final years 2013 and 2014 were reduced by 2.17% and increased by 3.00% respectively, contingency compensation load for overtime and other pays was decreased to 16% and contingency pre-employment service load was decreased to 0.275%. In 2011, investment return was updated to 8.1%, mortality tables for healthy pre and post retirement participants were projected 15 and 7 years from the valuation date and the contingency compensation load for overtime and other pays was increased to 18%. In 2010, investment return was updated to 8.2% and the freeze on the cost of living increase component of the salary scale was extended to March 31, 2012. In 2009, investment return was updated to 8.3%, mortality rates were changed to the RP-2000 Combined Mortality Table with a blue collar adjustment for healthy lives and the RP-2000 Disabled Mortality table for disabled participants, a 20% load was added to the projected base payroll, retirement and withdrawal rates were updated to reflect the results of the October 1, 2003 through October 1, 2008 experience study, salary increase rates were updated to 3.83% for plan year 2009 and 6.0% for all subsequent plan years and the load for overtime and other pays was updated to 16%. In 2008, investment return was updated to 8.5%, the salary scale was reduced by 50 basis points, loadings for contingencies were increased by 100 basis points and the retirement assumption was updated to reflect an increase in the level of retirements starting at age 45. In 2005, *fresh start* method was applied, retirement rates were increased to reflect actual retirement experience and loadings for contingencies and pre-employment service was updated to 7.0% and 5.5% respectively.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Accounting Disclosure Exhibit**

VI. Discount Rate (GASB No. 67)

Discount rates of 7.90% and 7.85% were used to measure the September 30, 2016 TPL and the September 30, 2017 TPL, respectively. These discount rates were based on the expected rate of return on Fund investments of 7.90% and 7.85%, respectively. 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 Fund's fiduciary net position was projected to be available to make all projected future expected benefit payments to current Fund members. Therefore, the long-term expected rate of return on Fund 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)

Measurement date: September 30, 2016

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.90%	7.90%	8.90%
NPL	\$ 434,381,124	\$ 297,629,899	\$ 184,950,173
Fund Fiduciary Net Position as a Percentage of TPL *	64.99%	73.04%	81.34%

Measurement date: September 30, 2017 \*\*

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.85%	7.85%	8.85%
NPL	\$ 476,908,055	\$ 325,131,513	\$ 201,500,847
Fund Fiduciary Net Position as a Percentage of TPL *	64.13%	72.39%	80.88%

\* Information requested by Board - not required under GASB No. 67

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



**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

**A. Relevant Provisions:**

The Fund was created under Chapter 23414, Laws of Florida, Special Act of 1945, as amended by Ordinance No. 2016-4035 adopted September 27, 2016.

**B. Eligibility Requirements:**

Any full-time employee of the City who is certified as a Firefighter or Police Officer as a condition of employment.

**C. Membership Tiers:**

Tier 1 - Members hired prior to July 14, 2010

Tier 2 - Members hired on or after July 14, 2010 but prior to September 30, 2013

Tier 3 - Members hired on or after September 30, 2013 but prior to June 8, 2016 for the  
Fire Department and July 20, 2016 for the Police Department

Tier 4 - Members hired on or after June 8, 2016 for the Fire Department and July 20, 2016  
for the Police Department

**D. Credited Service:**

All periods of employment as an Employee for which contributions have been made to the Fund together with all service in the uniformed services of the United States required to be included.

**E. Pre-Employment Service:**

Effective September 30, 2013 members with at least 5 years of service but not more than 10 years may contribute an additional amount of 10.0% for those hired prior to September 30, 2013 and 10.5% for those hired on or after September 30, 2013 to receive credit for pre-employment military service. A member may purchase up to 2 total years of additional service credit at the 3% accrual rate for time spent on active military duty. The total of all combinations of pre-employment benefit purchased cannot exceed a 12% increase in accrual.

Pre-employment benefit service must be purchased within 36 months for Police Officers and 24 months for Firefighters following September 30, 2013, or upon completion of 5 years of creditable pension service under the pension fund, whichever occurs later.

Effective September 30, 2013, members will no longer be able to purchase an increase in benefit multiplier or pre-employee public safety service credit as a Police Officer or Firefighter.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

**F. Pensionable Pay:**

Salary is defined as base pay, longevity pay, overtime, shift differential and extra compensation allowance such as uniform allowance and any pays which are negotiated as pensionable. Effective July 14, 2010, off-duty pay is pensionable for any member who is eligible for overtime and receives off-duty compensation through the City. Effective September 30, 2013, overtime is limited to 300 hours a year.

**1. Overtime and Off-Duty pay included in pension computation for Police Officers:**

- Off-Duty and overtime pay not exceeding 300 hours per calendar year is limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at time of retirement.
- The 11% limitation shall not apply to any member who holds the rank of sergeant or lieutenant on September 30, 2013, or any Police Officer promoted to the rank of sergeant prior to the date the 2013 Certified Police Sergeant Promotional Register expired in 2015. For these members, the inclusion of overtime and / or off duty in the member's salary shall be limited in each year to an amount which is equal to 70% of the difference between the member's annualized pay rate at retirement and the highest annualized pay rate for the next higher salary rank. For any of these members who self-demote they will become subject to the eleven percent (11%) limitation on overtime and off-duty compensation.

**2. Overtime and Off-Duty pay included in pension computation for Firefighters:**

- Off-Duty and overtime pay not exceeding 300 hours per calendar year is limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at time of retirement.

**G. Final Average Monthly Earnings (FAME):**

Tier 1 and eligible to retire prior to September 30, 2015 - the greater of the average of the 2 highest paid years prior to date of retirement or the 2 last paid years after taking into consideration the overtime limit.

Tier 1 and eligible to retire on or after September 30, 2015 - the greater of the average of the 3 highest paid years prior to date of retirement or the 3 last paid years after taking into consideration the overtime limit.

Tier 2 - the greater of the average of the 3 highest paid years prior to date of retirement or the 3 last paid years after taking into consideration the overtime limit.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

Tier 3 - the greater of the average of the 5 highest paid years prior to date of retirement or the 5 last paid years after taking into consideration the overtime limit.

Tier 4 - the average of the 5 highest paid years prior to date of retirement taking into consideration the overtime limit.

**H. Normal Retirement:**

**1. Eligibility:**

Tier 1 and eligible to retire prior to September 30, 2013 - the earlier of attainment of age 50 or Rule of 70

Tier 1 and eligible to retire on or after September 30, 2013 - the earlier of attainment of age 50 or Rule of 70 (must attain age 47)

Tier 2 and Tier 3 - the earlier of attainment of age 50 with 5 years of creditables service or Rule of 70 (must attain age 48)

Tier 4 - the earlier of attainment of age 52 with 5 years of creditables service or Rule of 70 (must attain age 48)

**2. Benefit:**

Tier 1 and eligible to retire prior to September 30, 2013:

3% x FAME x Credited Service up to 15 years plus 4% x Credited Service after 15 years  
Benefit shall not exceed 90% of FAME.

Tier 1 and eligible to retire on or after September 30, 2013 but prior to September 30, 2015:

3% x FAME x Credited Service up to 20 years plus 4% x Credited Service after 20 years  
Benefit shall not exceed 85% of FAME (exception if exceeded 85% as of September 30, 2013).

Tier 1 and eligible to retire on or after September 30, 2015, Tier 2, Tier 3 and Tier 4:

3% x FAME x Credited Service up to 20 years plus 4% x Credited Service after 20 years  
Benefit shall not exceed 85% of FAME.

A member's benefit multiplier for credited service earned before October 1, 2013 shall not be reduced.

**I. Deferred Retirement:**

**1. Eligibility:**

Any first day of the month past Normal Retirement Date.

**2. Benefit:**

Benefit calculated as for Normal Retirement based upon service and pay to Deferred Retirement Date.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

**J. Disability Retirement:**

**1. Eligibility:**

Totally and permanently disabled meaning incapacity to perform regular duty as Firefighter or Police Officer (and completion of at least 5 years of Credited Service for non-service incurred disability).

**2. Benefit:**

Accrued benefit (minimum of 85% of current salary at time of disability for service incurred disability).

**K. Death Benefit:**

**1. Service Incurred:**

Greater of accrued benefit or 85% of compensation payable as a monthly benefit to the widow until death or remarriage, to a Domestic Partner until death, marriage or entry into another Domestic Partnership, to unmarried children in equal shares until age 18 (until age 22 if a full-time student or until recovery from handicap if handicapped), or to dependent parents in equal shares.

**2. Non-Service Incurred:**

For members with at least 5 years of service, accrued benefit is payable for the first 12 months after death and 75% of the accrued benefit is payable thereafter (with a minimum benefit of 25% of average monthly salary); Benefits are payable to the widow until death or remarriage, to a Domestic Partner until death, marriage or entry into another Domestic Partnership, to unmarried children in equal shares until age 18 (until age 22 if a full-time student or until recovery from handicap or until marriage if handicapped), or to dependent parents in equal shares. However, if the member has been married for less than 10 years, benefits are payable to the spouse only for the life expectancy of the deceased member at time of death.

**L. Withdrawal Benefit:**

**1. Eligibility:**

Any age prior to 50 with at least 5 years of service for members who terminate employment on or after September 30, 2013.

**2. Benefit:**

Return of employee contributions or accrued benefit upon attainment of age 50. If a member withdraws with less than 10 years of service and passes away prior to the normal retirement date the return of employee contributions is the only benefit.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

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

**M. Employee Contributions:**

10.0% of salary per year (on a pre-tax basis) for members hired prior to September 30, 2013 and 10.5% of salary per year (on a pre-tax basis) for members hired on or after September 30, 2013; If contributions are refunded to the member or to his beneficiaries, then interest is credited at the rate of 3% per annum.

**N. Normal Form of Payment of Retirement Income:**

For members except those retiring prior to November 5, 2003, the normal form of payment is a 75% joint and survivor annuity with a specified beneficiary as provided under the plan. The specified beneficiary will receive a survivor annuity equal to 100% of the total benefit for one year following the death of the member and thereafter the greater of 75% of the total benefit or 25% of the average monthly salary for the two highest paid years. However, upon death, if the member has been married for less than 10 years, the survivor annuity is payable only for the life expectancy of the deceased member at time of death.

The members may also elect the actuarial equivalent of the 10 year certain and life annuity, with a designated beneficiary, any of the following optional forms of payment:

- 75% joint and contingent survivor annuity with a designated beneficiary
- 66 ⅔% joint and contingent annuity with a designated beneficiary
- 50% joint and contingent annuity with a designated beneficiary
- 25% joint and contingent annuity with a designated beneficiary
- 10 year certain and life annuity with a designated beneficiary

Members who retired prior to November 5, 2003 were subject to different normal and optional forms of payment.

**O. Deferred Retirement Option Program (DROP):**

Police Officers and Firefighters are eligible to participate in a Deferred Retirement Option Program (DROP) upon meeting eligibility for a normal service retirement.

**Operations of the DROP:**

- The member's monthly retirement benefit, based on final average earnings and service, will be calculated as of the date prior to them entering the DROP.
- The member's monthly pension will be deposited into the selected investment vehicles.
- The member will cease to accrue additional pension benefits (with the exception of the COLA under the pension plan).
- The member will no longer be eligible for Disability or Service Connected Death benefits from the Pension Plan.
- Member contributions to the Pension Plan will cease upon entering the DROP.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

- Upon entering the DROP, the member will select the length of the DROP period. The maximum period of participation in the DROP is 36 months for members who enter the DROP prior to September 1, 2012 and 60 months for members who enter the DROP on or after September 1, 2012. Notwithstanding the above, participation may not continue beyond the date when the member's combined years of creditable service and time in the DROP equals 352 months for members who enter the DROP prior to September 1, 2012 and 456 months for members who enter the DROP on or after September 1, 2012.

Members who enter the DROP on or before September 30, 2015 may extend their DROP participation period by 12 months for a total maximum DROP participation period not to exceed seventy-two (72) months.

Members who enter the DROP on or after October 1, 2015 but prior to June 8, 2016 for Fire Department members and July 20, 2016 for Police Department members may extend their DROP participation period by up to 36 months for a total maximum DROP participation period not to exceed ninety-six (96) months.

Members who enter the DROP on or after June 8, 2016 for Fire Department members and July 20, 2016 for Police Department members may participate in DROP for a period not to exceed ninety-six (96) months.

- The member will not have access or be able to borrow against any of the funds accumulated in their DROP account.
- The member may sever employment with the City at any time during the DROP period. Such separation will terminate their participation in the DROP.
- No payment will be made from the DROP account until the member severs employment with the City.
- Following severance of employment, the funds in the DROP will be paid under the options the member selected. The member will also start receiving their monthly pension which was previously being deposited in the DROP.
- A 2.5% COLA (1.5% per year for participants hired on or after July 14, 2010) is paid annually on the anniversary date of the member's retirement. For members who enter the DROP after September 1, 2012 and before September 30, 2013 - no cost of living adjustment for the third and fourth annual anniversary date, if the member participates in the DROP for six months or longer.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

Members hired before June 8, 2016 for Fire Department members and July 20, 2016 for Police Department members who elect to extend or enter the DROP and participate for more than 5 years will have no COLA adjustment applied for years six (6), seven (7), and eight (8) while participating in the DROP. Members hired on or after June 8, 2016 for Fire Department members and July 20, 2016 for Police Department members will receive a zero percent (0%) COLA for the first (1st), second (2nd), third (3rd) and fourth (4th) annual adjustment dates while participating in the DROP.

**P. Cost-of-Living Adjustment:**

Effective October 1, 2010, benefits are increased by 2.5% per year (1.5% per year for participants hired on or after July 14, 2010), compounded annually, on the anniversary date of each member's retirement. Members whose grandfathered Base Plan benefit is greater than the benefit otherwise provided by this plan will receive the applicable cost-of-living adjustment on that basis (2% a year beginning the October three years after retirement) until such time as the benefit from this plan with 2.5% cost-of-living exceeds that comparable grandfathered Base Plan benefit.

For members retired prior to October 1, 2010, benefit increases occur on the first of October each year.

**Q. Changes Since Previous Actuarial Valuation (These changes were made for the Actuarial Impact Statement but are shown here for informational purposes.)**

**Membership Tiers were:**

Tier 1 - Members hired prior to July 14, 2010

Tier 2 - Members hired on or after July 14, 2010 but prior to September 30, 2013

Tier 3 - Members hired on or after September 30, 2013

**Pre-Employment Service was:**

Effective September 30, 2013 members with at least 5 years of service may contribute an additional amount of 10.0% for those hired prior to September 30, 2013 and 10.5% for those hired on or after September 30, 2013 to receive credit for pre-employment military service. A member may purchase up to 2 total years of additional service credit at the 3% accrual rate for time spent on active military duty. The total of all combinations of pre-employment benefit purchased cannot exceed a 12% increase in accrual.

Pre-employment benefit service must be purchased within 36 months following September 30, 2013, or upon completion of 5 years of creditable pension service under the pension fund, whichever occurs later.

Effective September 30, 2013, members will no longer be able to purchase an increase in benefit multiplier or pre-employee public safety service credit as a Police Officer or Firefighter.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

**Q. Changes Since Previous Actuarial Valuation (continued)**

- The 11% limitation shall not apply to any member who holds the rank of sergeant or lieutenant on September 30, 2013, or any Police Officer promoted to the rank of sergeant prior to the date the 2013 Certified Police Sergeant Promotional Register expired in 2015. For these members, the inclusion of overtime and / or off duty in the member's salary shall be limited in each year to an amount which is equal to 70% of the difference between the member's annualized pay rate at retirement and the highest annualized pay rate for the next higher salary rank.

**2. Overtime and Off-Duty pay included in pension computation for Firefighters:**

- Off-Duty and overtime pay not exceeding 300 hours per calendar year is limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at time of retirement.

**Final Average Monthly Earnings (FAME) were:**

Tier 1 and eligible to retire prior to September 30, 2015 - the greater of the average of the 2 highest paid years prior to date of retirement or the 2 last paid years after taking into consideration the overtime limit.

Tier 1 and eligible to retire on or after September 30, 2015 - the greater of the average of the 3 highest paid years prior to date of retirement or the 3 last paid years after taking into consideration the overtime limit.

Tier 2 - the greater of the average of the 3 highest paid years prior to date of retirement or the 3 last paid years after taking into consideration the overtime limit.

Tier 3 - the greater of the average of the 5 highest paid years prior to date of retirement or the 5 last paid years after taking into consideration the overtime limit.

**Pensionable Pay was:**

Salary is defined as base pay, longevity pay, overtime, shift differential and extra compensation allowance such as uniform allowance and any pays which are negotiated as pensionable. Effective July 14, 2010, off-duty pay is pensionable for any member who is eligible for overtime and receives off-duty compensation through the City. Effective September 30, 2013, overtime is limited to 300 hours a year.

**1. Overtime and Off-Duty pay included in pension computation for Police Officers:**

- Off-Duty and overtime pay not exceeding 300 hours per calendar year is limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at time of retirement.



**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

**Q. Changes Since Previous Actuarial Valuation (continued)**

**Normal Retirement was:**

**1. Eligibility:**

Tier 1 and eligible to retire prior to September 30, 2013 - the earlier of attainment of age 50 or Rule of 70

Tier 1 and eligible to retire on or after September 30, 2013 - the earlier of attainment of age 50 or Rule of 70 (must attain age 47)

Tier 2 and Tier 3 - the earlier of attainment of age 50 or Rule of 70 (must attain age 48)

**2. Benefit:**

Tier 1 and eligible to retire prior to September 30, 2013:

3% x FAME x Credited Service up to 15 years plus 4% x Credited Service after 15 years  
Benefit shall not exceed 90% of FAME.

Tier 1 and eligible to retire on or after September 30, 2013 but prior to September 30, 2015:

3% x FAME x Credited Service up to 20 years plus 4% x Credited Service after 20 years  
Benefit shall not exceed 85% of FAME (exception if exceeded 85% as of September 30, 2013).

Tier 1 and eligible to retire on or after September 30, 2015, Tier 2 and Tier 3:

3% x FAME x Credited Service up to 20 years plus 4% x Credited Service after 20 years  
Benefit shall not exceed 85% of FAME.

A member's benefit multiplier for credited service earned before October 1, 2013 shall not be reduced.

**Deferred Retirement Option Program (DROP) was:**

Police Officers and Firefighters are eligible to participate in a Deferred Retirement Option Program (DROP) upon meeting any one of the following criteria:

- the attainment of age 50 or
- the sum of the member's age and creditable service equal to at least 70 (minimum age may apply)

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Outline of Principal Provisions of the Pension Fund**

**Q. Changes Since Previous Actuarial Valuation (continued)**

**Operations of the DROP were:**

- The member's monthly retirement benefit, based on final average earnings and service, will be calculated as of the date prior to them entering the DROP.
- The member's monthly pension will be deposited into the selected investment vehicles.
- The member will cease to accrue additional pension benefits (with the exception of the COLA under the pension plan).
- The member will no longer be eligible for Disability or Service Connected Death benefits from the Pension Plan.
- Member contributions to the Pension Plan will cease upon entering the DROP.
- Upon entering the DROP, the member will select the length of the DROP period. The maximum period of participation in the DROP is 36 months for members who enter the DROP prior to September 1, 2012 and 60 months for members who enter the DROP on or after September 1, 2012. Notwithstanding the above, participation may not continue beyond the date when the member's combined years of creditable service and time in the DROP equals 352 months for members who enter the DROP prior to September 1, 2012 and 408 months for members who enter the DROP on or after September 1, 2012.
- The member will not have access or be able to borrow against any of the funds accumulated in their DROP account.
- The member may sever employment with the City at any time during the DROP period. Such separation will terminate their participation in the DROP.
- No payment will be made from the DROP account until the member severs employment with the City.
- Following severance of employment, the funds in the DROP will be paid under the options the member selected. The member will also start receiving their monthly pension which was previously being deposited in the DROP.
- A 2.5% COLA (1.5% per year for participants hired on or after July 14, 2010) is paid annually on the anniversary date of the member's retirement. For members who enter the DROP after September 1, 2012 and before September 30, 2013 - no cost of living adjustment for the third and fourth annual anniversary date, if the member participates in the DROP for six months or longer. Any member who exits the DROP within 6 months following the date of DROP entry, shall be eligible for the 2.5% COLA annually on the anniversary date of the member's retirement.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

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

**A. Mortality**

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 with 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 with no setback, without projected mortality improvements.

Sample Ages (2016)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	45	39.94	43.35	38.50
50	34.73	38.12	33.74	37.91
55	29.61	32.95	29.10	32.74
60	24.73	27.88	24.52	27.72
62	22.86	25.91	22.74	25.80

Sample Ages (2036)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	45	42.10	45.36	40.67
50	36.93	40.18	35.95	39.99
55	31.85	35.06	31.35	34.86
60	27.00	30.03	26.81	29.89
62	25.12	28.06	25.01	27.97

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

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

**B. Investment Return**

7.85%, compounded annually, net of investment expenses includes inflation at 3.0%

**C. Expenses**

Prior year's actual administrative expenses.

**D. Employee Withdrawal Rates**

Representative values of the assumed annual rates of withdrawal among members in active service are as follows:

<u>Age</u>	<u>Withdrawal Rate</u>	<u>Age</u>	<u>Withdrawal Rate</u>
20	2.00%	35	1.25%
25	1.75%	40	1.00%
30	1.50%	45	0.75%

**E. Disability Rates**

Representative values of the assumed annual rates of disability among members in active service are as follows:

<u>Age</u>	<u>Disability Rates</u>	<u>Age</u>	<u>Disability Rate</u>
20	0.07%	45	0.58%
25	0.11%	50	0.99%
30	0.16%	55	1.42%
35	0.22%	60	2.00%
40	0.32%	64	2.69%

35% of disabilities are assumed to be non-service incurred - 65% service incurred.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

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

**F. Salary Increase Factors**

Representative values of the assumed annual rates of future salary increase are as follows:

<u>Age</u>	<u>Merit Salary Increase</u>	<u>Age</u>	<u>Merit Salary Increase</u>
20	3.7%	45	2.7%
25	7.7%	50	2.7%
30	6.7%	55	2.7%
35	3.7%	60	1.7%
40	2.7%	64	0.7%

In addition to the average assumed salary increase rates shown above the expected cost of living increases are as follows:

<u>FYE</u>	<u>COLA Salary Increase</u>	<u>Weighted Average Increase*</u>
2017	1.76%	5.79%
2018	3.00%	6.84%
2019	2.79%	6.43%
2020 and thereafter	2.18%	5.64%

The cost of living increases shown above are based on a 1% increase as of April 1, 2016, 3% increase as of July 1, 2017 and 3% increase as of July 1, 2018 contained in the collective bargaining agreement and long term expected increases of 2.18% annually each July.

\* The weighted average increase shown is based on aging of the current active census demographics.

**G. Payroll Growth Assumption**

The aggregate compensation used to compute the accrued liability contribution rate is assumed to increase at a rate of 3.5% per year - not greater than historical 10-year average (2.6% as of October 1, 2016).

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

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

**H. Retirement**

All members are assumed to retire at age 50 with 26.25 years of service, but not later than age 65. Retirement is assumed to occur in accordance with the following rates:

<b>Service</b>	<b>Rate of Retirement</b>	
	<b>Meeting Rule of 70</b>	<b>Not Meeting Rule of 70</b>
Less than 20	20%	4%
20	25%	5%
21	30%	10%
22	35%	10%
23	40%	20%
24	50%	60%
25	70%	60%
26	100%	100%
More than 26	100%	100%

**I. DROP Assumption**

80% of all active participants will participate in the DROP.

<b>Leave DROP</b>	<b>Enter DROP on or before September 30, 2015</b>	<b>Enter the DROP on or after October 1, 2015</b>
Prior to 5 years	0%	0%
After 5 years	5%	5%
After 6 years	N/A	5%
After 7 years	N/A	10%
After 8 years	N/A	100%

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

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

The extension of the DROP may alter the retirement experience of the plan causing a change in the retirement rates assumption in the future.

DROP assumptions will need to be monitored in light of future DROP experience.

**J. Overtime and Off-duty Pay Limitation**

No members excluded from the eleven percent (11%) limitation on overtime and off-duty compensation are assumed to self-demote.

**K. Loadings for Contingencies**

**Pre-Employment Service:** A City contribution of 0.275% of annual pensionable payroll is assumed sufficient to provide for the purchase (or *buyback*) of pre-employment military service and any probationary service by the membership.

**Transfers into Fund from other City pension systems:** A City contribution of 0.025% of annual pensionable payroll is added to provide for the transfer of service under another City pension system.

**L. Marital Assumptions**

1. 77% of members are assumed married or entitled to benefits for dependents, including registered domestic partners.
2. Male spouses are assumed to be three years older than female spouses.

**M. Smoothed Asset Valuation Method**

The method used for determining the smoothed actuarial value of assets phases in the deviation between the expected and actual return on assets at the rate of 20% per year. The smoothed actuarial 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 fund assets and whose upper limit is 120% of the fair market value of fund assets.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

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

**N. Actuarial Cost Method**

**Normal Retirement, Termination, Disability, and Death Benefits: 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 age at hire to his assumed retirement age to fund his estimated benefits, assuming the Fund had always been in effect. The normal cost for the Fund is the sum of such amounts for all 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 Fund 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 actuarial value of assets of the Fund.

**O. Changes Since Previous Actuarial Impact Statement**

**Investment Return was:**

7.90%, compounded annually, net of investment expenses.

**Mortality was:**

For healthy participants, RP-2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with Blue Collar Adjustment and projected 15 years from valuation date for pre-retirement mortality and 7 years from valuation date for post-retirement mortality with projection Scale AA.

For disabled participants, RP-2000 Disabled Mortality Tables, separate rates for males and females, without projection for future mortality improvement.



**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Assumption Change History**

**A. Effective October 1, 2002:**

The actuarial cost method was changed from frozen initial liability to entry age.

The amortization of the unfunded accrued liability was changed from level dollar to level percentage of pay, with aggregate payroll assumed to increase at 3.50% per year.

**B. Effective October 1, 2005:**

The *fresh start* method was applied to the actuarial value of assets to begin a new five-year phase-in of realized and unrealized gains and losses.

The retirement rates were increased to reflect retirement experience for participants meeting the age 50 and *Rule of 70* eligibility criteria.

The loadings for contingencies and pre-employment service were increased from 5.00% to 7.00% and from 4.50% to 5.50% respectively.

**C. Effective October 1, 2006:**

The actuarial valuation system used by Buck Consultants was upgraded effective October 1, 2006. The gain resulting from this upgrade was amortized over 30 years.

**D. Effective October 1, 2008:**

The interest rate used to calculate all liabilities was reduced to 8.40% from 8.50%.

The salary scale used to project future pay increases was reduced by 50 basis points at each age to reflect the current and projected economic climate.

The loadings for contingencies were increased by 100 basis points (50 basis points for salary rates and 50 basis points for buybacks).

The retirement assumption was updated to reflect an increase in the level of retirements starting at age 45.

**E. Effective October 1, 2009:**

The interest rate used to calculate all liabilities was reduced from 8.40% to 8.30%.

The mortality rates were changed from the 1983 Group Annuity Mortality Table to the RP-2000 Combined Mortality Table with a blue collar adjustment for healthy lives and the RP-2000 Disabled Mortality Table for disabled participants.

A load of 20% was added to the projected base payroll to estimate the projected pensionable payroll used to determine the expected member contributions.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Assumption Change History**

**E. Effective October 1, 2009 (cont'd):**

An experience study was performed on the fund over the 5 year period October 1, 2003 through October 1, 2008 and the following assumptions were changed to more accurately reflect fund experience:

- **Retirement Rates:** The retirement assumption was changed to reflect the results of the experience study.
- **Withdrawal Rates:** The withdrawal assumption was changed to reflect the results of the experience study.
- **Salary Increase Rates:** The salary increase assumption was changed to an average increase of 3.83% for fund year 2009 to reflect the freeze on COLA for the fund year and to an average increase of 6.00% for all subsequent fund years.
- **Load for Overtime and Other Pays:** The load for overtime and other pays was changed from 7.50% to 16.00% to reflect the results of the experience study.

**F. Effective October 1, 2010:**

The interest rate used to calculate all liabilities was reduced from 8.30% to 8.20%.

The freeze on the cost of living increase component of the salary scale was extended to March 31, 2012.

**G. Effective October 1, 2011:**

The interest rate used to calculate all liabilities was reduced from 8.20% to 8.10%.

The mortality tables for healthy pre and post retirement participants was projected 15 and 7 years respectively from the valuation date to reflect mortality improvements.

The contingency compensation load for overtime and other pays was increased from 16% to 18% to account for the expected increase in pensionable pay due to the inclusion of off duty pay in the computation of pensionable pay.

**H. Effective October 1, 2012:**

The interest rate used to calculate all liabilities was reduced from 8.10% to 8.00%.

The expected salary increases for FYE 2014 and 2015 were reduced by 2.17% to reflect a freeze in the cost of living increases and increased by 3.00% to reflect a 3.00% cost of living increase in FYE 2016.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Assumption Change History**

**H. Effective October 1, 2012 (cont'd):**

The contingency compensation load for overtime and other pays was decreased from 18% to 16% to account for the expected decrease in pensionable pay due to the cap on overtime hours in the computation of pensionable pay.

The contingency pre-employment service load was decreased from 6.000% to 0.275% to account for the elimination of certain buybacks.

The expected salary increases were adjusted to account for the extension of ranges for Firefighter I, Police Officer, Sergeant of Police and Police Lieutenant effective April 1, 2015.

**I. Effective October 1, 2013:**

The asset valuation method was updated to phase in the deviation between the expected and actual return on assets at the rate of 20% per year - 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.

The load for projected pensionable payroll was decreased from 20% to 16% to account for the expected decrease in pensionable pay due to the cap on overtime hours in the computation of pensionable pay.

**J. Effective October 1, 2014:**

The interest rate used to calculate all liabilities was reduced from 8.00% to 7.95%.

Payroll growth assumption is limited to 10-year average.

**K. Effective October 1, 2015:**

The interest rate used to calculate all liabilities was decreased from 7.95% to 7.90%.

An experience study was performed on the fund over the 5 year period October 1, 2009 through September 30, 2014 and the following assumptions were changed to more accurately reflect fund experience:

- **Withdrawal Rates:** The withdrawal assumption was updated to reflect the results of the experience study.
- **Disability Incidence:** The disability incidence assumption was changed to 65% service incurred / 35% non-service incurred.
- **The load for compensation and projected pensionable payroll** was replaced with actual pensionable pay.
- **Retirement Rates:** The retirement assumption was updated to reflect the results of the experience study.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Assumption Change History**

**K. Effective October 1, 2015 (cont'd):**

Updated DROP assumptions to reflect updated DROP provisions.

A City contribution of 0.025% of annual pensionable payroll is added to provide for the transfer of service under another City pension system.

The salary increase assumptions were updated to better reflect anticipated merit and COLA increases.

**L. Effective October 1, 2016:**

The interest rate used to calculate all liabilities was reduced from 7.90% to 7.85%.

The mortality assumption was updated to use the mortality assumption used by the Florida Retirement System (FRS) as required under F.S., Chapter 2015-157 based upon the July 1, 2016 FRS Actuarial Valuation.

Table XII

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Distribution by Attained Age Groups  
and Service Groups as of October 1, 2016**

**Active Firefighters**

<u>Attained Age Group</u>	-----COMPLETED YEARS OF SERVICE-----							<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30 &amp; Over</u>	
Under 25	2	-	-	-	-	-	-	2
25-29	22	5	-	-	-	-	-	27
30-34	14	21	9	-	-	-	-	44
35-39	9	15	12	4	-	-	-	40
40-44	5	8	5	8	-	-	-	26
45-49	-	2	5	8	5	-	-	20
50-54	2	-	-	4	1	-	-	7
55-59	-	-	1	-	-	-	-	1
60-64	1	-	-	-	-	-	-	1
65 & Over	-	-	-	-	-	-	-	0
<b>TOTAL</b>	<b>55</b>	<b>51</b>	<b>32</b>	<b>24</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>168</b>

	<u>10/01/2015</u>	<u>10/01/2016</u>
Average Attained Age	36.86 years	37.33 years
Average Hire Age	28.33 years	28.24 years
Average Base Pay	\$ 98,282	\$ 105,646
Percent Female	6.9%	6.5%

**Table XII  
(Cont'd)**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Distribution by Attained Age Groups  
and Service Groups as of October 1, 2016**

**Active Police Officers**

<u>Attained Age Group</u>	<u>COMPLETED YEARS OF SERVICE</u>							<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30 &amp; Over</u>	
Under 25	8	-	-	-	-	-	-	8
25-29	38	3	-	-	-	-	-	41
30-34	28	19	7	-	-	-	-	54
35-39	18	17	24	3	-	-	-	62
40-44	11	10	18	24	7	-	-	70
45-49	3	6	17	28	17	-	-	71
50-54	2	3	3	5	1	-	-	14
55-59	-	1	1	2	-	-	-	4
60-64	2	-	-	-	-	-	-	2
65 & Over	-	-	-	-	-	-	-	0
<b>TOTAL</b>	<b>110</b>	<b>59</b>	<b>70</b>	<b>62</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>326</b>

	<u>10/01/2015</u>	<u>10/01/2016</u>
Average Attained Age	39.50 years	39.32 years
Average Hire Age	28.78 years	28.82 years
Average Base Pay	\$ 82,406	\$ 82,056
Percent Female	13.4%	13.8%

**Table XII  
(Cont'd)**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach  
Distribution by Attained Age Groups  
and Service Groups as of October 1, 2016**

**All Active Members**

<u>Attained Age Group</u>	<u>COMPLETED YEARS OF SERVICE</u>							<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30 &amp; Over</u>	
Under 25	10	-	-	-	-	-	-	10
25-29	60	8	-	-	-	-	-	68
30-34	42	40	16	-	-	-	-	98
35-39	27	32	36	7	-	-	-	102
40-44	16	18	23	32	7	-	-	96
45-49	3	8	22	36	22	-	-	91
50-54	4	3	3	9	2	-	-	21
55-59	-	1	2	2	-	-	-	5
60-64	3	-	-	-	-	-	-	3
65 & Over	-	-	-	-	-	-	-	0
<b>TOTAL</b>	<b>165</b>	<b>110</b>	<b>102</b>	<b>86</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>494</b>
				<u>10/01/2015</u>		<u>10/01/2016</u>		
				38.60 years		38.64 years		
				28.63 years		28.62 years		
				\$ 87,812		\$ 90,079		
				11.2%		11.3%		

**Table XIII**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Statistics for Participants Entitled to Deferred Benefits  
and Participants Receiving Benefits**

**A. Entitled to Deferred Benefits \***

<b><u>Current Age Group</u></b>	<b><u>Count</u></b>	<b><u>Total Annual Benefit</u></b>	<b><u>Average Annual Benefit</u></b>
Less than 40	4	\$ 129,090	\$ 32,272
40-44	3	120,203	40,068
45-49	1	38,734	38,734
50-54	-	-	-
55-59	-	-	-
60-64	-	-	-
65 & Over	-	-	-
<b>TOTAL</b>	<b>8</b>	<b>\$ 288,027</b>	<b>\$ 36,003</b>

\* Excludes 16 dormant members and 1 deferred payment to estate

**B. Receiving Benefits (including DROPs)**

<b><u>Current Age Group</u></b>	<b><u>Count</u></b>	<b><u>Total Annual Benefit</u></b>	<b><u>Average Annual Benefit</u></b>
Less than 50	40	\$ 3,380,784	\$ 84,520
50-54	133	13,843,095	104,083
55-59	140	14,771,544	105,511
60-64	122	11,052,961	90,598
65-69	95	8,019,539	84,416
70-74	74	5,611,848	75,836
75 & Over	138	7,478,545	54,192
<b>TOTAL</b>	<b>742</b>	<b>\$ 64,158,316</b>	<b>\$ 86,467</b>



**Table XIV**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Reconciliation of Employee Data**

<b>A. <u>Active Participants</u></b>	
1. Active participants previous year	508
2. Retired during year	(2)
3. Entered DROP	(27)
4. Died during year	0
5. Disabled during year	0
6. Terminated during year	(1)
7. New active participants	20
8. Rehired during year	1
9. Dormant during the year	(5)
10. Data corrections	0
11. Active participants current year	<u>494</u>
<b>B. <u>Participants Receiving Benefits</u></b>	
1. Participants receiving benefits previous year	661
2. New retired participants	2
3. New terminated vested receiving benefits	2
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	17
6. Former DROPs now receiving benefits	1
7. Died or ceased payment during year	(30)
8. Data corrections	0
9. Retired or terminated vested receiving benefits current year	<u>653</u>
<b>C. <u>DROP Participants</u></b>	
1. DROP participants previous year	63
2. Died during year	0
3. Became disabled during year	0
4. Employment terminated and retired during year	(1)
5. Entered DROP during year	27
6. DROP participants current year	<u>89</u>
<b>D. <u>Terminated Vested Participants Entitled to Future Benefits</u></b>	
1. Terminated vested entitled previous year	20
2. Died during year	0
3. Commenced receiving benefits during year	(2)
4. Rehired during the year	(1)
5. New terminated vested	8
6. Terminated vested paid lump sum	0
7. Terminated vested entitled current year	<u>25</u>

**Table XV****City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach****Projected Retirement Benefits**

<b><u>Fiscal Year Ending</u></b>	<b><u>Projected Annual Payout</u></b>
2017	\$ 65,684,259
2018	\$ 66,479,116
2019	\$ 69,152,781
2020	\$ 71,876,635
2021	\$ 74,678,474
2022	\$ 77,761,819
2023	\$ 80,791,680
2024	\$ 84,075,598
2025	\$ 87,308,376
2026	\$ 90,784,117

The above projected payout of Fund benefits during the next ten years is based on assumptions involving all decrements. Actual payouts may differ from the above estimates depending upon the death, disability, salary and retirement experience of the Fund. 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.

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Analysis of Investment Yield as of October 1, 2016**

This Table sets forth the results of an analysis made of investment yields on the assets held under the City Pension Fund for Firefighters and Police Officers in the City of Miami Beach.

The basic sources for this analysis were the Statements produced by the Fund Auditors.

The basic data was initially checked for internal consistency. Since no difficulties were encountered with the data, yield rates were calculated directly from the transaction information submitted. A summary of the transaction information is set forth on the following page.

**Table XVI  
(Cont'd)**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Summary of Transaction Information**

<u>Year Ended</u>	<u>Benefits Paid <sup>1</sup></u>	<u>Administrative Expenses</u>	<u>Employee Contributions <sup>2</sup></u>	<u>City Contributions</u>	<u>State Contributions</u>	<u>Smoothed Actuarial Value <sup>3</sup></u>
09/30/2016	\$ 54,861,660	\$ 826,044	\$ 5,984,397	\$ 34,850,092	\$ 120,549	\$ 816,917,537
09/30/2015	62,686,716	777,493	5,944,414	33,028,839	120,549	759,327,614
09/30/2014	53,605,094	905,130	5,258,974	35,839,777	120,549	721,567,277
09/30/2013	52,104,605	805,919	9,717,336	39,371,501	120,549	663,233,454
09/30/2012	48,725,783	859,125	7,504,966	36,176,910	120,549	545,067,653
09/30/2011	44,934,423	971,906	5,783,503	32,691,021	120,549	531,821,181
09/30/2010	42,314,959	697,141	5,989,852	23,283,269	120,549	525,709,407
09/30/2009	38,195,186	767,484	6,542,597	20,039,446	120,549	517,602,834
09/30/2008	35,014,659	641,844	5,577,298	17,497,496	120,549	507,363,812
09/30/2007	32,367,302	646,588	5,194,282	15,110,868	120,549	495,993,903
09/30/2006	30,109,229	633,113	4,915,270	14,481,287	120,549	470,603,144
09/30/2005	27,202,700	581,953	4,982,579	11,857,606	120,549	457,680,582
09/30/2004	24,173,338	564,532	4,588,390	9,387,091	107,000	418,089,222
09/30/2003	22,072,374	521,173	4,437,529	8,577,326	0	410,423,595

<sup>1</sup> Includes DROP distributions and contribution refunds

<sup>2</sup> Includes buybacks

<sup>3</sup> Effective for fiscal years ending on or after September 30, 2013, includes DROP account balances

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Recent Compensation, Termination, Mortality and Investment Return Experience**

Valuation Date	Compensation		Termination	Mortality *	Investment Return		
	% Increase (Decrease)	Assumed Increase	Ratio of Actual to Expected	Ratio of Actual to Expected	Market Value Yield	Smoothed Actuarial Value Yield	Assumed Rate of Return
10/01/2016	4.3%	4.4%	1.0	1.5	9.49%	9.62%	7.90%
10/01/2015	9.8%	3.9%	1.5	1.1	0.75%	8.76%	7.95%
10/01/2014	4.0%	3.7%	0.8	1.1	10.3%	10.9%	8.0%
10/01/2013	3.9%	3.8%	1.1	0.8	13.1%	8.8%	8.0%
10/01/2012	5.6%	3.9%	1.7	1.1	20.2%	3.6%	8.1%
10/01/2011	3.4%	3.9%	2.1	0.8	(0.6%)	2.6%	8.2%
10/01/2010	2.7%	3.8%	1.3	1.2	10.9%	4.3%	8.3%
10/01/2009	7.9%	4.4%	N/A	N/A	1.4%	4.5%	8.4%
10/01/2008	8.8%	4.9%	N/A	N/A	(10.4%)	4.9%	8.5%
10/01/2007	9.5%	4.9%	N/A	N/A	14.3%	8.2%	8.5%
Last 3 Years	6.0%	4.0%	1.1	1.2	6.8%	9.8%	7.9%
Last 5 Years	5.5%	3.9%	1.2	1.1	10.6%	8.3%	8.0%
Last 10 Years	6.0%	4.2%	N/A	N/A	6.6%	6.6%	8.2%

\* Does not include beneficiaries of members currently alive

**Table XVI  
(Cont'd)**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Schedule of Funding Progress  
(Dollar Amounts in Thousands)**

Actuarial Valuation Date		Smoothed Actuarial Value of Assets (a)	Actuarial Accrued Liability (EAN) (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a/b)
10/01/2010	<sup>1</sup>	\$ 525,709	\$ 817,641	\$ 291,932	64.3%
10/01/2011	<sup>1</sup>	\$ 531,821	\$ 871,119	\$ 339,298	61.1%
10/01/2012	<sup>1</sup>	\$ 545,068	\$ 902,778	\$ 357,711	60.4%
10/01/2013	<sup>2,3</sup>	\$ 663,233	\$ 955,239	\$ 292,006	69.4%
10/01/2014	<sup>3</sup>	\$ 721,567	\$ 1,009,621	\$ 288,054	71.5%
10/01/2015	<sup>3</sup>	\$ 759,328	\$ 1,050,155	\$ 290,827	72.3%
10/01/2016	<sup>3,4</sup>	\$ 816,918	\$ 1,094,507	\$ 277,589	74.6%
10/01/2016	<sup>3,5</sup>	\$ 816,918	\$ 1,129,477	\$ 312,559	72.3%

<sup>1</sup> As shown in the City's Comprehensive Annual Financial Report (CAFR)

<sup>2</sup> Update in actuarial method applied

<sup>3</sup> Includes DROP accounts in assets and liabilities

<sup>4</sup> Prior to update in actuarial assumptions

<sup>5</sup> After update in actuarial assumptions

**Table XVII**

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Employer Contribution Information**

<u>Valuation Date</u>	<u>Contribution Fiscal Year End</u>	<u>Minimum Required Employer Contributions</u>	<u>Actual City Contributions Made</u>	<u>Actual State Contributions Made</u>	<u>Actual Employer Contributions Made</u>
10/01/2016	09/30/2018	\$ 37,639,937	N/A	N/A	N/A
10/01/2015	09/30/2017	\$ 34,265,000	N/A	N/A	N/A
10/01/2014	09/30/2016	\$ 34,970,641	\$ 34,850,092	\$ 120,549	\$ 34,970,641
10/01/2013	09/30/2015	\$ 33,149,388	\$ 33,028,839	\$ 120,549	\$ 33,149,388
10/01/2012	09/30/2014	\$ 35,960,326	\$ 35,839,777	\$ 120,549	\$ 35,960,326
10/01/2011	09/30/2013	\$ 39,492,050	\$ 39,371,501	\$ 120,549	\$ 39,492,050
10/01/2010	09/30/2012	\$ 36,296,459	\$ 36,176,910	\$ 120,549	\$ 36,297,459
10/01/2009	09/30/2011	\$ 34,537,068	\$ 32,691,021	\$ 120,549	\$ 32,811,570
10/01/2008	09/30/2010	\$ 23,403,818	\$ 23,283,269	\$ 120,549	\$ 23,403,818
10/01/2007	09/30/2009	\$ 20,159,995	\$ 20,039,446	\$ 120,549	\$ 20,159,995

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**20-Year Projections**

Throughout the forecast period, new members are assumed to be hired each year at a rate sufficient to maintain a constant active employee headcount – stationary population. Newly employed members are assumed to have the same average demographic characteristics (age, gender and salary – adjusted each year for inflation) as those of members hired during the past five (5) years. State (Share Plan) contributions are projected to remain \$120,549 during the projection period.

Projections are deterministic – assume all actuarial assumptions are realized - reflect investment return assumption decreasing by 0.05% each year until 7.75% for contribution FYE 2020. Payroll growth is assumed to remain the same as current year (2.6%) for all projection years. Administrative expenses included in the normal cost are assumed to grow at 3% per year.

<b>Contribution Fiscal Year</b>	<b>Projected Annual Pensionable Payroll</b>	<b>Projected Net City Required Contribution</b>	
		<b>Amount</b>	<b>% of Pay</b>
2017 - 2018	59,793,025	37,519,388	62.7%
2018 - 2019	63,001,169	39,321,484	62.4%
2019 - 2020	65,729,562	41,294,108	62.8%
2020 - 2021	67,483,026	42,352,415	62.8%
2021 - 2022	69,135,888	42,917,626	62.1%
2022 - 2023	70,866,394	43,636,695	61.6%
2023 - 2024	72,535,627	44,248,605	61.0%
2024 - 2025	74,084,337	44,886,275	60.6%
2025 - 2026	75,619,118	45,377,106	60.0%
2026 - 2027	77,313,861	45,819,010	59.3%
2027 - 2028	78,811,731	46,385,756	58.9%
2028 - 2029	80,501,728	47,103,608	58.5%
2029 - 2030	82,437,043	47,691,186	57.9%
2030 - 2031	83,986,196	47,849,119	57.0%
2031 - 2032	85,008,268	48,349,502	56.9%
2032 - 2033	86,014,677	46,865,805	54.5%
2033 - 2034	87,284,461	45,351,469	52.0%
2034 - 2035	88,750,313	40,771,620	45.9%
2035 - 2036	90,293,108	35,807,505	39.7%
2036 - 2037	91,506,847	36,067,037	39.4%
<b>5 Year Totals</b>	<b>325,142,670</b>	<b>203,405,021</b>	<b>62.6%</b>
<b>10 Year Totals</b>	<b>695,562,007</b>	<b>427,372,712</b>	<b>61.4%</b>
<b>20 Year Totals</b>	<b>1,550,156,379</b>	<b>869,615,319</b>	<b>56.1%</b>



**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Actuarial Valuation as of October 1, 2016**

**State Required Exhibit - All Members**

	<b>Actuarial Impact Statement 10/01/2015</b>	<b>Prior Assumptions 10/01/2016</b>	<b>Current Assumptions 10/01/2016</b>
<b>A. <u>Participant Data</u></b>			
1. Active participants	508	494	494
2. Retired participants and beneficiaries receiving benefits (including DROPs)	668	690	690
3. Disabled participants receiving benefits	56	52	52
4. Terminated vested participants	20	25	25
5. Annual Pensionable Payroll	\$ 58,545,943	\$ 58,277,802	\$ 58,277,802
6. Projected Annual Pensionable Payroll	\$ 60,477,959	\$ 59,793,025	\$ 59,793,025
7. Annual benefits payable to those currently receiving benefits (including DROPs)	\$ 60,900,968	\$ 64,158,316	\$ 64,158,316
<b>B. <u>Value of Assets</u></b>			
1. Smoothed Actuarial Value	\$ 759,327,614	\$ 816,917,537	\$ 816,917,537
2. Market Value	\$ 750,617,498	\$ 806,424,132	\$ 806,424,132
<b>C. <u>Liabilities</u></b>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 347,402,867	\$ 338,456,128	\$ 346,580,183
b. Vesting benefits	13,378,921	13,294,177	13,766,898
c. Death benefits	5,632,243	5,395,864	7,540,271
d. Disability benefits	29,570,850	29,267,237	31,463,334
e. Total	\$ 395,984,881	\$ 386,413,406	\$ 399,350,686
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 4,183,372	\$ 3,257,773	\$ 3,277,939
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	\$ 739,196,095	\$ 786,468,103	\$ 808,781,158
b. Beneficiaries	38,521,088	44,624,516	46,673,753
c. Disability retired	42,956,281	42,203,910	45,983,881
d. Miscellaneous	0	0	0
e. Total	\$ 820,673,464	\$ 873,296,529	\$ 901,438,792

City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach

Actuarial Valuation as of October 1, 2016

State Required Exhibit - All Members

	Actuarial Impact Statement 10/01/2015	Prior Assumptions 10/01/2016	Current Assumptions 10/01/2016
4. Total actuarial present value of future expected benefit payments	\$ 1,220,841,717	\$ 1,262,967,708	\$ 1,304,067,417
5. Actuarial accrued liabilities	\$ 1,050,154,648	\$ 1,094,507,330	\$ 1,129,476,584
6. Unfunded actuarial liabilities	\$ 290,827,034	\$ 277,589,793	\$ 312,559,047
<b>D. <u>Statement of Accumulated Fund Benefits</u></b>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 820,673,464	\$ 873,296,529	\$ 901,438,792
b. Other participants	170,106,822	159,902,462	166,245,279
c. Total	<u>\$ 990,780,286</u>	<u>\$ 1,033,198,991</u>	<u>\$ 1,067,684,071</u>
2. Actuarial present value of accumulated non-vested fund benefits	<u>\$ 5,657,726</u>	<u>\$ 6,866,582</u>	<u>\$ 6,812,616</u>
3. Total actuarial present value of accumulated fund benefits	\$ 996,438,012	\$ 1,040,065,573	\$ 1,074,496,687
<b>E. <u>Pension Cost</u></b>			
1. Total normal cost (including admin expenses)	\$ 17,931,596	\$ 17,704,961	\$ 18,357,026
2. Payment required to amortize unfunded liability	20,718,967	21,681,603	23,796,708
3. Interest adjustment	222,287	220,150	218,858
4. Expected service buyback	175,638	174,833	174,833
5. Total required contribution	<u>\$ 39,048,488</u>	<u>\$ 39,781,547</u>	<u>\$ 42,547,425</u>
6. Item 5 as a percentage of projected pensionable payroll	64.6%	66.5%	71.2%
7. Estimated employee contributions	\$ 6,072,088	\$ 6,013,721	\$ 6,013,721
8. Item 7 as a percentage of projected pensionable payroll	10.0%	10.1%	10.1%
9. Estimated State contributions	\$ 120,549	\$ 120,549	\$ 120,549
10. Item 9 as a percentage of projected pensionable payroll	0.2%	0.2%	0.2%
11. Net amount payable by City	\$ 34,144,451	\$ 34,681,597	\$ 37,519,388
12. Item 11 as a percentage of projected pensionable payroll	56.5%	58.0%	62.7%

City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach

Actuarial Valuation as of October 1, 2016

State Required Exhibit - All Members

	<b>Actuarial Impact Statement 10/01/2015</b>	<b>Prior Assumptions 10/01/2016</b>	<b>Current Assumptions 10/01/2016</b>
<b>F. <u>Past Contributions</u></b>			
1. Total contribution required (prior valuation / impact statement)	\$ 39,129,244	\$ 39,048,488	\$ 39,048,488
2. Actual contributions made:			
a. Members	\$ 5,706,014	N/A	N/A
b. City	34,850,092	N/A	N/A
c. State	120,549	N/A	N/A
d. Total	<u>\$ 40,676,655</u>	N/A	N/A
<b>G. <u>Disclosure of Following Items:</u></b>			
1. Actuarial present value of future salaries excluding DROP payroll - attained age	\$ 588,001,202	\$ 591,127,973	\$ 591,872,003
2. Actuarial present value of future employee contributions - attained age	\$ 59,151,994	\$ 59,619,276	\$ 59,694,946
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 52,418,404	\$ 52,481,716	\$ 52,481,716
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach

Actuarial Valuation as of October 1, 2016

State Required Exhibit - Firefighters

	Actuarial Impact Statement 10/01/2015	Prior Assumptions 10/01/2016	Current Assumptions 10/01/2016
<b>A. <u>Participant Data</u></b>			
1. Active participants	173	168	168
2. Retired participants and beneficiaries receiving benefits (including DROPs)	274	276	276
3. Disabled participants receiving benefits	8	7	7
4. Terminated vested participants	6	5	5
5. Annual Pensionable Payroll	\$ 21,558,650	\$ 20,887,154	\$ 20,887,154
6. Projected Annual Pensionable Payroll	\$ 22,270,085	\$ 21,430,220	\$ 21,430,220
7. Annual benefits payable to those currently receiving benefits (including DROPs)	\$ 25,197,936	\$ 26,120,166	\$ 26,120,166
<b>B. <u>Liabilities</u></b>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 129,615,551	\$ 128,620,953	\$ 132,164,709
b. Vesting benefits	5,761,453	5,731,207	5,942,226
c. Death benefits	2,332,093	2,224,601	3,049,760
d. Disability benefits	11,487,213	11,357,756	12,219,556
e. Total	<u>\$ 149,196,310</u>	<u>\$ 147,934,517</u>	<u>\$ 153,376,251</u>
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 909,052	\$ 479,520	\$ 486,260
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	\$ 322,239,210	\$ 336,106,748	\$ 345,576,678
b. Beneficiaries	15,446,457	16,617,686	17,357,240
c. Disability retired	6,796,996	6,679,468	7,292,790
d. Miscellaneous	0	0	0
e. Total	<u>\$ 344,482,663</u>	<u>\$ 359,403,902</u>	<u>\$ 370,226,708</u>

City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach

Actuarial Valuation as of October 1, 2016

State Required Exhibit - Firefighters

	<u>Actuarial Impact Statement 10/01/2015</u>	<u>Prior Assumptions 10/01/2016</u>	<u>Current Assumptions 10/01/2016</u>
4. Total actuarial present value of future expected benefit payments	\$ 494,588,025	\$ 507,817,939	\$ 524,089,219
5. Actuarial accrued liabilities	\$ 423,059,583	\$ 438,453,922	\$ 451,769,931
<b>C. <u>Statement of Accumulated Fund Benefits</u></b>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 344,482,663	\$ 359,403,902	\$ 370,226,708
b. Other participants	54,180,403	54,649,105	56,917,820
c. Total	<u>\$ 398,663,066</u>	<u>\$ 414,053,007</u>	<u>\$ 427,144,528</u>
2. Actuarial present value of accumulated non-vested fund benefits	<u>\$ 2,276,323</u>	<u>\$ 2,587,953</u>	<u>\$ 2,602,881</u>
3. Total actuarial present value of accumulated fund benefits	\$ 400,939,389	\$ 416,640,960	\$ 429,747,409
<b>D. <u>Disclosure of Following Items:</u></b>			
1. Actuarial present value of future salaries - attained age	\$ 233,634,585	\$ 223,200,755	\$ 223,525,168
2. Actuarial present value of future employee contributions - attained age	\$ 23,500,418	\$ 22,473,137	\$ 22,505,916
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 15,662,907	\$ 16,678,270	\$ 16,678,270
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Actuarial Valuation as of October 1, 2016**

**State Required Exhibit - Police Officers**

	<b>Actuarial Impact Statement 10/01/2015</b>	<b>Prior Assumptions 10/01/2016</b>	<b>Current Assumptions 10/01/2016</b>
<b>A. <u>Participant Data</u></b>			
1. Active participants	335	326	326
2. Retired participants and beneficiaries receiving benefits (including DROPs)	394	414	414
3. Disabled participants receiving benefits	48	45	45
4. Terminated vested participants	14	20	20
5. Annual Pensionable Payroll	\$ 36,987,293	\$ 37,390,648	\$ 37,390,648
6. Projected Annual Pensionable Payroll	\$ 38,207,874	\$ 38,362,805	\$ 38,362,805
7. Annual benefits payable to those currently receiving benefits (including DROPs)	\$ 35,703,032	\$ 38,038,150	\$ 38,038,150
<b>B. <u>Liabilities</u></b>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 217,787,316	\$ 209,835,175	\$ 214,415,474
b. Vesting benefits	7,617,468	7,562,970	7,824,672
c. Death benefits	3,300,150	3,171,263	4,490,511
d. Disability benefits	18,083,637	17,909,481	19,243,778
e. Total	\$ 246,788,571	\$ 238,478,889	\$ 245,974,435
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 3,274,320	\$ 2,778,253	\$ 2,791,679
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	\$ 416,956,885	\$ 450,361,355	\$ 463,204,480
b. Beneficiaries	23,074,631	28,006,830	29,316,513
c. Disability retired	36,159,285	35,524,442	38,691,091
d. Miscellaneous	0	0	0
e. Total	\$ 476,190,801	\$ 513,892,627	\$ 531,212,084

**City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach**

**Actuarial Valuation as of October 1, 2016**

**State Required Exhibit - Police Officers**

	<b>Actuarial Impact Statement 10/01/2015</b>	<b>Prior Assumptions 10/01/2016</b>	<b>Current Assumptions 10/01/2016</b>
4. Total actuarial present value of future expected benefit payments	\$ 726,253,692	\$ 755,149,769	\$ 779,978,198
5. Actuarial accrued liabilities	\$ 627,095,065	\$ 656,053,408	\$ 677,706,653
<b>C. <u>Statement of Accumulated Fund Benefits</u></b>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 476,190,801	\$ 513,892,627	\$ 531,212,084
b. Other participants	\$ 115,926,419	105,253,357	109,327,459
c. Total	<u>\$ 592,117,220</u>	<u>\$ 619,145,984</u>	<u>\$ 640,539,543</u>
2. Actuarial present value of accumulated non-vested fund benefits	<u>\$ 3,381,403</u>	<u>\$ 4,278,629</u>	<u>\$ 4,209,735</u>
3. Total actuarial present value of accumulated fund benefits	\$ 595,498,623	\$ 623,424,613	\$ 644,749,278
<b>D. <u>Disclosure of Following Items:</u></b>			
1. Actuarial present value of future salaries - attained age	\$ 354,366,617	\$ 367,927,218	\$ 368,346,835
2. Actuarial present value of future employee contributions - attained age	\$ 35,651,576	\$ 37,146,139	\$ 37,189,030
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 36,755,497	\$ 35,803,446	\$ 35,803,446
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

City Pension Fund for Firefighters and Police Officers  
in the City of Miami Beach

State Required Exhibit

Amortization balances are written down in proportion to amortization payments.

Valuation Date		Current Unfunded	Prior	Current	Remaining
<u>Established</u>	<u>Unfunded Actuarial Accrued Liabilities</u>	<u>Liabilities</u>	<u>Assumptions Amortization Payment</u>	<u>Assumptions Amortization Payment</u>	<u>Funding Period</u>
10/01/2001	Initial Unfunded Liability	\$ 11,615,365	\$ 1,076,034	\$ 1,073,010	15 years
10/01/2002	Method Update	13,263,564	1,177,478	\$ 1,173,966	16 years
10/01/2003	Fund Amendment	1,148,856	98,100	\$ 97,791	17 years
10/01/2003	Actuarial (Gain) / Loss	34,589,592	2,953,579	\$ 2,944,269	17 years
10/01/2004	Actuarial (Gain) / Loss	37,240,788	3,068,663	\$ 3,058,484	18 years
10/01/2005	Method Update	(33,129,706)	(2,641,979)	\$ (2,632,789)	19 years
10/01/2005	Assumption Update	6,663,720	531,409	\$ 529,560	19 years
10/01/2005	Actuarial (Gain) / Loss	24,745,791	1,973,391	\$ 1,966,527	19 years
10/01/2006	Method Update	(4,992,445)	(386,299)	\$ (384,894)	20 years
10/01/2006	Actuarial (Gain) / Loss	21,611,293	1,672,211	\$ 1,666,130	20 years
10/01/2007	Actuarial (Gain) / Loss	25,238,220	1,899,185	\$ 1,891,985	21 years
10/01/2008	Assumption Update	6,020,272	441,491	\$ 439,751	22 years
10/01/2008	Actuarial (Gain) / Loss	33,228,549	2,436,785	\$ 2,427,179	22 years
10/01/2009	Assumption Update	23,662,017	1,694,208	\$ 1,687,279	23 years
10/01/2009	Actuarial (Gain) / Loss	68,100,179	4,875,994	\$ 4,856,053	23 years
10/01/2010	Assumption Update	4,584,517	321,036	\$ 319,677	24 years
10/01/2010	Actuarial (Gain) / Loss	17,324,716	1,213,182	\$ 1,208,046	24 years
10/01/2011	Fund Amendment	(3,112,225)	(213,474)	\$ (212,540)	25 years
10/01/2011	Assumption Update	17,187,321	1,178,914	\$ 1,173,756	25 years
10/01/2011	Actuarial (Gain) / Loss	30,573,042	2,097,068	\$ 2,087,894	25 years
10/01/2012	Assumption Update	7,844,447	527,789	\$ 525,408	26 years
10/01/2012	Actuarial (Gain) / Loss	26,411,265	1,777,000	\$ 1,768,982	26 years
10/01/2012	Fund Amendment	(20,186,044)	(1,358,156)	\$ (1,352,028)	26 years
10/01/2013	Actuarial (Gain) / Loss	1,564,896	103,411	\$ 102,931	27 years
10/01/2013	Method Update	(64,919,844)	(4,290,014)	\$ (4,270,082)	27 years
10/01/2014	Actuarial (Gain) / Loss	(5,990,856)	(389,283)	\$ (387,423)	28 years
10/01/2014	Assumption Update	5,790,953	376,293	\$ 374,496	28 years
10/01/2015	Actuarial (Gain) / Loss	8,719,805	557,763	\$ 555,027	29 years
10/01/2015	Assumption Update	2,469,061	157,934	\$ 157,159	29 years
10/01/2015	Fund Amendment	(8,401,652)	(537,412)	\$ (534,776)	29 years
10/01/2016	Actuarial (Gain) / Loss	(11,275,664)	(710,698)	\$ (707,123)	30 years
10/01/2016	Assumption Update	34,969,254	N/A	2,193,003	30 years
<b>TOTAL</b>		<b>\$ 312,559,047</b>	<b>\$ 21,681,603</b>	<b>\$ 23,796,708</b>	

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the fund and / or paid from fund 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 fund costs or required contribution rates have been taken into account in the valuation.

Enrollment Number: 17-02802  
Dated: May 3, 2017

  
Lawrence F. Wilson, A.S.A.