



April 17, 2019

Mr. Martin Lebowitz
Administrator
City of North Miami Beach
17011 N.E. 19th Avenue – Room 311
North Miami Beach, Florida 33162

**Re: Retirement Plan for General Employees of the City of North Miami Beach
Actuarial Valuation**

Dear Marty:

As requested, we are pleased to enclose twelve (12) copies of the October 1, 2018 Actuarial Valuation Report for the Retirement Plan for General Employees' of the City of North Miami Beach.

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

We appreciate the opportunity to have performed this important assignment on behalf of the Board and look forward to presenting the key results at the May 20th Board Meeting.

If you should have any questions concerning the above, please do not hesitate to call.

Sincerest regards,

A handwritten signature in black ink that reads "L. F. Wilson".

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

Enclosures

RETIREMENT PLAN FOR GENERAL EMPLOYEES OF THE CITY OF NORTH MIAMI BEACH

PROJECTION ACTUARIAL VALUATION AS OF October 1, 2018

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

April 17, 2019



Retirement Plan for General Employees of the City of North Miami Beach

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April 17, 2019

Board of Trustees
c/o Mr. Martin Lebowitz
Administrator
City of North Miami Beach
17011 N.E. 19th Avenue – Room 311
North Miami Beach, Florida 33162

Dear Board Members:

October 1, 2018 Projection Actuarial Valuation

We are pleased to present our October 1, 2018 Projection Actuarial Valuation Report for the Retirement Plan for General Employees of the City of North Miami Beach. The purpose of this Report is to indicate appropriate contribution levels, comment on the actuarial stability of the Plan and to satisfy State requirements. Gabriel, Roeder, Smith & Company (GRS), as Plan Actuary, is authorized by the Board of Trustees to prepare an annual actuarial valuation under Section 5.06 of the Plan.

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

Pension Plan Costs

Our Actuarial Valuation develops the required minimum Retirement Plan payment for fiscal year beginning October 1, 2019 under the Florida Protection of Public Employee Retirement Benefits Act. The minimum payment consists of payment of annual normal costs plus amortization of the components of the unfunded actuarial accrued liability over various periods as prescribed by law. The total required contribution for the fiscal year ending September 30, 2020 is **\$3,737,017 (72.4%)**. The figure in parentheses is the Plan cost expressed as a percentage of projected covered annual payroll for fiscal year beginning October 1, 2019 (\$5,158,886).

This total cost is to be met by Member and City contributions. We anticipate Member contributions will be **\$361,122 (7.0%)** leaving **\$3,375,895 (65.4%)** which must be contributed to the Plan by the City for the fiscal year ending September 30, 2020 assuming the City contributes full payment on October 1, 2019.

Changes in Actuarial Assumptions, Methods and Plan Benefits

Plan benefits remain unchanged from the previous Actuarial Valuation. Plan provisions are outlined on Table X.

The assumed investment return is updated from 7.65% to 7.55%, compounded annually. The remaining actuarial assumptions and methods are unchanged from the previous Actuarial Valuation. Actuarial assumptions and methods are outlined on Table XI.

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

Table II of our Report provides information of a comparative nature. The left columns of the Table indicate the costs as calculated for our Actuarial Valuation as of October 1, 2017. The center columns indicate the costs as calculated for October 1, 2018, prior to the update in actuarial assumptions. The right columns indicate the costs as calculated for October 1, 2018, after the update in actuarial assumptions.

Comparing the left and center columns of Table II shows the effect of Plan experience during the year. The number of active participants increased by approximately 5% while covered payroll increased by approximately 5%. The normal cost increased both as a dollar amount and as a percentage of covered payroll. The unfunded actuarial accrued liability decreased both as a dollar amount and as a percentage of covered payroll. The City minimum required contribution increased as a dollar amount but decreased as a percentage of covered payroll.

Comparing the center and right columns of Table II shows the effect of the update of the actuarial assumption. The normal cost, the unfunded actuarial accrued liability and the City minimum required contribution all increased both as a dollar amount and as a percentage of covered payroll.

The value of vested accrued benefits exceeds the market value of Plan Assets, resulting in a Vested Benefit Security Ratio of 75.3% (76.1% prior to assumption change) - an increase from 74.6% as of our October 1, 2017 Actuarial Valuation.

Plan Experience

Table VII indicates the Plan experienced an actuarial loss of \$816,541. This suggests actual overall Plan experience was less favorable than anticipated.

Our Actuarial Valuation Report tracks the actual experience in three areas that are very significant in determining whether an actuarial gain or loss occurs. Table XVI presents salary experience. Table

XVII provides information on investment return and tracks employee turnover.

The salary experience indicates actual salary increases averaged approximately 3.98%. This was more than our assumption for salary increases of 3.73% and was generally a source of actuarial loss. Three, five and ten-year average salary increases are 3.94%, 3.47% and 2.83%, respectively.

Employee turnover this year was 130% of the assumed turnover and was generally an offsetting source of actuarial gain. Three, five and ten-year average turnover experience are 280%, 200% and 150%, respectively of the assumed turnover rates.

Smoothed actuarial value investment return of 7.20%, net of investment expense, was less than the prior 7.65% investment return assumption. Three, five and ten-year average smoothed actuarial value net investment returns are 7.28%, 7.81% and 5.99%, respectively. Smoothed actuarial value investment return was an additional source of actuarial loss during the previous year. Market value net returns for the one, three, five and ten-year periods have been 8.72%, 8.87%, 7.28% and 8.21%, respectively.

Member Census and Financial Data

The Board provided the Member census data as of October 1, 2018 used for this actuarial valuation to us. This information contains name, Social Security number, date of birth, date of hire, date of participation, October 1, 2018 rate of pay, actual salary paid and employee contributions deducted for the year. Dates of termination and retirement are provided where applicable. The Board updated information on inactive participants including retirees, beneficiaries and vested terminees.

We receive audited financial information concerning fund assets as of September 30, 2018 from the Board. We do not audit the Member census data and asset information provided to us. However, we perform certain reasonableness checks. The Board is responsible for the accuracy of the data provided to us.

Risks Associated with the Measuring the Accrued Liability and Actuarially Determined Contribution

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

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: Plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in Plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

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

1. Investment risk – actual investment returns may differ from expected returns;
2. Asset / Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and the actuarially determined contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the Plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and the actuarially determined contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and the actuarially determined contributions differing from expected.

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

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

guarantee benefit security.

Plan Maturity Measures

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

	<u>2017</u>	<u>2018</u>
Ratio of the market value of assets to total payroll	16.29	16.13
Ratio of actuarial accrued liability to payroll	22.62	22.12
Ratio of actives to retirees and beneficiaries	0.39	0.40
Ratio of net cash flow to market value of assets	-6.2%	-4.4%
Duration of the actuarial accrued liability	11.89	11.82

Ratio of Market Value of Assets to Payroll

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

Ratio of Actuarial Accrued Liability to Payroll

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

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

the actuarially determined contributions) as a percentage of payroll.

Ratio of Actives to Retirees and Beneficiaries

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

Ratio of Net Cash Flow to Market Value of Assets

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

Duration of Actuarial Accrued Liability

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

Additional Risk Assessment

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

Summary

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

The actuarial assumptions used in this Actuarial Valuation are as adopted by the Board of Trustees. Each assumption represents an estimate of future Plan experience. The latest Experience Study is

based upon the five-year period October 1, 2011 through September 30, 2016. The mortality assumptions are mandated by statute.

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

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

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

This Report 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 plans. To the best of our knowledge the information contained in this Report is accurate and fairly presents the actuarial position of the Plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

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

The signing actuaries are independent of the Plan sponsor.

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

Very truly yours,



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



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

Summary of Retirement Plan Costs as of October 1, 2018

	<u>Prior Assumptions</u>		<u>Current Assumptions</u>	
	<u>Cost</u>	<u>% of</u>	<u>Cost</u>	<u>% of</u>
	<u>Data</u>	<u>Payroll</u>	<u>Data</u>	<u>Payroll</u>
A. Participant Data Summary				
1. Active employees	109	N/A	109	N/A
2. Terminated vested	69	N/A	69	N/A
3. Receiving benefits	279	N/A	279	N/A
4. DROP participants	7	N/A	7	N/A
5. Annual payroll of active employees	\$ 5,158,886	100.0%	\$ 5,158,886	100.0%
B. Total Normal Costs				
1. Age retirement benefits	\$ 360,501	7.0%	\$ 368,902	7.2%
2. Termination benefits	119,856	2.3%	122,771	2.4%
3. Death benefits	20,745	0.4%	21,057	0.4%
4. Disability benefits	38,416	0.7%	39,030	0.8%
5. Estimated expenses	219,961	4.3%	219,961	4.3%
6. Total annual normal costs (City and Member)	\$ 759,479	14.7%	\$ 771,721	15.0%
C. Total Actuarial Accrued Liability				
1. Age retirement benefits active employees	\$ 14,943,681	289.7%	\$ 15,154,864	293.8%
2. Termination benefits active employees	194,087	3.8%	195,564	3.8%
3. Death benefits active employees	202,728	3.9%	205,316	4.0%
4. Disability benefits active employees	529,062	10.3%	534,891	10.4%
5. Retired or terminated vested participants receiving benefits	72,961,847	1414.3%	73,652,612	1427.7%
6. DROP participants	2,412,812	46.8%	2,432,542	47.2%
7. Terminated vested participants entitled to future benefits	11,406,950	221.1%	11,593,706	224.7%
8. Deceased participants whose beneficiaries are receiving benefits	8,248,623	159.9%	8,322,385	161.3%
9. Disabled participants receiving benefits	1,795,498	34.8%	1,808,748	35.1%
10. Miscellaneous liability	207,214	4.0%	207,214	4.0%
11. Total actuarial accrued liability	\$ 112,902,502	2188.5%	\$ 114,107,842	2211.9%
D. Assets				
1. Smoothed actuarial value	\$ 82,584,310	1600.8%	\$ 82,584,310	1600.8%
2. Market value	\$ 83,212,413	1613.0%	\$ 83,212,413	1613.0%
E. Unfunded Actuarial Accrued Liability (C. - D.1.)	\$ 30,318,192	587.7%	\$ 31,523,532	611.1%

Summary of Retirement Plan Costs as of October 1, 2018

	<u>Prior Assumption</u>		<u>Current Assumptions</u>	
	<u>Cost</u>	<u>% of</u>	<u>Cost</u>	<u>% of</u>
	<u>Data</u>	<u>Payroll</u>	<u>Data</u>	<u>Payroll</u>
F. Total Minimum Funding Requirement				
1. Total normal cost (City and Member)	\$ 759,479	14.7%	\$ 771,721	15.0%
2. Amortization of unfunded liability	2,875,620	55.7%	2,952,620	57.2%
3. Interest adjustment	12,831	0.2%	12,676	0.2%
4. Total payment	<u>\$ 3,647,930</u>	<u>70.7%</u>	<u>\$ 3,737,017</u>	<u>72.4%</u>
G. Expected payroll of active employees for FYE 2020 (\$5,158,886 x 1.000)	\$ 5,158,886	100.0%	\$ 5,158,886	100.0%
H. Expected Contribution Sources (percent of expected 2019 - 2020 payroll)				
1. Member	\$ 361,122	7.0%	\$ 361,122	7.0%
2. City	3,286,808	63.7%	3,375,895	65.4%
3. Total	<u>\$ 3,647,930</u>	<u>70.7%</u>	<u>\$ 3,737,017</u>	<u>72.4%</u>
I. Actuarial Gain / (Loss)	\$ (816,541)	(15.8%)	\$ (816,541)	(15.8%)
J. Actuarial Present Value of Vested Accrued Benefits				
1. Retired, terminated vested, beneficiaries and disabled receiving benefits	\$ 83,005,968	1609.0%	\$ 83,783,745	1624.1%
2. DROP participants	2,412,812	46.8%	2,432,542	47.2%
3. Terminated vested participants entitled to future benefits and miscellaneous	11,614,164	225.1%	11,800,920	228.7%
4. Active participants entitled to future benefits	<u>12,303,790</u>	<u>238.5%</u>	<u>12,481,322</u>	<u>241.9%</u>
5. Total actuarial present value of vested accrued benefits	\$ 109,336,734	2119.4%	\$ 110,498,529	2141.9%
K. Unfunded Actuarial Present Value of Vested Accrued Benefits (J. - D.2.)	\$ 26,124,321	506.4%	\$ 27,286,116	528.9%
L. Vested Benefit Security Ratio (D.2. ÷ J.)	76.1%	N/A	75.3%	N/A

Table II

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

	October 1, 2017		Prior Assumptions October 1, 2018		Current Assumptions October 1, 2018	
	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation	Cost Data	% of Annual Compensation
A. Participants						
1. Active employees	104	N/A	109	N/A	109	N/A
2. Terminated vested	72	N/A	69	N/A	69	N/A
3. Receiving benefits	270	N/A	279	N/A	279	N/A
4. DROP participants	13	N/A	7	N/A	7	N/A
5. Annual payroll of active employees	\$ 4,906,153	100.0%	\$ 5,158,886	100.0%	\$ 5,158,886	100.0%
B. Total Normal Costs	\$ 699,011	14.2%	\$ 759,479	14.7%	\$ 771,721	15.0%
C. Total Actuarial Accrued Liability	\$ 110,972,740	2261.9%	\$ 112,902,502	2188.5%	\$ 114,107,842	2211.9%
D. Smoothed Actuarial Value of Assets	\$ 80,469,479	1640.2%	\$ 82,584,310	1600.8%	\$ 82,584,310	1600.8%
E. Unfunded Actuarial Accrued Liability	\$ 30,503,261	621.7%	\$ 30,318,192	587.7%	\$ 31,523,532	611.1%
F. Expected City Contribution	\$ 3,205,197	65.3%	\$ 3,286,808	63.7%	\$ 3,375,895	65.4%
G. Unfunded Actuarial Present Value of Vested Accrued Benefits	\$ 27,282,349	556.1%	\$ 26,124,321	506.4%	\$ 27,286,116	528.9%
H. Actuarial Gain / (Loss)	\$ 1,073,348	21.9%	\$ (816,541)	(15.8%)	\$ (816,541)	(15.8%)
I. Vested Benefit Security Ratio	74.6%	N/A	76.1%	N/A	75.3%	N/A

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

A. Active Plan Participants Summary

1. Active participants fully vested	63
2. Active participants partially vested	0
3. Active participants non-vested	46
4. Total active participants	109
5. Annual rate of pay of active participants	\$ 5,158,886

B. Retired and Terminated Vested Participant Summary

1. Retired or terminated vested participants receiving benefits	217
2. DROP participants	7
3. Terminated vested participants entitled to future benefits	69
4. Deceased participants whose beneficiaries are receiving benefits	50
5. Disabled participants receiving benefits	12

C. Projected Annual Retirement Benefits

1. Retired or terminated vested receiving benefits	\$ 6,081,002
2. DROP participants	\$ 150,781
3. Terminated vested entitled to future benefits	\$ 1,407,071
4. Beneficiaries of deceased participants receiving benefits	\$ 745,590
5. Disabled participants	\$ 196,335

Statement of Assets as of September 30, 2018

	<u>Market Value</u>
A. <u>Cash</u>	\$ 2,531
B. <u>Investments</u>	
1. Short term investments	\$ 2,014,678
2. Corporate bonds	\$ 5,290,211
3. Government and agency fixed income obligations	\$ 11,601,113
4. Common stocks	\$ 51,868,367
5. Real Estate	\$ 8,445,647
6. Hedge Funds	\$ 4,082,612
C. <u>Receivables</u>	
1. Accrued interest and dividends	\$ 95,797
2. Receivable from other funds	\$ 62,079
D. <u>Payables</u>	
1. Accounts payable	\$ 120,738
2. Purchase of investments	\$ 129,884
E. <u>Total Fund</u> (A. + B. + C. - D.)	\$ 83,212,413

Table V

Reconciliation of Plan Assets

A. <u>Total Market Value of Assets as of October 1, 2017</u>		\$ 79,944,967
B. <u>Receipts During Period</u>		
1. Contributions		
a. Employee	\$ 387,959	
b. City	<u>3,453,684</u>	
c. Total		\$ 3,841,643
2. Investment income		
a. Interest and dividends	\$ 1,763,913	
b. Investment expense	<u>(502,408)</u>	
c. Net		\$ 1,261,505
3. Other income		46,717
4. Realized appreciation / (depreciation)		(119,644)
5. Unrealized appreciation / (depreciation)		<u>5,627,501</u>
6. Total receipts during period		\$ 10,657,722
C. <u>Disbursements During Period</u>		
1. Pension payments		\$ 6,699,427
2. DROP distributions		404,145
3. Refunds of accumulated employee contributions		66,743
4. Administrative expenses		<u>219,961</u>
5. Total disbursements during period		\$ 7,390,276
D. <u>Total Market Value of Assets as of September 30, 2018</u>		\$ 83,212,413
E. <u>Reconciliation of DROP Account Balances</u>		
1. DROP account balances as of October 1, 2017		\$ 635,678
2. Benefit payments into DROP accounts during year		203,004
3. Investment credits during year		20,175
4. Distributions from DROP accounts during year		<u>(404,145)</u>
5. DROP account balances as of September 30, 2018		\$ 454,712

Table VI

Development of Smoothed Actuarial Value of Assets as of September 30

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
A. Preliminary total smoothed actuarial value from prior year	79,328,835	80,469,479	82,584,310			
B. Total market value end of year	79,944,967	83,212,413				
C. Total market value beginning of year	76,555,716	79,944,967	83,212,413			
D. Non-investment net cash flow	(4,725,921)	(3,548,633)				
E. Investment return						
1. Total market value return: B. - C. - D.	8,115,172	6,816,079				
2. Amount for immediate recognition (7.75% / 7.65%)	5,749,939	5,980,055				
3. Amount for phased-in recognition: E.1. - E.2.	2,365,233	836,024				
F. Phased-in recognition of investment return						
1. Current year: 20% of E.3.	473,047	167,205				
2. First prior year	(111,229)	473,047	167,205			
3. Second prior year	(1,237,399)	(111,229)	473,047	167,205		
4. Third prior year	391,785	(1,237,399)	(111,229)	473,047	167,205	
5. Fourth prior year	600,422	391,785	(1,237,398)	(111,228)	473,045	167,204
6. Total phased-in recognition of investment return	116,626	(316,591)	(708,375)	529,024	640,250	167,204
G. Total smoothed actuarial value end of year						
1. Preliminary smoothed actuarial value end of year:						
A. + D. + E.2. + F.6.	80,469,479	82,584,310				
2. Upper corridor limit: 120% of B.	95,933,960	99,854,896				
3. Lower corridor limit: 80% of B.	63,955,974	66,569,930				
4. Total smoothed actuarial value end of year:						
G.1., not more than G.2., nor less than G.3.	80,469,479	82,584,310				
H. Difference between market value and smoothed actuarial value	(524,512)	628,103				
I. Smoothed actuarial value rate of return	7.62%	7.20%				
J. Market value rate of return	10.94%	8.72%				

Table VII

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

A. Derivation of Actuarial Gain / (Loss)

1. City net normal cost previous actuarial valuation	\$ 355,580
2. Unfunded actuarial accrued previous actuarial valuation	30,503,261
3. City contributions previous year	3,453,684
4. Interest on:	
(a) City net normal cost	\$ 27,202
(b) Unfunded actuarial accrued liability	2,333,499
(c) Contributions	264,207
(d) Net interest: (a) + (b) - (c)	\$ 2,096,494
5. Increase / (decrease) in unfunded actuarial accrued liability due to assumption changes	\$ 1,205,340
6. Expected unfunded actuarial accrued liability current year (1. + 2. - 3. + 4. + 5.)	30,706,991
7. Actual unfunded actuarial accrued liability current year	31,523,532
8. Actuarial gain / (loss): (6. - 7.)	\$ (816,541)

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

1. Smoothed actuarial value of assets previous year	\$ 80,469,479
2. Contributions during year	3,841,643
3. Benefits and administrative expenses during year	7,390,276
4. Expected appreciation for period	6,152,283
5. Expected smoothed actuarial value of assets current year: (1. + 2. - 3. + 4.)	\$ 83,073,129
6. Smoothed actuarial value of assets current year	\$ 82,584,310
7. Approximate gain / (loss) due to smoothed investments: (6. - 5.)	\$ (488,819)

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

\$ (327,722)

Amortization of Unfunded Actuarial Accrued Liability**A. Unfunded Actuarial Accrued Liability**

<u>Date</u>	<u>Unfunded Liability</u>	<u>Amortization Payment</u>
October 1, 2018	\$ 31,523,532	\$ 2,952,620
October 1, 2019	\$ 30,728,016	\$ 2,952,620
October 1, 2020	\$ 29,872,438	\$ 2,952,620
October 1, 2021	\$ 28,952,264	\$ 2,952,620
October 1, 2022	\$ 27,962,617	\$ 2,952,620
...		
...		
October 1, 2048	\$ 0	\$ 0

B. Covered Payroll History

<u>Date</u>	<u>Covered Payroll</u>	<u>Annual Increase</u>
October 1, 2018	\$ 5,158,886	5.2%
October 1, 2017	\$ 4,906,153	(32.8%)
October 1, 2016	\$ 7,299,735	(13.5%)
October 1, 2015	\$ 8,435,083	(2.1%)
October 1, 2014	\$ 8,613,816	(4.6%)
October 1, 2013	\$ 9,032,997	(14.9%)
October 1, 2012	\$ 10,612,185	(6.3%)
October 1, 2011	\$ 11,326,066	(11.2%)
October 1, 2010	\$ 12,754,334	(1.5%)
October 1, 2009	\$ 12,953,446	(0.6%)
October 1, 2008	\$ 13,029,957	N/A
Ten-Year Average Annual Increase		(8.8%)

Accounting Disclosure Exhibit

	<u>10/01/2017</u>	<u>Prior Assumptions 10/01/2018</u>	<u>Current Assumptions 10/01/2018</u>
I. <u>Number of Plan Participants</u>			
a. Retirees, beneficiaries and disableds receiving benefits	270	279	279
b. DROP participants	13	7	7
c. Terminated plan participants entitled to but not yet receiving benefits	72	69	69
d. Active plan participants	104	109	109
e. Total	459	464	464
II. <u>Financial Accounting Standards Board Allocation</u>			
<u>As of October 1, 2018</u>			
A. <u>Statement of Accumulated Plan Benefits</u>			
1. Actuarial present value of accumulated vested plan benefits			
a. Participants currently receiving benefits	\$ 79,210,564	\$ 83,005,968	\$ 83,783,745
b. DROP participants	3,912,974	2,412,812	2,432,542
c. Other participants	24,103,778	23,917,954	24,282,242
d. Total	\$ 107,227,316	\$ 109,336,734	\$ 110,498,529
2. Actuarial present value of accumulated non-vested plan benefits	1,157,175	916,922	927,444
3. Total actuarial present value of accumulated plan benefits	\$ 108,384,491	\$ 110,253,656	\$ 111,425,973
B. <u>Statement of Change in Accumulated Plan Benefits</u>			
1. Actuarial present value of accumulated plan benefits as of October 1, 2017			\$ 108,384,491
2. Increase (decrease) during year attributable to:			
a. Plan amendment			\$ 0
b. Changes in actuarial assumptions			1,172,317
c. Benefits paid (including DROP distributions and refunds)			(7,170,315)
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period			9,039,480
e. Net increase			\$ 3,041,482
3. Actuarial present value of accumulated plan benefits as of October 1, 2018			\$ 111,425,973
C. <u>Significant Matters Affecting Calculations</u>			
1. Assumed rate of return used in determining actuarial present values			7.55%
2. Change in plan provisions			None.
3. Change in actuarial assumptions and methods			See Table XI, Item L.

Accounting Disclosure ExhibitIII. Net Pension Liability and Related Ratios (GASB Statement No. 67 & No. 68)

Measurement Date	9/30/2014	9/30/2015	9/30/2016	9/30/2017	9/30/2018	Projected 9/30/2019 *
A. <u>Total Pension Liability (TPL)</u>						
Service Cost	\$ 1,258,325	\$ 1,151,136	\$ 1,156,065	\$ 953,146	\$ 520,878	\$ 551,760
Interest	7,539,274	7,805,702	7,928,162	8,273,928	8,254,998	8,372,012
Benefit Changes	0	0	0	0	132,999	0
Difference between Actual and Expected Experience	515,726	867,625	(350,213)	458,125	(1,239,946)	344,962
Assumption Changes	0	0	0	2,910,146	1,242,884	1,205,340
Benefit Payments, including Refunds of Member Contributions	(5,377,791)	(6,859,718)	(7,137,255)	(8,348,341)	(7,170,315)	(7,544,039)
Net Change in Total Pension Liability	\$ 3,935,534	\$ 2,964,745	\$ 1,596,759	\$ 4,247,004	\$ 1,741,498	\$ 2,930,035
Total Pension Liability (TPL) - (beginning of year)	<u>98,072,000</u>	<u>102,007,534</u>	<u>104,972,279</u>	<u>106,569,038</u>	<u>110,816,042</u>	<u>112,557,540</u>
Total Pension Liability (TPL) - (end of year)	<u>\$ 102,007,534</u>	<u>\$ 104,972,279</u>	<u>\$ 106,569,038</u>	<u>\$ 110,816,042</u>	<u>\$ 112,557,540</u>	<u>\$ 115,487,575</u>
B. <u>Plan Fiduciary Net Position</u>						
Contributions - City	\$ 3,545,108	\$ 3,528,201	\$ 3,285,155	\$ 3,249,182	\$ 3,453,684	\$ 3,205,197
Contributions - Member	643,099	632,868	708,318	551,371	387,959	361,122
Net Investment Income	7,469,081	(261,263)	5,109,744	8,115,172	6,816,079	6,124,075
Benefit Payments, including Refunds of Member Contributions	(5,377,791)	(6,859,718)	(7,137,255)	(8,348,341)	(7,170,315)	(7,544,039)
Administrative Expenses	(165,534)	(159,900)	(180,748)	(178,133)	(219,961)	(219,961)
Other	0	0	0	0	0	0
Net Change in Plan Fiduciary Net Position	\$ 6,113,963	\$ (3,119,812)	\$ 1,785,214	\$ 3,389,251	\$ 3,267,446	\$ 1,926,394
Plan Fiduciary Net Position - (beginning of year)	<u>71,776,351</u>	<u>77,890,314</u>	<u>74,770,502</u>	<u>76,555,716</u>	<u>79,944,967</u>	<u>83,212,413</u>
Plan Fiduciary Net Position - (end of year)	<u>\$ 77,890,314</u>	<u>\$ 74,770,502</u>	<u>\$ 76,555,716</u>	<u>\$ 79,944,967</u>	<u>\$ 83,212,413</u>	<u>\$ 85,138,807</u>
C. <u>Net Pension Liability (NPL) - (end of year): (A) - (B)</u>	\$ 24,117,220	\$ 30,201,777	\$ 30,013,322	\$ 30,871,075	\$ 29,345,127	\$ 30,348,768
D. <u>Plan Fiduciary Net Position as a Percentage of TPL: (B) / (A)</u>	76.36 %	71.23 %	71.84 %	72.14 %	73.93 %	73.72 %
E. <u>Covered Employee Payroll **</u>	\$ 8,935,213	\$ 8,438,765	\$ 7,937,439	\$ 6,934,420	\$ 5,137,361	\$ 5,158,886
F. <u>NPL as a Percentage of Covered Employee Payroll: (C) / (E)</u>	269.91 %	357.89 %	378.12 %	445.19 %	571.21 %	588.28 %
G. <u>Notes to Schedule:</u>						
Valuation Date	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018
Reporting Date (GASB Statement No. 68)	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019	9/30/2020
Update procedures used to roll forward TPL excluding DROP account balances to the measurement dates - actual DROP account balances as of measurement dates included in TPL.						

See Table IX, Item V. and Table XI, Item L. for a history of benefit and assumption changes.

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

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

Accounting Disclosure Exhibit

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

<u>Fiscal Year Ended</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered Payroll ^{1,2}</u>	<u>Actual Contribution as a % of Covered Payroll</u>
2009	\$ 2,126,565	\$ 2,122,612	\$ 3,953	\$ 13,029,957	16.29%
2010	2,649,170	2,649,170	0	12,953,446	20.45%
2011	2,812,799	2,812,799	0	12,754,334	22.05%
2012	2,677,804	2,927,951	(250,147)	11,326,066	25.85%
2013	3,220,136	3,381,418	(161,282)	10,612,185	31.86%
2014	3,545,108	3,545,108	0	8,935,213	39.68%
2015	3,528,201	3,528,201	0	8,438,765	41.81%
2016	3,285,155	3,285,155	0	7,937,439	41.39%
2017	3,249,182	3,249,182	0	6,934,420	46.86%
2018	3,453,684	3,453,684	0	5,137,361	67.23%
2019 ³	3,205,197	3,205,197	0	5,158,886	62.13%

¹ Projected prior to fiscal year ended September 30, 2014

² Reported payroll used to determine contribution as provided under GASB Statement No. 82

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

Accounting Disclosure ExhibitV. Notes to Schedule of Contributions (GASB Statement No. 67 & No. 68)

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

Methods and Assumptions Used to Determine Contribution for Fiscal Year Ended September 30, 2018:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level percentage of pay, closed
Amortization Period	30 years
Asset Valuation Method	Smoothed market value
Inflation	2.75%
Salary Increases	4.25% - 8.00%
Investment Rate of Return	7.75%
Payroll Growth Assumption	4.0%, per year not greater than average annual increase over most recent ten years (-5.5%), not less than 0.0%.
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition
Mortality	For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, RP 2000 Disabled Male Mortality Table, setback four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.
Cost-of-Living Increases	0.00%, 0.75%, 2.25%

Other Information:**Benefit Changes**

2012 - Normal retirement eligibility, benefit, vesting and DROP participation changed to: (members not eligible for normal retirement as of September 30, 2013 and non-IUPA members) earlier of age 62 with 10 years of credited service or age 60 with 25 years of credited service along with a multiplier of 2.5% for service after September 30, 2013 - vesting requirement increased to 10 years of service (members with less than 6 years of service as of September 30, 2013) - maximum DROP participation period reduced to 36 months. Normal retirement eligibility, benefit, vesting and DROP participation changed to: (IUPA members not eligible for normal retirement as of December 31, 2013) earlier of age 66 with 6 years of credited service or age 59 with 30 years of credited service along with a multiplier of 2.0% for service after December 31, 2013 - DROP closed to IUPA members not age 55 with 20 years of credited service as of December 31, 2013. Effective July 1, 2012: DROP interest credit reduced to 3% per annum.

Accounting Disclosure Exhibit**V. Notes to Schedule of Contributions (GASB Statement No. 67 & No. 68) (continued)****Assumption Changes**

2016 - Mortality assumption was updated. 2012 - Assumed DROP participation period 48 months for members eligible to participate in DROP for sixty 60 months - assumed DROP participation period 36 months for members eligible to participate in the DROP for 36 months. Smoothed value of assets marked to market value. 2011 - Assumed retirement rates updated - investment return assumption reduced to 7.75% - assumed employee withdrawal rates, rates of retirement and salary increase assumptions updated. 2008 - Mortality assumptions for healthy and impaired lives updated - investment return assumption reduced to 8.25% - employee withdrawal rates and rates of retirement were updated.

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

Discount rates of 7.65% and 7.55% were used to measure the September 30, 2018 TPL and the September 30, 2019 TPL, respectively. These discount rates were based on the expected rate of return on Plan investments of 7.65% and 7.55%, respectively. The projection of cash flows used to determine these discount rates 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 pension Plan's fiduciary net position was projected to be available to make all projected future expected benefit payments of current Plan members. Therefore, the long-term expected rate of return on Plan investments was applied to all periods of projected benefit payments to determine the TPL.

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

Measurement date: September 30, 2018

	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
Discount Rate	6.65%	7.65%	8.65%
NPL	\$ 42,386,779	\$ 29,345,127	\$ 18,525,141

Measurement date: September 30, 2019 *

	<u>1% Decrease</u>	<u>Current Discount Rate</u>	<u>1% Increase</u>
Discount Rate	6.55%	7.55%	8.55%
NPL	\$ 43,685,428	\$ 30,348,768	\$ 19,278,562

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

Accounting Disclosure Exhibit

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

Pension Expense for Fiscal Year Ending September 30, 2019 \$ 4,382,756

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

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between actual and expected experience on liabilities	\$ 76,355	\$ 413,315
Changes of assumptions or other inputs	899,319	0
Net difference between projected and actual earnings on pension Plan investments	0	628,103
Total	<u>\$ 975,674</u>	<u>\$ 1,041,418</u>

Projected Deferred Outflows for City Contributions to Be Recognized in the Pension Expense for Fiscal Year Ending September 30, 2020 \$ 3,205,197

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

Year Ending 30-Sep	Amount
2020	\$ 1,270,734
2021	(529,024)
2022	(640,250)
2023	(167,204)
2024	0
Thereafter	0

Accounting Disclosure Exhibit

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

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

Measurement Date	9/30/2014	9/30/2015	9/30/2016	9/30/2017	9/30/2018	Projected 9/30/2019 *
Service Cost	\$ 1,258,325	\$ 1,151,136	\$ 1,156,065	\$ 953,146	\$ 520,878	\$ 551,760
Interest on Total Pension Liability	7,539,274	7,805,702	7,928,162	8,273,928	8,254,998	8,372,012
Current-Period Benefit Changes	0	0	0	0	132,999	0
Contributions - Member	(643,099)	(632,868)	(708,318)	(551,371)	(387,959)	(361,122)
Projected Earnings on Plan Investments	(5,510,156)	(5,925,731)	(5,665,888)	(5,749,939)	(5,980,055)	(6,124,075)
Administrative Expenses	165,534	159,900	180,748	178,133	219,961	219,961
Other Changes in Plan Fiduciary Net Position	0	0	0	0	0	0
Recognition of Beginning Deferred Outflows / (Inflows) due to Liabilities	166,363	476,229	351,153	1,542,900	1,305,343	1,595,894
Recognition of Beginning Deferred Outflows / (Inflows) due to Assets	(391,785)	845,614	956,843	483,796	316,591	708,375
Total Pension Expense	<u>\$ 2,584,456</u>	<u>\$ 3,879,982</u>	<u>\$ 4,198,765</u>	<u>\$ 5,130,593</u>	<u>\$ 4,382,756</u>	<u>\$ 4,962,805</u>

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

Accounting Disclosure Exhibit

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

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

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

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2015 / 2016	\$ 0	2.8	0.0	\$ 0	\$ 0
2016 / 2017	458,125	2.4	0.4	190,885	76,355
2017 / 2018	0	1.5	0.5	0	0
TOTAL				\$ 190,885	\$ 76,355

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

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2015 / 2016	\$ (350,213)	2.8	0.0	\$ (100,061)	\$ 0
2016 / 2017	0	2.4	0.4	0	0
2017 / 2018	(1,239,946)	1.5	0.5	(826,631)	(413,315)
TOTAL				\$ (926,692)	\$ (413,315)

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

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2015 / 2016	\$ 0	2.8	0.0	\$ 0	\$ 0
2016 / 2017	2,910,146	2.4	0.4	1,212,561	485,024
2017 / 2018	1,242,884	1.5	0.5	828,589	414,295
TOTAL				\$ 2,041,150	\$ 899,319

Accounting Disclosure Exhibit

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

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

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

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2015 / 2016	\$ 0	2.8	0.0	\$ 0	\$ 0
2016 / 2017	0	2.4	0.4	0	0
2017 / 2018	0	1.5	0.5	0	0
TOTAL				\$ 0	\$ 0

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

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

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2018	Recognition Amount for 2017 / 2018	Balance as of 9/30/2018
2013 / 2014	\$ (1,958,925)	5	0	\$ (391,785)	\$ 0
2014 / 2015	6,186,994	5	1	1,237,399	1,237,398
2015 / 2016	556,144	5	2	111,229	222,457
2016 / 2017	(2,365,233)	5	3	(473,047)	(1,419,139)
2017 / 2018	(836,024)	5	4	(167,205)	(668,819)
TOTAL				\$ 316,591	\$ (628,103)

Outline of Principal Provisions of the Retirement Plan

A. Effective Date:

July 1, 1957 as Amended and Restated under Ordinance No. 89.19. Most recently amended under Ordinance No. 2018-3.

B. Eligibility Requirements:

1. Permanent full-time or *contract* employees excluding Police Officers, Firefighters, City Councilmen and the City Attorney.
2. Completion of two (2) years of credited service.

C. Credited Service:

Service measured in completed calendar months from date of employment to date of retirement or prior termination.

D. Final Monthly Compensation (FMC):

Average monthly rate of basic compensation during the best 60 successive calendar months out of the last 120 calendar months preceding date of retirement or prior termination. Basic compensation is defined as compensation actually paid to a participant excluding commissions, bonuses, overtime, expense allowances and all other extraordinary compensation.

E. Normal Retirement:

1. For members who are either (1) members of the AFSCME bargaining group or (2) not included in any bargaining unit and have attained age 62 or have attained age 55 with 20 years of credited service as of September 30, 2013 or for members of the IUPA bargaining group who have attained age 62 or have attained age 55 with 20 years of credited service as of December 31, 2013:
 - a. Eligibility: Attainment of age 62, or attainment of age 55 with 20 years of credited
 - b. Benefit: 3.0% of FMC times credited service.
2. For all other members of the IUPA bargaining group:
 - a. Eligibility: Attainment of age 62 with 10 years of credited service, or attainment of age 60 with 25 years of credited service.
 - b. Benefit: 3.0% of FMC times credited service through December 31, 2013 - 2.5% of FMC times credited service after December 31, 2013.

Benefits based upon credited service through December 31, 2013 may be paid upon attainment of age 62 or attainment of age 55 with 20 years of credited service.

Outline of Principal Provisions of the Retirement Plan

E. Normal Retirement (cont'd):

3. For all other members who are either (1) members of the AFSCME bargaining group or (2) not included in any bargaining unit:
 - a. Eligibility: Attainment of age 62 with 10 years of credited service, or attainment of age 60 with 25 years of credited service.
 - b. Benefit: 3.0% of FMC times credited service through September 30, 2013 - 2.5% of FMC times credited service after September 30, 2013.

Benefits based upon credited service through September 30, 2013 may be paid upon attainment of age 62 or attainment of age 55 with 20 years of credited service.

F. Early Retirement:

- a. Eligibility: Attainment of age 55 and completion of 15 years of credited service, or completion of 20 years of credited service.
- b. Benefit: Benefit accrued to date of retirement, actuarially reduced to reflect commencement of benefit at an earlier age.

G. Deferred Retirement:

- a. Eligibility: Retirement subsequent to normal retirement date.
- b. Benefit: Benefit calculated as for normal retirement based upon FMC and credited service as of deferred retirement date.

H. Disability Retirement:

- a. Eligibility: Total and permanent disability prior to normal retirement age for 6 months.
- b. Benefit: The greater of (i) or (ii) below, payable for the lifetime of the participant.
 - (i) $A - B$, where A is 60% of FMC at date of disability and B is 64% of the monthly Social Security disability benefit to which the participant is entitled.
 - (ii) The participant's accrued benefit as of date of disability.

Monthly disability retirement income payable until the earliest of recovery from disability, death or normal retirement date. If the participant remains disabled until normal retirement date, the same benefit will be payable for 10 years certain (measured from normal retirement date) and life thereafter.

Outline of Principal Provisions of the Retirement Plan

H. Disability Retirement (cont'd):

If death of a disabled participant occurs prior to normal retirement date, benefit to beneficiary payable for 10 years certain and life thereafter, which can be supported by the greater of A or B, where A is the single-sum value of the accrued deferred benefit at date of death assuming continued credited service and assuming continued pay at last monthly rate to date of death and B is the lesser of (1) and (2), where (1) is 24 times FMC at date of disability and (2) is 100 times the anticipated monthly normal retirement benefit.

I. Death Benefit:

Benefit to beneficiary (payable for 10 years certain and life thereafter) which can be supported by the greater of A or B, where A is the single-sum value of the accrued deferred benefit at date of death and B is the lesser of (i) and (ii), where (i) is 24 times monthly rate of pay on October 1 preceding date of death and (ii) is 100 times anticipated normal retirement benefit.

If death occurs subsequent to normal retirement date, benefit to beneficiary payable for 10 years certain and life thereafter, which can be supported by the single sum value of the accrued benefit as of date of death.

J. Employee Contributions:

7% of basic annual compensation contributed on a *pre-tax* basis beginning after completion of two years of service eligibility requirement continuing until termination or actual retirement date.

K. Vested Benefit Upon Termination:

a. Eligibility: 100% vesting upon completion of ten (10) years of credited service - members who have completed six (6) years of credited service as of September 30, 2013 (January 16, 2018 for members of the IUPA bargaining group) are 100% vested.

b. Benefit: Accrued benefit as of date of termination multiplied by vesting percentage, payable as of normal retirement date in the normal form. After 20 years of credited service, an immediate, actuarially reduced benefit is optional.

L. Termination Benefit:

a. Eligibility: Less than 100% vested at date of termination.

b. Benefit: Return of employee contributions plus interest at the rate of 3%, compounded annually.

Outline of Principal Provisions of the Retirement Plan

M. Cost of Living Adjustment (COLA)

For members who are either (1) members of the AFSCME bargaining group or (2) not included in any bargaining unit and have attained age 62 or have attained age 55 with 20 years of credited service as of September 30, 2013 or for members of the IUPA bargaining group who have attained age 62 or have attained age 55 with 20 years of credited service as of December 31, 2013, COLA adjustments of 2.25% per annum commencing October 1st following receipt of benefits for one (1) year.

For all other members, COLA adjustments of 2.25% per annum commencing October 1st following receipt of benefits for one (1) year for 3.00% accrual service benefits and COLA adjustments of 0.75% per annum commencing October 1st after three (3) years following termination of employment for 2.50% accrual service benefits.

N. Normal Form of Payment of Retirement Income:

10 years certain and life thereafter, subject to applicable COLA adjustments.

O. Deferred Retirement Option Program (DROP)

1. Eligibility - Upon attainment of normal retirement eligibility.
2. The maximum period of participation in the DROP is sixty (60) months. For members who have not attained age 62 or attained of age 55 with 20 years of credited service as of September 30, 2013 and are either (1) members of the AFSCME bargaining group or (2) not included in any bargaining unit, maximum period of participation in the DROP is thirty-six (36) months. For all other members of the IUPA bargaining group who have not attained age 62 or have not attained age 55 with 20 years of credited service as of December 31, 2013, maximum period of participation in the DROP is thirty-six (36) months.
3. COLA is not payable during DROP participation period.
4. Interest is credited at the fixed rate of 6.5% per annum through June 30, 2012 - 3.0% per annum thereafter.

P. Changes Since Most Recent Actuarial Valuation

None.

Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

A. Mortality

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

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

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

Sample Ages (2018)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
55	30.53	33.57	30.10	33.34
60	25.60	28.54	25.44	28.44
62	23.70	26.58	23.60	26.52

Sample Ages (2038)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
55	32.67	35.41	32.26	35.21
60	27.78	30.38	27.63	30.30
62	25.87	28.40	25.78	28.35

B. Investment Return

7.55%, compounded annually, net of investment expenses - includes inflation of 2.75%.

Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

C. Allowances for Expenses or Contingencies

Provision for payment of administrative costs added to normal cost based upon non-investment expenses paid in previous year.

D. Employee Withdrawal Rates

Withdrawal Rates (Per 100 Employees)				
<u>Age</u>	<u>Males</u>		<u>Females</u>	
	<u>First 4 Years</u>	<u>4+ Years</u>	<u>First 4 Years</u>	<u>4+ Years</u>
20	15.00	8.00	9.75	13.00
25	15.00	7.90	9.75	13.00
30	15.00	7.60	9.75	11.00
35	15.00	7.40	9.75	8.90
40	15.00	5.40	9.75	8.40
45	15.00	4.00	9.75	7.90
50	15.00	4.00	9.75	7.40
55	15.00	4.00	9.75	6.90
60 & Over	15.00	4.00	9.75	6.50

E. Disability Incidence

1985 Class One Disability Study Table with separate rates for males and females.

Disability Rates Per 100 Employees		
<u>Age</u>	<u>Male</u>	<u>Female</u>
20	0.03	0.03
25	0.04	0.05
30	0.05	0.08
35	0.07	0.14
40	0.12	0.21
45	0.20	0.32
50	0.36	0.53
55	0.72	0.95
60	1.26	1.16
65	1.75	1.36
70	0.00	0.00

Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

F. Salary Increase Assumptions

Effective October 1, 2017 salary increase assumptions are as follows:

<u>Service</u>	<u>Wage Inflation</u>	<u>Promotion & Seniority</u>	<u>Total Increase</u>
0 - 5	3.25%	1.75%	5.00%
6 - 10	3.25%	0.25%	3.50%
11 - 14	3.25%	0.25%	3.50%
15 + years	3.25%	0.25%	3.50%

G. Increase in Covered Payroll

4.0%, per year not greater than the average annual increase over most recent ten years (-8.8%), not less than 0.0%.

H. Rates of Retirement

- For members of the AFSCME bargaining group or members not included in any bargaining unit hired prior to October 1, 2013 and for members of the IUPA bargaining group hired prior to January 1, 2014:

<u>Age</u>	<u>Rates of Retirement</u>	
	<u><20 years</u>	<u>20+ years</u>
< 55	N/A	9%
55	10%	40%
56 - 59	10%	40%
60	10%	40%
61	40%	40%
62	40%	40%
63 - 64	25%	20%
65	35%	100%
66 - 69	20%	100%
70 - 74	35%	100%
75 & Over	100%	100%

40% of employees enter the DROP when first eligible.

Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

H. Rates of Retirement (cont'd)

2. For members of the AFSCME bargaining group and members not included in any bargaining unit hired after September 30, 2013 and for members of the IUPA bargaining group hired after December 31, 2013:

<u>Age</u>	<u>Rates of Retirement</u>		
	<u><20 years</u>	<u>20 - 24 years</u>	<u>25+ years</u>
< 55	N/A	8%	8%
55 - 59	5%	8%	8%
60	5%	8%	40%
61	25%	25%	20%
62	35%	35%	20%
63 - 64	20%	20%	20%
65	50%	50%	15%
66	20%	20%	15%
67	20%	20%	35%
68 - 69	20%	20%	20%
70 - 74	35%	35%	100%
75 & Over	100%	100%	100%

35% of employees enter the DROP when first eligible.

I. Deferred Retirement Option Program (DROP)

The assumed period of DROP participation is four (4) years for members allowed to participate in the DROP for sixty (60) months (5 year COLA deferral). The assumed period of DROP participation is three (3) years for members allowed to participate in the DROP for thirty-six (36) months (6 year COLA deferral).

J. Smoothed Actuarial Value of Assets

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 Plan assets and whose upper limit is 120% of the fair market value of Plan assets. Smoothed actuarial value of assets marked to market October 1, 2012.

Actuarial Assumptions and Actuarial Cost Methods
Used in the Valuation

K. Actuarial Cost Method

Normal Retirement, Termination, Disability, and Death Benefits: Entry-Age-Normal 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 entry age to his assumed retirement age to fund his estimated benefits, assuming the Plan had always been in effect. The normal cost for the Plan is the sum of 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 Plan is the excess of the actuarial present value of estimated future benefits over the actuarial present value of current and future normal costs. The unfunded actuarial accrued liability as of any valuation date is the excess of the actuarial accrued liability over the assets of the Plan.

L. Changes Since Most Recent Actuarial Valuation

Investment Return was 7.65%, compounded annually, net of investment expenses - including inflation of 2.75%.

Table XII

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

All Active Participants

Attained Age Group	-----COMPLETED YEARS OF SERVICE-----							Total
	<u>0 - 4</u>	<u>5 - 9</u>	<u>10 - 14</u>	<u>15 - 19</u>	<u>20 - 24</u>	<u>25 - 29</u>	<u>30 & Over</u>	
Under 25	1	-	-	-	-	-	-	1
25 - 29	1	1	-	-	-	-	-	2
30 - 34	8	3	-	-	-	-	-	11
35 - 39	6	1	5	2	1	-	-	15
40 - 44	7	2	1	2	4	-	-	16
45 - 49	3	1	5	-	8	1	-	18
50 - 54	1	1	3	3	5	1	-	14
55 - 59	4	3	3	5	7	-	-	22
60 - 64	3	2	-	2	1	-	-	8
65 - 69	-	-	-	1	-	-	-	1
70 & Over	-	-	1	-	-	-	-	1
TOTAL	34	14	18	15	26	2	0	109

	<u>Prior Year</u>	<u>Current Year</u>
Average Attained Age	47.42 years	47.61 years
Average Hire Age	34.95 years	35.43 years
Average Pay	\$ 47,175	\$ 47,329
Percent Female	52.9%	50.5%

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

A. Entitled to Deferred Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	25	\$ 547,726	\$ 21,909
50 - 54	20	442,427	22,121
55 - 59	13	253,789	19,522
60 - 64	11	163,129	14,830
65 & Over	0	0	0
TOTAL	69	\$ 1,407,071	\$ 20,392

B. Retirees Receiving Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	0	\$ 0	\$ 0
50 - 54	0	0	0
55 - 59	26	1,031,924	39,689
60 - 64	37	1,108,942	29,971
65 - 69	54	1,518,600	28,122
70 - 74	41	1,082,081	26,392
75 - 79	20	611,460	30,573
80 - 84	19	422,000	22,211
85 - 89	10	161,798	16,180
90 - 94	8	128,245	16,031
95 & Over	2	15,952	7,976
TOTAL	217	\$ 6,081,002	\$ 28,023

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

C. Beneficiaries Receiving Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	2	\$ 9,977	\$ 4,989
50 - 54	6	79,295	13,216
55 - 59	4	51,835	12,959
60 - 64	11	172,954	15,723
65 - 69	6	103,160	17,193
70 - 74	8	143,680	17,960
75 - 79	7	133,380	19,054
80 - 84	2	8,979	4,490
85 - 89	1	9,834	9,834
90 & Over	3	32,496	10,832
TOTAL	50	\$ 745,590	\$ 14,912

D. Disabled Participants Receiving Benefits

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	2	\$ 23,723	\$ 11,862
50 - 54	1	12,153	12,153
55 - 59	1	12,993	12,993
60 - 64	1	16,743	16,743
65 - 69	6	119,830	19,972
70 - 74	0	0	0
75 & Over	1	10,893	10,893
TOTAL	12	\$ 196,335	\$ 16,361

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

E. DROP Participants

<u>Current Age Group</u>	<u>Count</u>	<u>Total Annual Benefit</u>	<u>Average Annual Benefit</u>
Less than 50	0	\$ 0	\$ 0
50 - 54	0	0	0
55 - 59	1	18,981	18,981
60 - 64	4	96,968	24,242
65 - 69	1	9,683	9,683
70 - 74	1	25,149	25,149
75 & Over	0	0	0
TOTAL	7	\$ 150,781	\$ 21,540

Retirement Plan for General Employees
Reconciliation of Employee Data

	<u>Active Participants</u>	<u>DROP</u>	<u>Terminated Vested</u>	<u>Retirees & Beneficiaries</u>	<u>Disabled</u>	<u>Total</u>
Participants as of October 1, 2017	104	13	72	257	13	459
Retired	(2)	(7)	(5)	14	0	0
Terminated Vested	(3)	0	3	0	0	0
Terminated Non-Vested	(1)	0	0	0	0	(1)
Disabled	0	0	0	0	0	0
Refunds	(5)	0	0	0	0	(5)
Deceased	0	0	0	(4)	(1)	(5)
Rehired	0	0	0	0	0	0
QDRO Put in Pay Status	0	0	0	0	0	0
Transfers In	0	0	0	0	0	0
Transfers Out	0	0	0	0	0	0
New Hires	16	0	0	0	0	16
DROP	(1)	1	0	0	0	0
Data Adjustment	1	0	(1)	0	0	0
Net Change	5	(6)	(3)	10	(1)	5
Participants as of October 1, 2018	<u>109</u>	<u>7</u>	<u>69</u>	<u>267</u>	<u>12</u>	<u>464</u>

Projected Retirement Benefits

<u>Fiscal Year Ending</u>	<u>Projected Total Annual Payout</u>
2019	7,403,044
2020	7,712,895
2021	8,090,052
2022	8,287,070
2023	8,500,423
2024	8,690,428
2025	8,947,590
2026	9,094,444
2027	9,222,209
2028	9,456,146

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

Review of Salary Experience**A. Salary Experience - Current Year**

<u>October 1, 2018 Service Groups</u>	<u>Employees *</u>	<u>Actual % Increase</u>	<u>Assumed % Increase</u>
0 - 5	12	6.22%	5.00%
6 - 10	11	2.73%	3.50%
11 - 14	16	2.18%	3.50%
15 + years	39	4.39%	3.50%
TOTAL	78	3.98%	3.73%

B. Recent Salary Experience

<u>Year Ended</u>	<u>Employees *</u>	<u>Actual % Increase</u>	<u>Assumed % Increase</u>
09/30/2017	78	3.36%	4.95%
09/30/2016	137	4.48%	4.78%
09/30/2015	168	0.66%	4.87%
09/30/2014	185	4.92%	3.75%
09/30/2013	194	0.73%	3.75%
09/30/2012	220	0.24%	3.75%
09/30/2011	230	3.62%	6.00%
09/30/2010	247	3.50%	5.96%
09/30/2009	256	2.97%	6.00%
Last 3 Years	293	3.94%	4.49%
Last 5 Years	646	3.47%	4.41%
Last 10 Years	1,793	2.83%	4.75%

* Participants who have full years of pay for both years considered.

Analysis of Investment Yield as of October 1, 2018

This Table sets forth the results of an analysis made of investment yields on the assets held under the Retirement Plan for General Employees of the City of North Miami Beach.

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

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 XVII
(Cont'd)**

Recent Plan Experience

	<u>Investment Return ¹</u>			<u>Termination</u>
	<u>Assumed Investment Return</u>	<u>Market Value Return</u>	<u>Smoothed Actuarial Value Return ²</u>	<u>Ratio of Actual to Expected</u>
09/30/2018	7.65%	8.72%	7.20%	1.3
09/30/2017	7.75%	10.94%	7.62%	7.2
09/30/2016	7.75%	6.99%	7.02%	2.4
09/30/2015	7.75%	(0.34%)	7.77%	2.0
09/30/2014	7.75%	10.51%	9.47%	0.7
09/30/2013	7.75%	12.41%	8.68%	1.3
09/30/2012	7.75%	18.59%	3.28%	0.9
09/30/2011	8.25%	0.08%	2.69%	2.1
09/30/2010	8.25%	10.28%	3.41%	0.8
09/30/2009	8.25%	5.29%	3.06%	1.1
Last 3 Years	7.72%	8.87%	7.28%	2.8
Last 5 Years	7.73%	7.28%	7.81%	2.0
Last 10 Years	7.89%	8.21%	5.99%	1.5

¹ Return calculated as $2I / (A+B-I)$

² Marked to market value October 1, 2012

**Table XVII
(Cont'd)**

Summary of Transaction Information

<u>Year Ended</u>	<u>Benefits Paid</u> ¹	<u>Administrative Expenses</u>	<u>Member Contributions</u>	<u>City Contributions</u>	<u>Smoothed Actuarial Value</u> ^{2,3}
09/30/2018	\$ 7,170,315	\$ 219,961	\$ 387,959	\$ 3,453,684	\$ 82,584,310
09/30/2017	8,348,341	178,133	551,371	3,249,182	80,469,479
09/30/2016	7,137,255	180,748	708,318	3,285,155	79,328,835
09/30/2015	6,859,718	159,900	632,868	3,528,201	77,343,898
09/30/2014	5,377,791	165,534	643,099	3,545,108	74,521,908
09/30/2013	5,412,901	173,730	791,648	3,381,418	69,374,663
09/30/2012	5,054,659	182,427	793,842	2,927,951	60,520,361
09/30/2011	4,364,366	159,677	866,568	2,812,799	60,135,822
09/30/2010	3,786,521	161,387	964,773	2,649,170	59,444,402
09/30/2009	3,320,764	113,221	924,190	2,122,612	57,832,173
09/30/2008	3,000,899	119,945	1,054,435	2,333,440	56,504,858
09/30/2007	2,849,780	43,851	900,620	2,133,251	53,575,555
09/30/2006	2,528,070	116,727	898,852	1,858,727	48,553,562
09/30/2005	2,433,315	111,722	863,779	1,738,722	45,627,713
09/30/2004	2,140,131	100,910	851,458	1,694,679	44,967,792
09/30/2003	1,964,374	76,039	799,182	1,547,537	44,459,457
09/30/2002	1,798,589	65,132	707,765	701,935	39,872,430
09/30/2001	1,798,795	84,346	639,170	634,989	44,382,287
09/30/2000	1,578,287	88,104	599,825	576,257	43,650,926
09/30/1999	1,539,900	79,210	545,770	533,119	40,229,429
09/30/1998	1,579,002	83,104	411,522	411,522	35,879,000
09/30/1997	1,624,618	48,768	371,603	349,350	33,630,000
09/30/1996	1,185,418	61,130	365,210	274,533	28,099,000
09/30/1995	962,600	138,626	358,078	344,348	25,474,000
09/30/1994	971,140	179,416	357,215	109,396	21,909,000
09/30/1993	950,065	165,545	358,538	222,624	22,762,000
09/30/1992	837,889	186,140	360,715	234,808	20,879,000

¹ Includes DROP distributions (previously included DROP benefit credits), effective for October 1, 2013 valuation date.

² Includes DROP account balances, effective for October 1, 2013 valuation date.

³ Market value prior to 2001, thousands prior to October 1, 1998.

Table XVIII

City Contribution Information

<u>Valuation Date</u>	<u>Contribution Fiscal Year End</u>	<u>Minimum Required Employer Contributions</u>	<u>Actual Employer Contributions Made</u>
10/01/2018	09/30/2020	\$ 3,375,895	N/A
10/01/2017	09/30/2019	3,205,197	N/A
10/01/2016	09/30/2018	3,453,684	\$ 3,453,684
10/01/2015	09/30/2017	3,249,182	3,249,182
10/01/2014	09/30/2016	3,285,155	3,285,155
10/01/2013	09/30/2015	3,528,201	3,528,201
10/01/2012	09/30/2014	3,545,108	3,545,108
10/01/2011	09/30/2013	3,220,136 *	3,381,418
10/01/2010	09/30/2012	2,677,804 *	2,927,951
10/01/2009	09/30/2011	2,812,799 *	2,812,799
10/01/2008	09/30/2010	2,649,170 *	2,649,170
10/01/2007	09/30/2009	2,122,612 *	2,122,612
10/01/2006	09/30/2008	2,333,440 *	2,333,440
10/01/2005	09/30/2007	2,133,251 *	2,133,251
10/01/2004	09/30/2006	1,858,727 *	1,858,727

* Based on percentage of payroll

Actuarial Valuation as of October 1, 2018**State Required Exhibit**

	<u>10/01/2017</u>	<u>Prior Assumptions 10/01/2018</u>	<u>Current Assumptions 10/01/2018</u>
A. <u>Participant Data</u>			
1. Active participants	104	109	109
2. Retired participants and beneficiaries receiving benefits	257	267	267
3. DROP participants	13	7	7
4. Disabled participants receiving benefits	13	12	12
5. Terminated vested participants	72	69	69
6. Annual payroll of active participants	\$ 4,906,153	\$ 5,158,886	\$ 5,158,886
7. Expected payroll of active employees for the following year	\$ 4,906,153	\$ 5,158,886	\$ 5,158,886
8. Annual benefits payable to those currently receiving benefits	\$ 6,653,694	\$ 7,022,927	\$ 7,022,927
9. DROP participants receiving benefits	\$ 246,897	\$ 150,781	\$ 150,781
B. <u>Assets</u>			
1. Smoothed Actuarial Value	\$ 80,469,479	\$ 82,584,310	\$ 82,584,310
2. Market Value	\$ 79,944,967	\$ 83,212,413	\$ 83,212,413
C. <u>Liabilities</u>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 16,297,654	\$ 16,957,014	\$ 17,224,480
b. Vesting benefits	911,158	843,760	863,740
c. Death benefits	298,507	321,076	325,996
d. Disability benefits	758,747	749,017	759,391
e. Total	\$ 18,266,066	\$ 18,870,867	\$ 19,173,607
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 12,242,414	\$ 11,406,950	\$ 11,593,706
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired	\$ 69,738,422	\$ 72,961,847	\$ 73,652,612
b. DROP participants	3,912,974	2,412,812	2,432,542
c. Disability retired	1,924,755	1,795,498	1,808,748
d. Beneficiaries	7,547,387	8,248,623	8,322,385
e. Miscellaneous	197,561	207,214	207,214
f. Total	\$ 83,321,099	\$ 85,625,994	\$ 86,423,501

Actuarial Valuation as of October 1, 2018

State Required Exhibit

	<u>10/01/2017</u>	<u>Prior Assumptions 10/01/2018</u>	<u>Current Assumptions 10/01/2018</u>
C. <u>Liabilities (cont'd)</u>			
4. Total actuarial present value of future expected benefit payments	\$ 113,829,579	\$ 115,903,811	\$ 117,190,814
5. Actuarial accrued liabilities	\$ 110,972,740	\$ 112,902,502	\$ 114,107,842
6. Unfunded actuarial accrued liabilities	\$ 30,503,261	\$ 30,318,192	\$ 31,523,532
D. <u>Statement of Accumulated Plan Benefits</u>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 79,210,564	\$ 83,005,968	\$ 83,783,745
b. DROP participants	3,912,974	2,412,812	2,432,542
c. Other participants	24,103,778	23,917,954	24,282,242
d. Total	<u>\$ 107,227,316</u>	<u>\$ 109,336,734</u>	<u>\$ 110,498,529</u>
2. Actuarial present value of accumulated non-vested plan benefits	<u>1,157,175</u>	<u>916,922</u>	<u>927,444</u>
3. Total actuarial present value of accumulated plan benefits	\$ 108,384,491	\$ 110,253,656	\$ 111,425,973
E. <u>Statement of Change in Accumulated Plan Benefits</u>			
1. Actuarial present value of accumulated plan benefits as of October 1, 2017			\$ 108,384,491
2. Increase / (decrease) during year attributable to:			
a. Plan amendment			\$ 0
b. Change in actuarial assumptions			1,172,317
c. Benefits paid (including DROP distributions and refunds)			(7,170,315)
d. Other, including benefits accumulated and increase for interest due to decrease in the discount period			<u>9,039,480</u>
e. Net increase			\$ 3,041,482
3. Actuarial present value of accumulated plan benefits as of October 1, 2018			\$ 111,425,973

Actuarial Valuation as of October 1, 2018

State Required Exhibit

	<u>10/01/2017</u>	<u>Prior Assumptions 10/01/2018</u>	<u>Current Assumptions 10/01/2018</u>
F. <u>Pension Cost</u>			
1. Total normal cost	\$ 699,011	\$ 759,479	\$ 771,721
2. Payment required to amortize unfunded liability	2,837,414	2,875,620	2,952,620
3. Interest	12,203	12,831	12,676
4. Total required contributions	\$ 3,548,628	\$ 3,647,930	\$ 3,737,017
5. Item 4 as a percentage of payroll	72.3%	70.7%	72.4%
6. Estimated employee contributions	\$ 343,431	\$ 361,122	\$ 361,122
7. Item 6 as a percentage of payroll	7.0%	7.0%	7.0%
8. Expected City contribution	\$ 3,205,197	\$ 3,286,808	\$ 3,375,895
9. Item 8 as a percentage of payroll	65.3%	63.7%	65.4%
G. <u>Past Contributions</u>			
1. Total contribution required (previous valuation)	\$ 3,841,643	\$ 3,548,628	\$ 3,548,628
2. Actual contributions made:			
a. Employee	\$ 387,959	N/A	N/A
b. City	3,453,684	N/A	N/A
c. Total	\$ 3,841,643	N/A	N/A
H. <u>Net Actuarial Gain (Loss)</u>	\$ 1,073,348	\$ (816,541)	\$ (816,541)
I. <u>Disclosure of Following Items:</u>			
1. Actuarial present value of future salaries - attained age	\$ 25,075,933	\$ 26,460,302	\$ 26,590,377
2. Actuarial present value of future employee contributions - attained age	\$ 1,755,315	\$ 1,852,221	\$ 1,861,326
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 3,644,532	\$ 3,728,792	\$ 3,728,792
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

Actuarial Valuation as of October 1, 2018

State Required Exhibit

J. Retirement Experience

Normal Retirement Eligibility: See Table X, Item E.

Attained Age	9/30/1999 - 9/30/2015		9/30/2016		9/30/2017		9/30/2018	
	Eligible	Retired	Eligible	Retired	Eligible	Retired	Eligible	Retired
55	48	23	3	3	4	3	1	0
56	32	8	1	0	1	1	1	0
57	30	5	2	1	2	0	1	0
58	26	11	2	1	2	0	2	0
59	19	2	0	0	2	2	2	0
60	21	4	1	0	0	0	1	0
61	20	3	2	2	1	1	0	0
62	97	34	5	3	1	1	2	0
63	62	14	0	0	2	1	0	0
64	46	7	4	2	0	0	1	0
65	40	15	0	0	2	1	0	0
66	26	8	0	0	0	0	1	0
67	16	2	1	0	0	0	0	0
68	13	4	2	1	1	0	0	0
69	9	0	1	1	1	0	1	1
70	11	2	0	0	0	0	1	0
71	10	5	0	0	0	0	0	0
72	5	1	1	0	0	0	0	0
73	4	0	0	0	1	0	0	0
74	5	0	0	0	0	0	1	1
75	6	1	0	0	0	0	0	0
76	6	0	0	0	0	0	0	0
77	6	3	0	0	0	0	0	0
78	3	1	0	0	0	0	0	0
79	2	0	0	0	0	0	0	0
80	2	0	0	0	0	0	0	0
81	2	1	0	0	0	0	0	0
82	1	0	0	0	0	0	0	0
83	1	1	0	0	0	0	0	0
Total	569	155	25	14	20	10	15	2

Data prior to September 30, 2001 as reported by prior actuary.

Actuarial Valuation as of October 1, 2018State Required Exhibit

	Unfunded Actuarial Accrued Liabilities	Current Unfunded Liabilities	Prior Assumptions Amortization Payment	Current Assumptions Amortization Payment	Remaining Funding Period
10/01/2001	Assumption / Method Change	\$ (2,264,683)	\$ (261,068)	\$ (259,860)	13 years
10/01/2001	Plan Amendment	30,728	3,542	3,526	13 years
10/01/2002	Actuarial Loss / (Gain)	7,875,540	869,436	865,139	14 years
10/01/2003	Actuarial Loss / (Gain)	(155,788)	(16,548)	(16,461)	15 years
10/01/2004	Actuarial Loss / (Gain)	3,872,796	397,394	395,192	16 years
10/01/2005	Actuarial Loss / (Gain)	3,324,555	330,705	328,779	17 years
10/01/2005	Plan Amendment	36,391	3,620	3,599	17 years
10/01/2006	Actuarial Loss / (Gain)	1,372,730	132,778	131,968	18 years
10/01/2007	Actuarial Loss / (Gain)	(1,647,502)	(155,368)	(154,380)	19 years
10/01/2008	Actuarial Loss / (Gain)	2,516,215	231,903	230,368	20 years
10/01/2008	Assumption Change	1,666,392	153,580	152,564	20 years
10/01/2009	Actuarial Loss / (Gain)	2,878,450	259,806	258,022	21 years
10/01/2010	Actuarial Loss / (Gain)	3,251,700	287,967	285,921	22 years
10/01/2011	Actuarial Loss / (Gain)	2,525,590	219,818	218,206	23 years
10/01/2011	Assumption Change	5,172,377	450,185	446,883	23 years
10/01/2012	Actuarial Loss / (Gain)	1,604,369	137,443	136,405	24 years
10/01/2012	Plan Amendment / Method Change	(5,588,630)	(478,767)	(475,150)	24 years
10/01/2012	Plan Amendment	(290,639)	(24,898)	(24,710)	24 years
10/01/2013	Actuarial Loss / (Gain)	(102,087)	(8,620)	(8,553)	25 years
10/01/2014	Actuarial Loss / (Gain)	(298,447)	(24,867)	(24,669)	26 years
10/01/2015	Actuarial Loss / (Gain)	(404,725)	(33,314)	(33,042)	27 years
10/01/2016	Actuarial Loss / (Gain)	990,353	80,611	79,938	28 years
10/01/2016	Assumption Change	2,848,175	231,831	229,894	28 years
10/01/2016	Plan Amendment	121,188	9,864	9,782	28 years
10/01/2017	Actuarial Loss / (Gain)	(1,054,775)	(84,977)	(84,252)	29 years
10/01/2017	Assumption Change	1,221,378	98,399	97,559	29 years
10/01/2018	Actuarial Loss / (Gain)	816,541	65,165	64,597	30 years
10/01/2018	Assumption Change	1,205,340	N/A	95,355	30 years
	TOTAL	\$ 31,523,532	\$ 2,875,620	\$ 2,952,620	

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 Plan and/or paid from the Plan's assets for which liabilities or current costs have not been established or otherwise taken into account for in the valuation. All known events or trends which may require a material increase in Plan costs or required contribution rates have been taken into account in the valuation.

Enrollment Number: 17-02802
Date: April 17, 2019



Lawrence F. Wilson, A.S.A.

Retirement Plan for General Employees of
the City of North Miami Beach

Glossary

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

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

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

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

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

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

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

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

Glossary

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

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

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

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

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

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

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

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

GASB. Governmental Accounting Standards Board.

Glossary

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

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

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

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

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