

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

2019 REVISED ACTUARIAL VALUATION

DECEMBER 2020

ACTUARIAL VALUATION AS OF OCTOBER 1, 2019
FOR THE PLAN YEAR BEGINNING OCTOBER 1, 2020
TO DETERMINE CONTRIBUTIONS TO BE PAID
IN THE FISCAL YEAR ENDING SEPTEMBER 30, 2021

December 1, 2020

George S. Brown
Chairman, EERP Board of Trustees
City of Boca Raton EERP
201 West Palmetto Park Road
Boca Raton, Florida 33432-3795

Dear Mr. Brown:

This report presents the results of the revised 2019 actuarial valuation of the City of Boca Raton Executive Employees' Retirement Plan. Actuarial Concepts was retained by the City to perform the actuarial valuation and prepare this report. This actuarial valuation was prepared and completed by us or under our direct supervision, and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate, and, in our opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the Plan and/or paid from the Plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends that require a material increase in plan costs or required contribution rates have been taken into account.

The use of the valuation results for financial or administrative purposes, other than those outlined in the report, is not recommended without an advance review by Actuarial Concepts of the appropriateness of such application. Members of our staff are available to discuss this report and related issues.

Very truly yours,

ACTUARIAL CONCEPTS



By: _____

Michael J. Tierney
ASA, MAAA, FCA, EA #20-1337

cc: Linda C. Davidson

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SECTION 1
KEY VALUATION RESULTS SUMMARY

The 2019 valuation of the City of Boca Raton Executive Employees' Retirement Plan ("Plan") presents a statement of the estimated financial position of the Plan as of October 1, 2019. Information in the report provides bases for determining contribution requirements and current funded status.

Key Results Synopsis

The major conclusions of the report are:

- The total City contribution for the 2019-2020 plan year is \$2,320,275 if paid monthly. If paid as of October 1, 2019, the City contribution would be \$2,234,407.
- The total City contribution for the 2020-2021 plan year is \$2,628,306 if paid monthly. If paid as of October 1, 2020, the City contribution would be \$2,532,304.
- The Plan incurred actuarial losses of approximately \$811,000, mostly due to a combination of new retiree liabilities more than assumed and salary losses. These losses were partially offset by gains due to a higher yield on assets (based on actuarial value and 5-year recognition of yields differing from assumed rate) than anticipated by the assumptions and demographic experience somewhat different than expected.
- The Plan is 77% funded on an accrued benefit liability and actuarial assets basis per State required disclosures of Chapter 112.63 (using the State mandated interest rate of 7.75%).
- The Plan is 68% funded on a projected liability/actuarial asset measurement basis (and using the valuation interest rate of 7.15%).

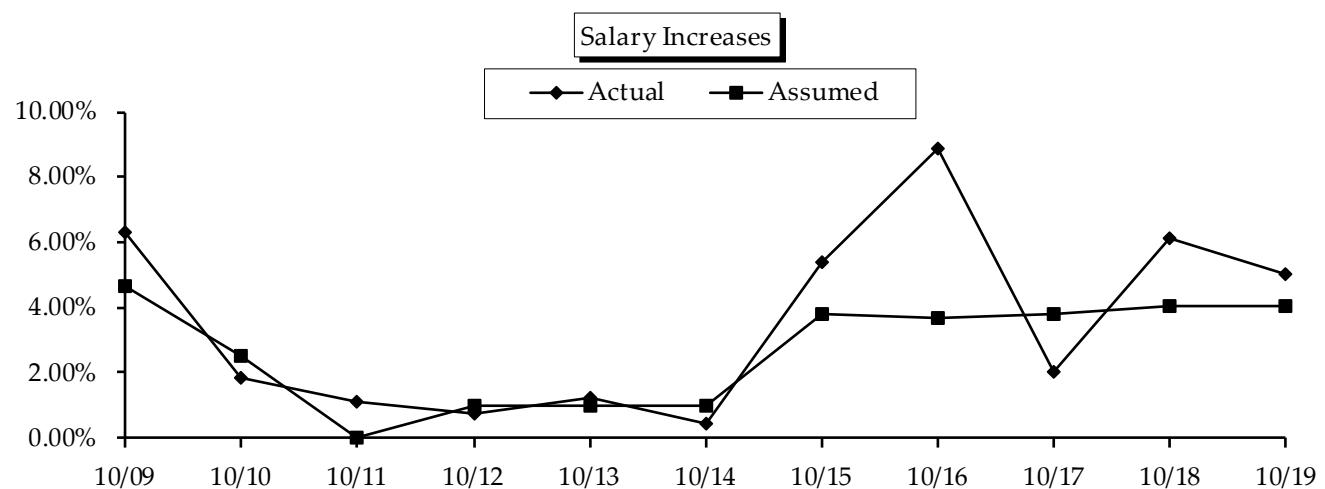
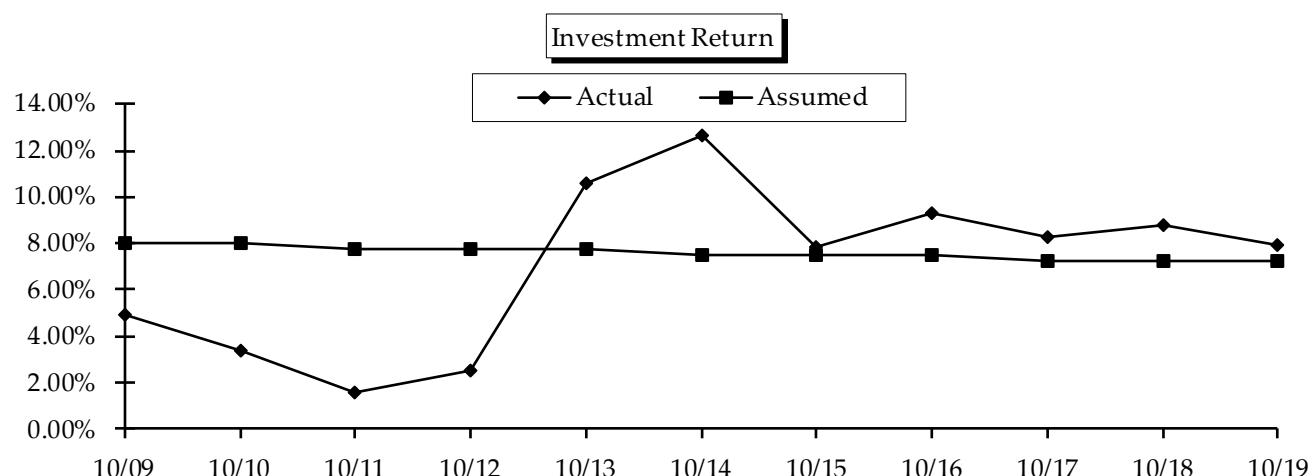
Change since Last Valuation

There have been no changes to the actuarial cost method since the last valuation. There have, however, been changes to the actuarial assumptions. The retirement and termination decrements have been updated based on experience, the discount rate has been lowered to 7.15% from 7.25%. There was also a change to the plan provisions; the interpretation of the COLA provision has changed from a five year delay from the end of year one to a four year delay. Further the payroll growth assumption has been lowered from 3.5% to 0.53% and the amortization period for the current base has been increased from 15 years to 18 years. Amortization periods for all other bases have been increased by three years accordingly.

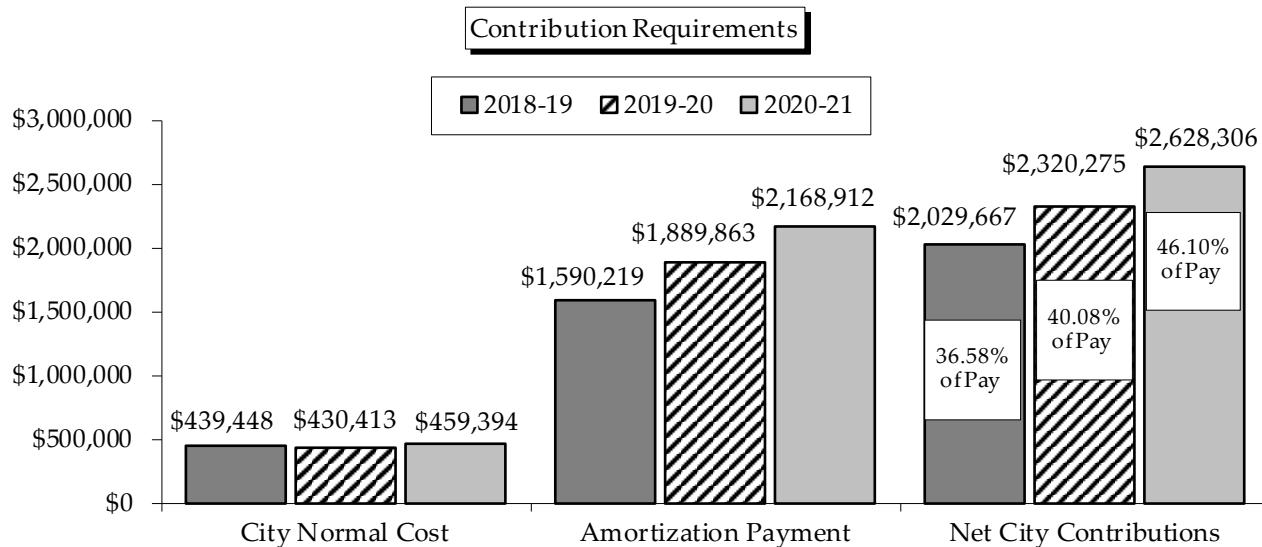
A summary of current Plan provisions is included in Appendix A. Actuarial assumptions and cost method are summarized in Appendix B, along with explanations of other valuation procedures. Appendix C contains asset information. Appendix D contains census data information

Plan Experience

For the 12 months ended September 30, 2019, the actual experience under the Plan, in aggregate, was less favorable than expected, resulting in a net actuarial loss of approximately \$811,000. This loss was mainly attributable to a combination of new retiree liabilities more than assumed (loss of \$1,030,276), salary losses (\$134,321) and other miscellaneous losses. These losses were partially offset by gains due to a higher yield on assets than anticipated by the assumptions, with a yield based on actuarial value of assets of 7.92% versus the assumed rate of 7.25% (gain of \$278,558).



City Contribution Requirements

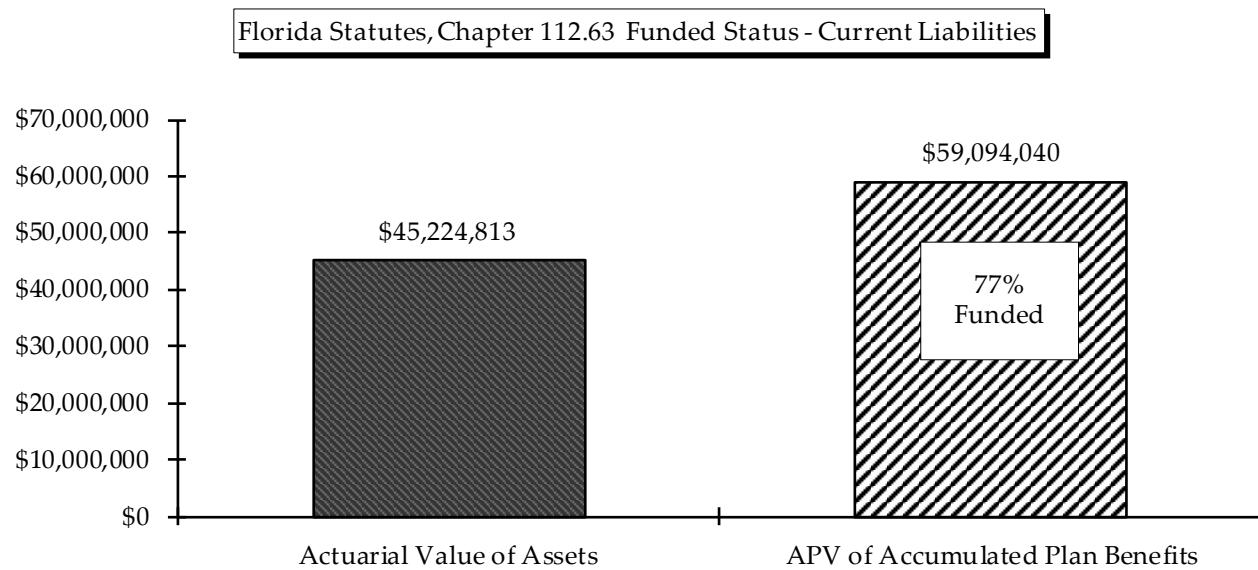


Annual Requirements*	2018-19	2019-20	2020-21
Normal Cost	\$ 1,049,837	\$ 1,067,231	\$ 1,086,579
Expected Member Contributions	610,389	636,818	627,185
City Normal Cost	\$ 439,448	\$ 430,413	\$ 459,394
Amortization Payment	1,590,219	1,889,863	2,168,912
Net City Normal Cost/Recommended Contribution	\$ 2,029,667	\$ 2,320,275	\$ 2,628,306
Recommended City Contribution if Paid at Beginning of Year	1,954,554	2,234,407	2,532,304

* Assumed payable in 12 equal installments beginning October 31 of the year following the valuation date. Member contributions reduce the normal cost.

Contribution requirements have increased in dollar amount and as a percentage of payroll since the last valuation, due mostly to the recent experience losses of the plan, and the change in Plan provisions. Note that contributions are expected to increase in dollar amount as payroll increases, but that actuarial losses exacerbated the increase.

Florida Statutes, Chapter 112.63 Funded Status – Current Liabilities

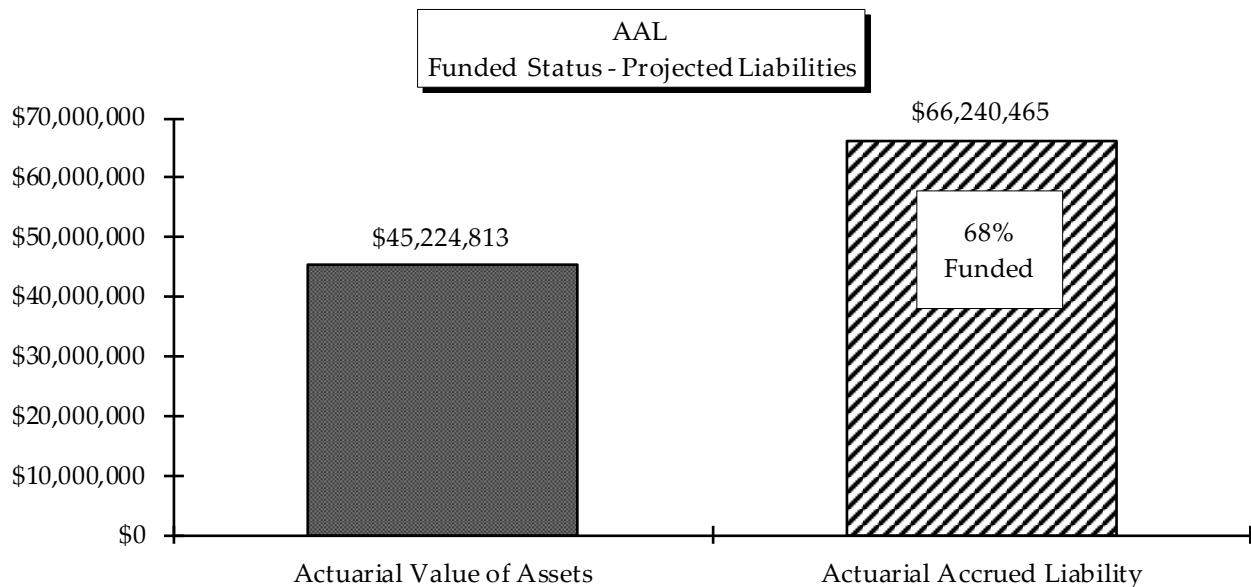


A comparison of current actuarial value of assets of the fund with the current actuarial present value (APV) of benefits accrued based on credited service and salary to date is now a required disclosure under Florida Statutes, Chapter 112.63. This measurement is often used as a surrogate for the liability if the Plan were to stop future benefit accruals. It is called "current liability" since it is based only on current earned benefits, even though the actual payment of those benefits extends many years into the future. The accumulated benefit liability APVs were developed using the statute required assumed rate of future investment return of 7.75%.

The current liability is normally expected to be more than 100% funded for an ongoing plan since the plan will ultimately be liable for a greater accrued benefit (the credited-projected benefit).

The Plan's current funded status is 77% based on actuarial value of assets. On market value, funded status is 79%.

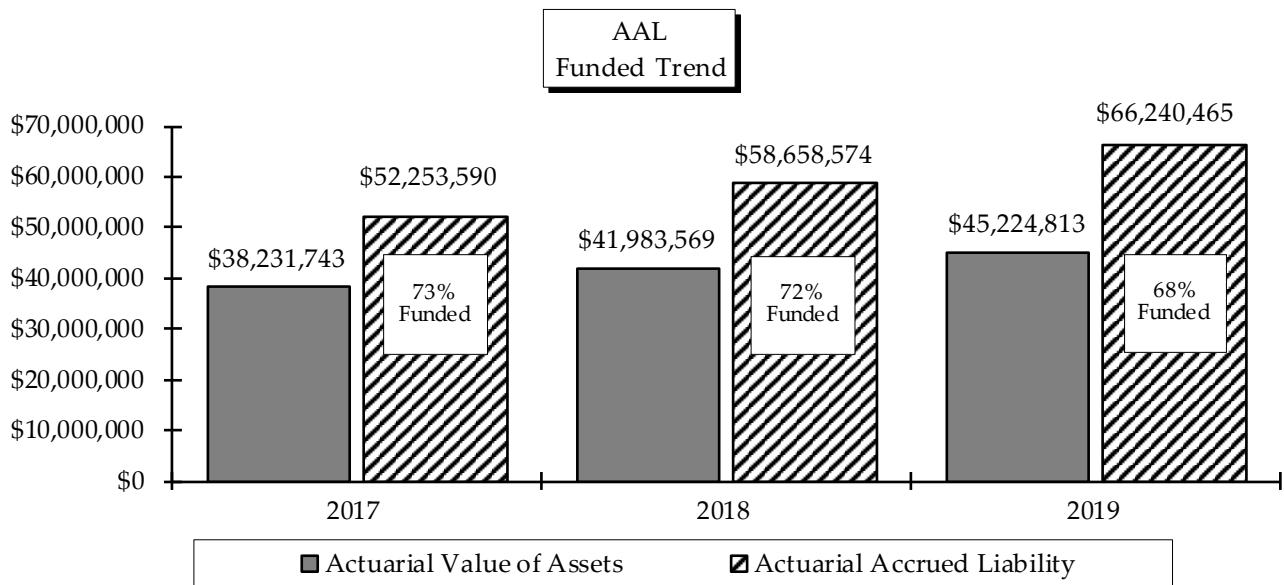
AAL Funded Status - Projected Liabilities



A comparison of assets with the APV of benefits accrued based on credited service to date, but projected salary at retirement (referred to as credited-projected benefits), is often used to judge the progress to date of funding the "ultimate" liability associated with service earned to date. The credited-projected benefit liability is not normally expected to be 100% funded, but a maturing plan's funded ratio should increase over time. The AAL APVs were developed using an assumed rate of interest discount of 7.15%.

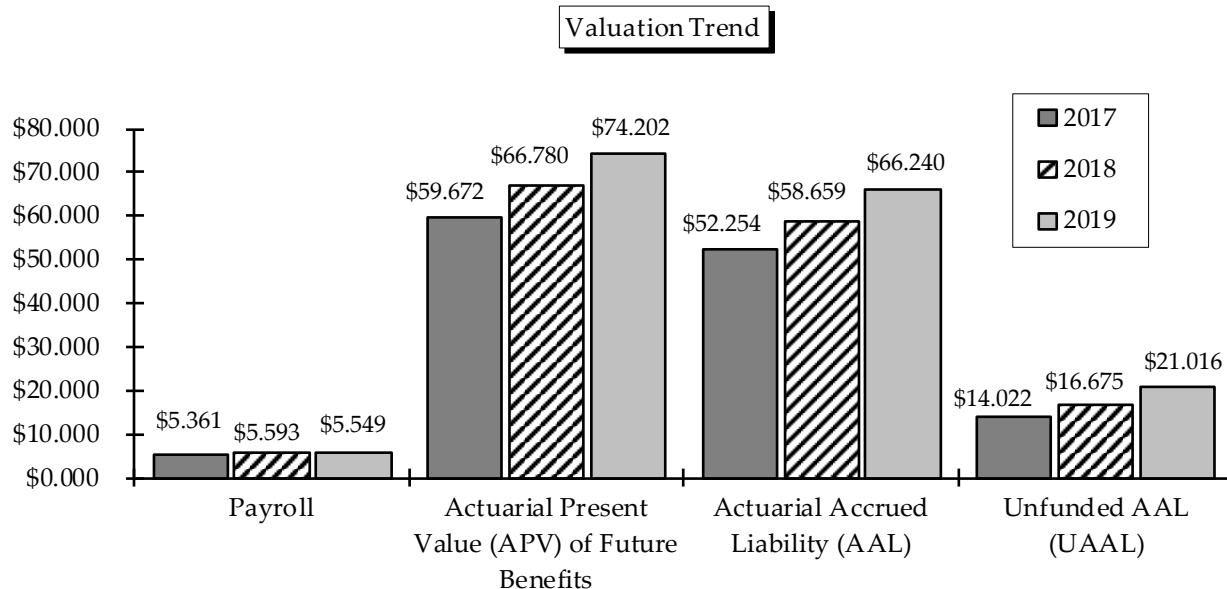
The Plan's AAL projected funded status is 68%.

AAL Funded Trend



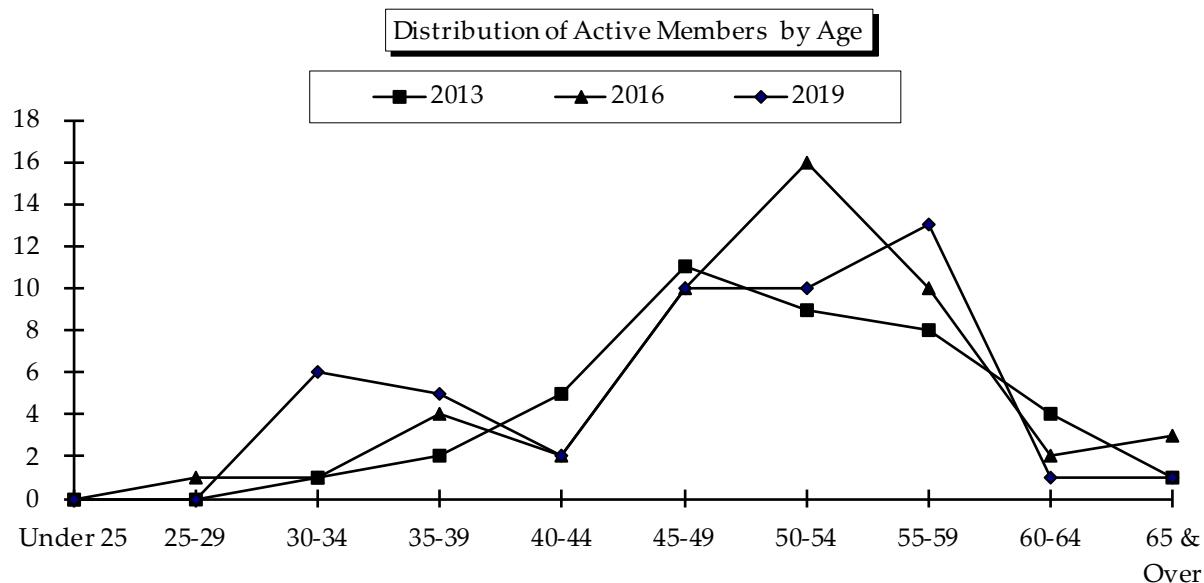
The AAL funded trend has declined slightly since last year due to the demographic losses and the change in plan provisions overwhelming the asset gains.

Valuation Trend



Payroll was flat, while Plan liabilities and UAAL have increased more than expected, due to the net actuarial losses. In addition, liabilities will grow automatically due to the nature of the present value calculations, since discounts are removed as ongoing members progress closer to retirement.

Participation Trend



True Costs

It should be noted that the true costs of a retirement plan cannot be determined until its future unfolds. No one can precisely predict the interest earnings on fund assets, member termination rates, future salary levels, mortality experience, etc. Estimates based on experience with similar groups, along with the judgment of the actuary and the Plan sponsor, can provide a reasonable approximation of this true cost. As actual experience emerges under the Plan, it will be necessary to study the continued appropriateness of the techniques and assumptions used and to adjust the contribution rate as necessary.

SECTION 2
ACTUARIAL VALUATION DEVELOPMENT

Date and Basis of Valuation

Estimated liabilities for the benefits provided by City of Boca Raton Executive Employees' Retirement Plan and the contributions required to fund these liabilities have been determined as of October 1, 2019, based upon:

1. the provisions of the Plan, as applicable October 1, 2019, as summarized in Appendix A;
2. the actuarial assumptions and actuarial cost method, as summarized in Appendix B;
3. the statement of trust fund assets as of October 1, 2019, provided by the City, as summarized in Appendix C; and
4. the member data as of October 1, 2019, provided by the City, as summarized in Appendix D.

The trust fund asset information has been reconciled by the City. The member data has been supplied by the City and provided as representative of the current participating group. While the asset and member information was reviewed for overall reasonableness, Actuarial Concepts has relied on the City for this information and does not assume responsibility for either its accuracy or completeness.

Member Reconciliation

		Members					
		Actives	Retirees and Beneficiaries	DROP Retirees	Disabled Retirees	Vested Terminateds	Pending Refunds
Members at	10/01/18	49	28	7	-	11	2
Increase (Decrease) Due to:							
Retirements		(1)	1	-	-	-	-
DROP Retirement		(3)	-	3	-	-	-
Nonvested Terminations		(1)	-	-	-	-	1
Vested Terminations		(1)	-	-	-	1	-
New Entrants		4	-	-	-	-	-
Deaths		-	-	-	-	-	-
Rehires		-	-	-	-	-	-
Disableds		-	-	-	-	-	-
From LP Status		-	-	-	-	-	-
Lump-Sum Payment		-	-	-	-	-	(3)
Transfers		1	-	-	-	-	-
Members at	10/01/19	48	29	10	-	12	-

Valuation Financial Values

1.	Participation	
	(a) Number of Active Members	48
	(b) Number of Inactive Members (includes DROP Members)	51
	(c) Annualized Valuation Payroll for Contributing Members for Next 12 Months*	\$ 5,549,081
	(d) Total Valuation Payroll (including any Members over Normal Retirement Age)*	5,549,081
2.	Actuarial Present Value (APV) of Future Benefits as of	10/01/19
	(a) Active Members	
	(1) Retirement	26,689,423
	(2) Withdrawal	914,261
	(3) Disability	718,587
	(4) Death	245,241
	(5) Refund of Contributions	<u>13,505</u>
	(6) Total	\$ 28,581,016
	(b) Retirees and Beneficiaries	42,933,587
	(c) Disabled Retirees	123,179
	(d) Vested Terminated and Pending Refunds	<u>2,563,977</u>
	(e) Total APV Future Benefits	\$ 74,201,759
3.	APV Apportionment of line 2(e)**	
	(a) APV of Total Future Normal Costs	7,961,294
	(b) Actuarial Accrued Liability [(2e)-(3a)]	66,240,465
	(c) Actuarial Value of Assets	<u>45,224,813</u>
	(d) Unfunded AAL (UAAL) [(3b)-(3c)]	\$ 21,015,652
4.	Breakdown of UAAL on line 3(d)	
	(a) UAAL [3(d)]	21,015,652
	(b) Change in UAAL Due to Assumption and Plan Changes	<u>3,696,857</u>
	(c) UAAL Before Change [(4a)-(4b)]	\$ 17,318,795
	(d) Expected UAAL	<u>16,507,979</u>
	(e) Actuarial (Gain) Loss [(4c)-(4d)]	\$ 810,816
5.	Contribution Requirements Due End of Month***	October-20
		Equiv. Annual Amount
		% of Payroll
	(a) Plan Normal Cost	\$ 1,086,579
	(b) Expense Normal Cost	-
	(c) Total Plan Normal Cost	\$ 1,086,579
	(d) Amortization of UAAL	2,168,912
	(e) Total Required Plan Contribution [(5c)+(5d)]	\$ 3,255,491
	(f) Estimated Member Contributions	627,185
	(g) Net City Contribution [(5e)-(5f)]	2,628,306
	(h) City Contribution if paid	10/1/20
		2,532,304
		44.41%

* Excludes DROP Members.

** Calculated in accordance with the Individual Entry Age Actuarial Cost Method.

*** Assumed payable in 12 equal installments at the end of each month beginning 10/31/20.

Includes payroll growth rate of 0.53%.

Explanation of Financial Values**Actuarial Present Value of Future Benefits (line 2e)**

The actuarial present value (APV) of future benefits is determined by first measuring the benefit amount that would be available for each member at various future dates (assuming future service credits earned and future salary increases awarded) under each of the events provided for by the Plan (retirement, disability, death, termination of employment). Then the future value of those benefit entitlements is determined by multiplying the various benefit amounts by the then current value of the annuities associated with those amounts. Finally, the APV of those future benefit values is determined by applying discounts to recognize the time value of money and probabilities of death, disability, termination of employment, etc.

APV of Total Future Normal Costs (line 3a)

The APV of future normal costs is that portion of the total APV of future benefits, as described above, that is assigned to future plan years by the Individual Entry Age Actuarial Cost Method (described in Appendix B).

Actuarial Accrued Liability (line 3b) and**Unfunded Actuarial Accrued Liability (line 3d)**

The actuarial accrued liability (AAL) and the unfunded AAL (UAAL) (the AAL less the actuarial value of assets) are actuarial values generated under the Individual Entry Age Actuarial Cost Method, as described in Appendix B. These liability amounts are not the APV of benefits accrued to date by members but are actuarially determined amounts based on the accrual of Individual Entry Age normal cost amounts due prior to the valuation date. The liability for benefits accrued to date (the APV of accumulated benefits) is provided in Section 3.

Plan Normal Cost (line 4a)

The Plan normal cost for the 12-month period beginning on the valuation date has been determined by first calculating for each member an individual yearly normal cost (that changes in dollar amount as pay increases, but is constant as a percent of each individual's pay), then adding together to obtain the Plan normal cost amount as of the beginning of the year. This preliminary total is then adjusted for interest credits assuming contributions are made quarterly and an amount to allow for expected annual expenses.

Total Required Plan Contribution (line 4e) and**Net City Contribution (line 4g)**

The total required contribution is the annual amount necessary to cover the normal cost and amortize the initial UAAL as of October 1, 2003, over a period of 30 years from October 1, 2003, over 30 years from date of inception for any changes to the Plan, assumptions or cost methodology, and over 18 years from date of inception for any actuarial gains or losses established after October 1, 2019. Each year's UAAL portion can be either positive or negative, with amortization credits occurring if negative. The City's net contribution is equal to the total required contribution less estimated member contributions.

Current Market Value of Assets vs. Expected Retirement Benefits

Year	Market Value of Assets with Expected Interest Less Retirement Benefits	Expected Retirement Benefits of Current and Emerging Retirees
2019	\$ 46,598,327	\$ 3,574,607
2020	46,355,500	3,918,688
2021	45,751,231	4,215,770
2022	44,806,674	4,350,341
2023	43,660,010	4,568,390
2024	42,213,311	4,676,043
2025	40,555,519	4,872,094
2026	38,583,145	5,078,136
2027	36,263,704	5,339,419
2028	33,517,140	5,523,774
2029	30,389,841	5,817,630
2030	26,745,085	5,976,364
2031	22,680,994	6,124,148
2032	18,178,537	6,225,361
2033	13,252,942	6,362,672
2034	7,837,855	6,428,335
2035	1,969,927	6,521,367
2036	-	6,629,600
2037	-	6,653,360
2038	-	6,650,408
2039	-	6,616,070
2040	-	6,573,874
2041	-	6,505,912
2042	-	6,453,027
2043	-	6,398,909
2044	-	6,329,865
2045	-	6,199,781
2046	-	6,062,874
2047	-	5,956,230
2048	-	5,795,961

This State required exhibit is somewhat misleading, since future expected contributions are not included. The actuarial methodology is based on fully funding liabilities when they come due to ensure the Plan will not run out of money.

Sensitivity Study – Estimated Valuation Financial Values at 5.15% Interest

This State required exhibit presents a pro forma valuation that estimates the effect on projected liabilities and contribution requirements if the Plan were to earn a return over the long term at a lower rate than the current assumed rate. A two percentage point difference in assumed rate was valued in accordance with State reporting requirements. Although projected liabilities would increase by about 32%, the net City contribution would increase by about 50% because the increase had no prior funding, whereas the present value of benefits based on current assumptions are partially funded. For returns between the current valuation rate and the pro forma rate, one can interpolate an estimate of resultant contribution requirements. Note if long term returns are greater than the current valuation assumed rate, the expected contribution requirements would be less than the current valuation requirement.

Sensitivity Study - Estimated Valuation Financial Values at 5.15% Interest

1. Participation			
(a) Number of Active Members	48		
(b) Number of Inactive Members (includes DROP Members)	51		
(c) Annualized Valuation Payroll for Contributing Members for Next 12 Months*	\$ 5,549,081		
(d) Total Valuation Payroll (including any Members over Normal Retirement Age)*	5,549,081		
2. Actuarial Present Value (APV) of Future Benefits as of	10/01/19		
(a) Active Members			
(1) Retirement	37,974,297		
(2) Withdrawal	1,512,033		
(3) Disability	1,073,447		
(4) Death	336,102		
(5) Refund of Contributions	15,712		
(6) Total	\$ 40,911,591		
(b) Retirees and Beneficiaries	53,295,716		
(c) Disabled Retirees	123,179		
(d) Vested Terminated and Pending Refunds	3,768,529		
(e) Total APV Future Benefits	\$ 98,099,015		
3. APV Apportionment of line 2(e)*			
(a) APV of Total Future Normal Costs	13,569,453		
(b) Actuarial Accrued Liability [(2e)-(3a)]	84,529,562		
(c) Actuarial Value of Assets	45,224,813		
(d) Unfunded AAL (UAAL) [(3b)-(3c)]	\$ 39,304,749		
4. Breakdown of UAAL on line 3(d)			
(a) UAAL [3(d)]	39,304,749		
(b) Change in UAAL Due to Assumption Changes	21,985,954		
(c) UAAL Before Change [(4a)-(4b)]	\$ 17,318,795		
(d) Expected UAAL	16,507,979		
(e) Actuarial (Gain) Loss [(4c)-(4d)]	\$ 810,816		
5. Contribution Requirements Due End of Month**	October-20	Equiv. Annual Amount	% of Payroll
(a) Plan Normal Cost	\$ 1,797,617	31.53%	
(b) Expense Normal Cost	-	0.00%	
(c) Total Plan Normal Cost	\$ 1,797,617	31.53%	
(d) Amortization of UAAL	3,458,925	60.67%	
(e) Total Required Plan Contribution [(5c)+(5d)]	\$ 5,256,542	92.20%	
(f) Estimated Member Contributions	627,185	11.00%	
(g) Net City Contribution [(5e)-(5f)]	4,629,357	81.20%	
(h) City Contribution if paid 10/1/19	4,505,600	79.02%	

* Excludes DROP Members.

** Calculated in accordance with the Individual Entry Age Actuarial Cost Method.

*** Assumed payable in 12 equal installments at the end of each month beginning 10/31/20.

Includes payroll growth rate of 3.5%.

Derivation of Current UAAL

Development of UAAL as of Valuation Date			
1. Unfunded Actuarial Accrued Liability (UAAL) as of	10/1/2018	\$ 16,675,005	
2. Normal Cost - Year Ended	9/30/2019	1,299,987	
3. Interest Accrued on (1) and (2)		1,303,187	
4. Contributions - Year Ended	9/30/2019	3,043,962	
5. Interest Accrued on (4)		181,196	
6. Expected UAAL at	10/1/2019	16,053,021	
7. Transfer from General Plan		454,958	
8. Service Purchases		-	
9. Changes Due to:			
(a) Actuarial Assumptions		167,876	
(b) Plan Changes		3,528,981	
(c) Actuarial (Gain)/Loss		810,816	
(d) Total		\$ 4,507,673	
10. UAAL at Valuation Date		21,015,652	

Derivation of Actuarial Accrued Liability

Actuarial Accrued Liability (AL) 10/18	\$ 58,658,574
Normal change in AL (removal of discount, addition of a year of normal cost)	2,340,702
Transfer from General plan	454,958
Services Purchases	-
Experience (Gain)/Loss	
Active Decrements	58,066
Salary Loss	134,321
New Retirements and Vested Terminations	139,138
New Members (including transfers)	96,860
Retiree Mortality (fewer deaths)	196,687
Data Changes & Other	464,302
Change in Retirement and Withdrawal Rate	
Assumptions	(484,873)
Change in Rate of Investment Return	652,749
Change in Plan Provisions	3,528,981
Actuarial Accrued Liability (AL) 10/19	\$ 66,240,465

SECTION 3
ANALYSIS OF VALUATION RESULTS

Discussion of Valuation Results

If the participating group remained unchanged and all the actuarial assumptions were realized, the Plan's experience would be as anticipated, and there would be no actuarial gain or loss. If the experience were less favorable than anticipated, an actuarial loss would result; if more favorable, an actuarial gain would result.

For the 12 months ended September 30, 2019, the actual experience under the Plan, in aggregate, was less favorable than expected, resulting in a net actuarial loss of approximately \$811,000. This loss was mainly attributable to a combination of new retiree liabilities more than assumed (loss of \$1,030,276), salary losses (\$134,321) and other miscellaneous losses. These losses were partially offset by gains due to a higher yield on assets than anticipated by the assumptions, with a yield based on actuarial value of assets of 7.92% versus the assumed rate of 7.25% (gain of \$278,558).

Future valuations will monitor the Plan's experience to determine whether actuarial gains or losses have occurred since the previous valuation. Recognition of these actuarial gains or losses will be made through adjustments to the UAAL and amortized as provided in Appendix B.

It should be noted that the true costs of a retirement plan cannot be determined until its future unfolds. No one can precisely predict the interest earnings on retirement fund assets, mortality rates to be experienced, member termination rates, future salary levels, etc. Estimates based on experience with similar groups, along with the judgment of the actuary and the Plan sponsor, can provide a reasonable approximation of this true cost. As actual experience emerges under the Plan, it will be necessary to study the continued

appropriateness of the techniques and assumptions employed and to adjust the contribution rate as necessary.

Valuation Comparison Table

	10/01/18	10/01/19 Before Changes	10/01/19 After Changes
1. Member Data			
(a) Active Members	49	48	48
(b) Retirees, Beneficiaries and Disableds (includes DROP Members)	35	39	39
(c) Vested Terminated and Limited Members	13	12	12
(d) Annualized Valuation Payroll for Contributing Members for Next 12 Months*	\$ 5,593,482	\$ 5,549,081	\$ 5,549,081
(e) Actuarial Present Value (APV) of Future Valuation Payroll	38,141,396	36,483,869	36,483,869
(f) Total Annual Benefit Payments	2,847,326	3,210,071	3,210,071
2. Assets			
(a) Market Value	44,116,424	46,598,327	46,598,327
(b) Actuarial Value	41,983,569	45,224,813	45,224,813
3. Liabilities			
(a) APV of Future Benefits			
(1) Active Members			
--Retirement	27,917,847	26,947,938	26,689,423
--Withdrawal	445,070	459,186	914,261
--Disability	673,180	641,540	718,587
--Death	255,431	241,019	245,241
--Refund of Contributions	11,372	13,206	13,505
--Total	\$ 29,302,900	\$ 28,302,889	\$ 28,581,016
(2) DROP Retirees	Incl Below	Incl Below	Incl Below
(3) Retirees and Beneficiaries	35,373,595	39,891,003	42,933,587
(4) Vested Terminateds and Pending Refunds	2,103,716	2,386,821	2,563,977
(5) Total	\$ 66,780,211	\$ 70,580,713	\$ 74,201,759
(b) APV of Vested Accrued Benefits	52,559,686	56,444,953	60,391,115
(c) APV of All Accrued Benefits	55,831,172	59,217,330	64,333,225
(d) Actuarial Accrued Liability (AAL)			
(1) Retirement	20,612,293	19,706,130	19,856,482
(2) Withdrawal	49,260	71,742	198,121
(3) Disability	360,831	340,997	404,568
(4) Death	157,033	144,458	158,038
(5) Refund of Contributions	1,846	2,457	2,514
(6) Inactives	37,477,311	42,277,824	45,620,743
(7) Total	\$ 58,658,574	\$ 62,543,608	\$ 66,240,465
(e) Unfunded AAL (UAAL)	16,675,005	17,318,795	21,015,652
4. Breakdown of Plan Normal Costs			
(a) Retirement	1,149,611	1,141,003	1,157,816
(b) Withdrawal	56,134	53,297	103,659
(c) Disability	51,125	49,398	52,520
(d) Death	16,240	16,250	15,189
(e) Refund of Contributions	(205,880)	(242,468)	(242,606)
(f) Total	\$ 1,067,231	\$ 1,017,481	\$ 1,086,579

Valuation Comparison Table (continued)

	09/30/20	09/30/21	09/30/21
5. Contribution Requirements* for Year Ended			
(a) Plan Normal Cost**	\$ 1,067,231	\$ 1,017,481	\$ 1,086,579
(b) Amortization Payment	1,889,863	1,889,318	2,168,912
(c) Total Plan Requirements*	\$ 2,957,093	\$ 2,906,799	\$ 3,255,491
(d) Estimated Member Contributions	636,818	631,763	627,185
(e) Total City Requirements*	\$ 2,320,275	\$ 2,275,036	\$ 2,628,306
(f) Total City Requirement Adjusted to End of Year***	2,396,401	2,349,677	2,713,364
6. Past Contributions for Year Ended	9/30/2019		
(a) (1) Contribution Required by City EOY Adjusted	\$ 2,096,259		
(2) Contribution Required by Members EOY Adjusted	630,415		
(b) (1) Actual City Contributions Paid	1,954,554		
(2) Actual Member Contributions Paid	634,450		
(c) (1) Actual City Contribution Interest Adjusted to End of Year	2,096,259		
(2) Actual Member Contribution Interest Adjusted to End of Year	657,046		

* Annual amounts assumed payable in 12 equal installments at the end of each month.

Includes a payroll growth rate of 0.53%.

** Normal cost is determined based on the Individual Entry Age Actuarial Cost Method.

*** Includes interest adjustments at the valuation rate on amounts to end of year.

Effect of Amortization Policy on Contribution Requirements

It is intended that the initial UAAL be amortized over a period of 30 years from October 1, 2003. UAAL bases established due to increases or decreases in liabilities attributable to changes in plan provisions and/or actuarial assumptions be amortized over 30 years from inception. Actuarial (gains) or losses will be amortized over 18 years from inception, and the remaining periods of current bases will be increased by 3 years. The amortization schedule is presented below:

	Initial Amount	Date of First Charge	Years Remaining 10/1/2019	Amortization Payment 2020-2021	Outstanding Balance at 10/1/2019
UAAL Bases:					
Initial	\$ 2,240,543	10/01/04	14	\$ 141,334	\$ 1,294,598
2004 Increase	1,291,030	10/01/05	15	149,897	1,431,860
2005 Loss	159,792	10/01/06	4	6,794	23,727
2006 Loss	126,096	10/01/07	5	8,398	35,565
2007 Gain	(102,389)	10/01/08	6	(8,343)	(41,145)
2008 Loss	1,617,418	10/01/09	7	147,380	823,199
2008 Increase	440,783	10/01/09	19	46,530	506,903
2009 Loss	2,201,117	10/01/10	8	214,613	1,330,347
2009 Decrease	(432,173)	10/01/10	20	(44,523)	(497,748)
2010 Loss	557,597	10/01/11	9	56,720	384,234
2010 Increase	693,920	10/01/11	21	69,754	798,487
2011 Loss	1,777,394	10/01/12	10	185,637	1,357,758
2011 Increase	519,511	10/01/12	22	50,944	595,959
2012 Loss	1,331,895	10/01/13	11	141,294	1,104,994
2012 Decrease	(328,136)	10/01/13	23	(31,384)	(374,527)
2013 Gain	(154,216)	10/01/14	12	(16,490)	(136,796)
2014 Gain	(957,633)	10/01/15	13	(102,626)	(897,114)
2014 Increase	1,055,238	10/01/15	25	95,945	1,186,102
2015 Gain	(73,175)	10/01/16	14	(7,825)	(71,679)
2016 Gain	1,220,332	10/01/17	15	129,784	1,239,737
2016 Increase	1,853,018	10/01/17	27	160,037	2,038,793
2017 Loss	725,968	10/01/18	16	76,573	759,638
2017 Decrease	453,501	10/01/18	28	38,161	492,694
2018 Loss	2,983,997	10/01/18	17	304,150	3,122,392
2019 Loss	810,816	10/01/19	18	76,564	810,816
2019 Increase	3,696,857	10/01/19	30	279,594	3,696,857
Total				\$ 2,168,912	\$ 21,015,652

UAAL Repayment Schedule

End of Year	UAAL Balance	Amortization Payments
2019-2020	\$ 21,015,652	\$ 2,157,476
2020-2021	20,291,042	2,168,912
2021-2022	19,502,817	2,180,406
2022-2023	18,646,368	2,185,096
2023-2024	17,732,580	2,188,146
2024-2025	16,442,918	2,208,264
2025-2026	15,082,830	2,068,640
2026-2027	14,143,886	1,858,076
2027-2028	12,937,746	1,809,065
2028-2029	11,918,859	1,624,998
2029-2030	11,277,977	1,485,432
2030-2031	10,735,086	1,510,690
2031-2032	9,567,182	1,477,672
2032-2033	8,459,002	1,493,841
2033-2034	6,779,785	1,362,742
2034-2035	6,114,617	1,126,100
2035-2036	5,727,405	802,820
2036-2037	5,308,138	807,075
2037-2038	4,854,502	727,590
2038-2039	4,450,485	680,272
2039-2040	4,066,429	733,105
2040-2041	3,600,372	659,457
2041-2042	3,177,021	606,027
2042-2043	2,778,557	644,493
2043-2044	2,311,894	647,909
2044-2045	1,808,338	542,420
2045-2046	1,377,678	545,295
2046-2047	913,257	320,786
2047-2048	602,199	322,486
2048-2049	312,344	324,195
2049-2050	0	-

Current Liabilities/Asset Comparison*

Accumulated Plan Benefits

	10/1/18	10/1/19
1. Actuarial Present Value (APV)** of Vested Accrued Benefits		
(a) Vested Terminated Participants and Pending Refunds	\$ 1,918,928	\$ 2,302,279
(b) Retirees and Beneficiaries	33,718,288	40,506,366
(c) DROP Retirees	Incl in (b)	Incl in (b)
(d) Active Participants	14,022,701	13,587,608
(e) Total APV** of Vested Accrued Benefits	<u>\$ 49,659,917</u>	<u>\$ 56,396,253</u>
2. APV** of Nonvested Accrued Benefits	<u>3,030,447</u>	<u>2,697,787</u>
3. APV** of Accumulated Plan Benefits [(1)+(2)]	\$ 52,690,364	\$ 59,094,040
4. Actuarial Value of Assets	41,983,569	45,224,813
5. Excess (if any) of APV** of Accumulated Plan Benefits over the Actuarial Value of Assets [(3)-(4)]	10,706,795	13,869,227
6. Percent Funded [(4)/(3)]	80%	77%

Statement of Changes in Accumulated Plan Benefits*

1. APV** of Accumulated Plan Benefits at	10/1/18	\$ 52,690,364
2. Increase (Decrease) During the Year Attributable to:		
(a) Plan Amendment	-	-
(b) Change in Actuarial Assumptions	2,743,665	-
(c) System Changes	-	-
(d) Benefit Payments	(3,037,491)	-
(e) Change in Benefits and APV** Factors	<u>6,697,502</u>	<u>6,697,502</u>
3. APV** of Accumulated Plan Benefits at	10/1/19	\$ 59,094,040

* Per Florida Statute 112.63 funded status.

** Based on 7.75% interest, FRS Mortality Table and other assumed decrements as described in Appendix B.

Comparison of Actual and Assumed Salary Increases

Period Ended September 30	Actual Rate of Increase	Assumed Rate of Increase
2006	6.71%	4.43%
2007	5.62%	4.34%
2008	6.84%	4.46%
2009	6.29%	4.63%
2010	1.82%	2.50%
2011	1.12%	0.00%
2012	0.74%	1.00%
2013	1.23%	1.00%
2014	0.44%	1.00%
2015	5.36%	3.78%
2016	8.85%	3.65%
2017	2.03%	3.82%
2018	6.15%	4.02%
2019	5.02%	4.02%

Comparison of Actual and Assumed Investment Returns

Period Ended September 30	Actuarial Rate of Return	Market Rate of Return	Assumed Rate of Actuarial Return
2006	7.08%	7.65%	8.00%
2007	8.28%	12.74%	8.00%
2008	3.49%	-15.18%	8.00%
2009	4.92%	2.09%	8.00%
2010	3.38%	9.64%	8.00%
2011	1.58%	0.05%	7.75%
2012	2.48%	19.36%	7.75%
2013	10.62%	14.86%	7.75%
2014	12.61%	10.12%	7.50%
2015	7.80%	0.28%	7.50%
2016	9.28%	9.07%	7.50%
2017	8.30%	15.43%	7.25%
2018	8.79%	10.98%	7.25%
2019	7.92%	5.63%	7.25%

Calculation of Actual Rate of Investment Return on Actuarial Value

Plan Year Ended September 30, 2019	
R =	$\frac{2I}{M1+M2-I}$, where
I =	the interest, dividends, plus appreciation or (depreciation)
M1 =	beginning actuarial value
M2 =	ending actuarial value
R =	$\frac{2 \times \$3,322,366}{(\$41,983,569 + \$45,224,813 - \$3,322,366)}$
R =	$\frac{\$6,644,732}{\$83,886,016}$
R =	7.92%

Calculation of Actual Rate of Investment Return on Market Value

Plan Year Ended September 30, 2019

$$R = \frac{2I}{M1+M2-I}, \text{ where}$$

I = the interest, dividends, plus appreciation or (depreciation)

M1 = beginning market value

M2 = ending market value

$$R = \frac{2 \times \$2,481,902}{(\$44,116,424 + \$46,598,327 - \$2,481,902)}$$

$$R = \frac{\$4,963,804}{\$88,232,849}$$

$$R = 5.63\%$$

Additional Disclosures

There are no additional disclosures required under Rules 22D-1.003(4)(f) and (g) of the State of Florida, Department of Management Services, Division of Retirement.

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

SUMMARY OF PLAN PROVISIONS THAT AFFECT THE VALUATION

Definitions

1. Ordinances: Original Ordinance #4745
Amendment #4805
Amendment #4839
Amendment #4925
Amendment #5021
Amendment #5152
2. Plan Year: October 1 through September 30.
3. Member: All eligible managers hired on or after December 1, 2003, and before November 1, 2007, must participate upon date of hire. All eligible managers hired after November 1, 2007 may elect to participate. Managers actively employed as of November 30, 2003, may elect to participate as of December 1, 2003. Managers are divided into four divisions:
 - Division 1 – Positions classified as D-1, D-2 and D-3
 - Division 2 – Positions designated as D-4 and higher D classifications
 - Division 3 – Assistant City Manager, Senior Assistant City Attorney and all department heads (positions classified as DD)
 - Division 4 – City Manager and City Attorney
4. Member Contributions: For all divisions, 11% of Compensation accumulated at 5% interest, compounded annually.

5. Vesting Service:

The number of full and fractional years worked from the later of date of hire or Effective Date to date of termination or retirement, plus any past service purchased as provided below.

Vesting Service credit may be purchased for full-time employment with the City of Boca Raton prior to the Effective Date either by (1) payment to the Plan within 30 days of Effective Date of 70% of the full actuarial cost of such service credit, or (2) payment to the Plan before separation of employment or entry into DROP 100% of the full actuarial cost of such service credit. Service that is credited under the General or Police and Firefighters Plan may not be purchased unless the member transfers to this Plan.

Up to 5 additional years of Vesting Service credit may be purchased for periods of employment interrupted by military service by payment of the contributions that would have been required of the Member during such period of service, plus interest.

6. Benefit Service:

Total of Vesting Service plus any past service purchased as provided below.

Five additional years of Benefit Service credit may be purchased for prior full-time employment with the federal government, including active duty in the armed forces, or any state, county or city government (excluding the City of Boca Raton), by payment of the full actuarial cost of such service credit. If such prior service is deemed ineligible for purposes of a higher benefit rate, may be purchased under the same terms and conditions that is equivalent to

increased benefits that would be applicable if such prior service were eligible for purchase.

7. Compensation: Base wages excluding all extra forms of compensation such as longevity pay, payments for car allowance, dependent medical insurance and lump-sum payouts of accumulated leave, but including salary reductions or deferrals to any salary reduction, deferred compensation or tax-sheltered annuity program related to such base wages.
8. Average Final Compensation: Divisions 1-3 – 1/60th of the average Compensation of the 130 best pay periods of the last 260 pay periods prior to termination.
Division 4 – 1/60th of the average Compensation of the 52 best pay periods of the last 260 pay periods prior to termination.
9. Accrued Benefit: A monthly annuity benefit equal to a percentage of Average Final Compensation times Benefit Service payable in accordance with the standard form of annuity, starting at the Normal Retirement Date as provided below:
- Division 1 – 3.05%
Division 2 – 3.15%
Division 3 – 3.25%
Division 4 – 4.55% for the first 10 years and 3.35% thereafter.
- For employees who become Members after September 30, 2010, the lowest benefit multiplier in the EERP shall be equal to the greatest multiplier provided to Option C of the General Employees Pension Plan (GEPP).

Division 1 – Same percentage as greatest multiplier provided to Option C of the GEPP plus six-tenths (0.6).

Division 2 – Division 1 percentage plus one-tenth (0.10).

Division 3 – Division 2 percentage plus one-tenth (0.10)

Division 4 – Division 3 percentage plus one-tenth (0.10)

A Member's annual benefit may not exceed the lesser of 90% (80% for those who became Members after September 30, 2010) of the Member's Average Final Compensation or the maximum adjusted benefit defined in IRC Section 415(b).

Standard Form of Annuity –

Division 1 – 25% joint-and-survivor

Division 2 – 50% joint-and-survivor

Division 3 – 75% joint-and-survivor

Division 4 – 100% joint-and-survivor

10. Normal Retirement:

Eligibility Date – The earliest of age 55 and completion of 10 years of Vesting Service and age 65 and completion of 6 years of Vesting Service. Special age-65 normal retirement eligibility to transition Members who join on Effective Date.

For employees who become Members after September 30, 2010, conditions for Normal Retirement are age 65 with at least 6 years of Vesting Service, or age 58 with at least 10 years of Vesting Service.

Benefit — Accrued Benefit payable as of the Normal Retirement Date in the standard form of annuity.

11. Early Retirement:

Members prior to October 1, 2010:

Eligibility Date — Age 50 and completion of 10 years of Vesting Service. Special involuntary termination conditions apply to Division 4 Members.

Benefit — Accrued Benefit as of the Early Retirement Date payable at Normal Retirement Date or payable at the Early Retirement Date and reduced for Division 1, 2 and 3 Members by 5/12% and for Division 4 Members 1/6% for each month by which commencement of benefit precedes age 55.

Members after September 30, 2010:

Eligibility Date — For employees who become Members after September 30, 2010, conditions for Early Retirement are age 53 with 10 years or more of Vesting Service.

Benefit — Same as other except “reduced for Division 1, 2 and 3 Members by 5/12% for each month by which Benefit Commencement Date precedes age 58; and for Division 4 Members by 1/6% for each month preceding age 58.

12. Disability Benefit:

Eligibility — Total and permanent disability; no service requirement.

Benefit — 60% of Average Final Compensation as of date of disability payable starting at age 65 as the standard form of benefit, with Average Final Compensation indexed at 2% per year from disability to age 65.

13. Death Benefit before Termination:

Members prior to October 1, 2010:

Eligibility — Death while actively employed.

Benefit —

Age 55 with 6 or More Years of Service — Accrued Benefit at time of Member's death payable to beneficiary for life as follows:

Division 1 –25% of Accrued Benefit
Division 2 –50% of Accrued Benefit
Division 3 –75% of Accrued Benefit
Division 4 –100% of Accrued Benefit

6 or More Years of Service but Under Age 55

Division 1 –25% of Accrued Benefit

Division 2 –50% of Accrued Benefit

Division 3 –75% of Accrued Benefit

6 or More Years of Service but Under Age 50

Division 4 –100% of Accrued Benefit

If the Member is actively employed but has less than 6 years of Vesting Service at date of death, the beneficiary shall receive a refund of Member Contributions with interest at 5%. Special eligibility conditions apply for Members who join the Plan on the Effective Date and die with less than 6 years of service.

Members after September 30, 2010:

The above is applicable except the references to age 55 shall be age 58, and to age 50 shall be age 53.

14. Death Benefit after

Termination:

If the Member terminated employment and is not eligible to receive immediate retirement benefits at date of death, the beneficiary shall receive a refund of Member Contributions with interest at 5%.

If the Member terminated employment and is eligible to receive immediate retirement benefits but payments have not yet commenced at date of death, payments shall be made to the beneficiary as if the Member had elected to receive benefits commencing on the day before the date of death or a refund of Member Contributions with interest at 5%, if greater.

If the Member dies after payment of retirement benefits has commenced, death benefits will be subject to the terms of the optional benefit form elected.

Special involuntary termination conditions apply to Members who joined as of the Effective Date.

15. Termination Benefit:

A terminating Member with less than 6 years of Vesting Service will receive a refund of Member Contributions with interest at 5%. A terminating Member with 6 or more years of Vesting Service but less than 10 will receive the Accrued Benefit as of the termination date payable at age 65; or with 10 or more years of Vesting Service and less than age 50, payable at age 55.

Special vesting conditions apply to Members who joined on the Effective Date who terminated with less than 6 years of service, and special normal retirement conditions apply during the first 3 years of the Plan to Members who joined on the Effective Date and are involuntarily terminated under certain conditions.

16. Standard (Unreduced)
Form of Payment:

Division 1 – 25% joint-and-survivor annuity
Division 2 – 50% joint-and-survivor annuity
Division 3 – 75% joint-and-survivor annuity
Division 4 – 100% joint-and-survivor annuity

17. Optional Forms of Payment:

Life annuity; 5-years-certain-and-life;
100%/75%/50%/25% joint-and-survivor annuity;
actuarial equivalent to normal form.

18. Cost-of-Living Increase:

Eligibility — Members who began participating on the Effective Date are eligible irrespective of when termination occurs; all other Members are eligible if they terminate after becoming eligible for immediate early or normal retirement benefits.

Benefit — 2%-per-year increase for Divisions 1, 2 and 3 and 3%-per-year increase for Division 4 in current monthly benefit commencing on October 1 following 4 years after retirement (pro rata for less than 12 months since the fourth anniversary of retirement).

19. Health Supplement:

Eligibility — Members who terminate with 10 or more years of Benefit Service and are eligible for immediate early or normal retirement benefits.

Benefit — \$10 per month times Benefit Service payable to retirees under standard form of annuity, reduced 5% per year if Member had less than 25 years of service and retirement is before age 55 or age 58, as applicable. Not subject to optional forms of annuity; cost-of-living adjustments apply in the same percentage at the same time as applicable to the regular Plan benefit.

Special eligibility conditions apply to Members who joined the Plan on the Effective Date and purchased Vesting Service for at least 50% of their prior service, and reduction is 5% for Divisions 1, 2 and 3 or 2% for Division 4 Members.

20. DROP:

Eligibility — Age 55 (or age 58 for employees who become Members after September 30, 2010) with 10 or more years of Vesting Service for

Divisions 1, 2 and 3, and age 50 (or age 53 for employees who become Members after September 30, 2010) with 10 or more years of Vesting Service for Division 4 Members.

Benefit — Members may elect to retire from the Plan while still employed and accumulate monthly retirement payments in a separate account within the Plan for a period not to exceed 60 months. Separation from employment must occur within a 36-month period. DROP account is credited with fund earnings as elected by the Member.

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

ACTUARIAL ASSUMPTIONS AND ACTUARIAL COST METHOD SUMMARY

Actuarial Assumptions

1. Investment Return Rate: 7.15% per annum, compounded annually (includes underlying long-term rate of inflation of 2.75% per annum); net of investment expense.
2. Salary Increase Rate:

<u>Service</u>	<u>Rate</u>
2 and Under	6.00%
3-4	5.00%
5-6	4.00%
7+	3.25%

3. Healthy Mortality Rates:

	RP-2000 50% White Collar 50% Blue Collar- Male Scale BB	RP-2000 100% White Collar- Female Scale BB
<u>Age</u>	<u>Male</u>	<u>Female</u>
25	0.04%	0.02%
30	0.05%	0.03%
35	0.08%	0.05%
40	0.11%	0.06%
45	0.16%	0.10%
50	0.22%	0.16%
55	0.37%	0.26%
60	0.69%	0.47%

4. Disabled Mortality Rates:

RP2000 60%
 Disabled Male
 setback four years /
 40% Annuitant White
 Collar with no
 setback

RP2000 60%
 Disabled Female set
 forward two years /
 40% Annuitant White
 Collar with no
 setback

<u>Age</u>	<u>Male</u>	<u>Female</u>
25	2.26%	0.75%
30	2.26%	0.75%
35	2.26%	0.75%
40	2.26%	0.75%
45	2.26%	0.90%
50	2.38%	1.35%
55	3.03%	1.87%
60	3.67%	2.41%

5. Termination Rates:

<u>Age</u>	Male						Female					
	<u>0-1</u>	<u>1-2</u>	<u>2-3</u>	<u>3-4</u>	<u>4-5</u>	<u>5+</u>	<u>0-1</u>	<u>1-2</u>	<u>2-3</u>	<u>3-4</u>	<u>4-5</u>	<u>5+</u>
<30	40.00%	5.00%	5.00%	5.00%	10.00%	10.00%	12.50%	5.00%	5.00%	7.00%	5.00%	5.00%
30-34	40.00%	5.00%	5.00%	5.00%	8.00%	8.00%	12.50%	5.00%	5.00%	7.00%	8.00%	5.00%
35-39	40.00%	5.00%	5.00%	5.00%	8.00%	8.00%	12.50%	5.00%	5.00%	7.00%	8.00%	3.00%
40-44	40.00%	5.00%	5.00%	5.00%	5.00%	5.00%	12.50%	5.00%	5.00%	7.00%	5.00%	2.00%
45-49	40.00%	5.00%	5.00%	5.00%	5.00%	5.00%	12.50%	5.00%	5.00%	7.00%	5.00%	2.00%
50+	40.00%	5.00%	5.00%	5.00%	1.00%	1.00%	12.50%	5.00%	5.00%	7.00%	5.00%	8.00%

6. Retirement Rates:

Divisions 1, 2 and 3

<u>Age</u>	<u>0-9</u>	<u>10-19</u>	<u>20-24</u>	<u>25+</u>
<50	0%	0%	0%	0%
50-54	0%	15%	15%	15%
55-61	0%	15%	20%	20%
62-64	0%	25%	25%	25%
65-69	0%	25%	25%	25%
70+	0%	100%	100%	100%

Division 4

<u>Age</u>	<u>0-9</u>	<u>10-19</u>	<u>20-24</u>	<u>25+</u>
<50	0%	0%	0%	0%
51	0%	10%	10%	10%
52	0%	15%	15%	15%
53	0%	25%	25%	25%
54	0%	50%	35%	35%
55-61	0%	50%	50%	50%
62-64	0%	50%	50%	50%
65-69	0%	50%	50%	50%
70+	0%	100%	100%	100%

7. Disability Rates:

<u>Age</u>	<u>Rate</u>
25	0.06%
35	0.06%
45	0.16%
55	0.60%
65	1.00%

8. Actuarial Value of Assets:

Five year moving market average.

9. Plan Expenses:

Assumed to be paid outside the plan.

10. Underlying Long-term Inflation Rate:
2.75% per annum, compounded annually.

Actuarial Value of Assets

Determined by adjusting the expected value of assets as of any valuation date by a portion of the cumulative differences of the market value of assets and the expected actuarial value of assets starting prospectively from October 1, 2003. (As of October 1, 2003, expected value was set equal to market value.) Each difference is fully recognized over a period not to exceed five years. The expected actuarial value of assets as of any valuation date is determined by applying actual Plan contributions and disbursements and the assumed investment yield to the previous year's expected actuarial value of assets adjusted for any fully recognized cumulative differences. The adjustment is further modified, if necessary, by an amount sufficient to ensure that the actuarial value of assets is not less than 80% nor more than 120% of market value.

Long-Term Expected Rate of Return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These estimates are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation are summarized in the following table:

	Development of Long Term Discount Rate					
	Real Risk		Total			
	Inflation	Free Return	Risk Premium	Expected Return	Policy Allocation	Policy Return
Domestic Equity	2.75%	2%	4.5%	9.3%	52.0%	4.81%
Foreign Equity	2.75%	2%	5.5%	10.3%	18.0%	1.85%
Domestic Bonds	2.75%	2%	0.5%	5.3%	20.0%	1.05%
Intl Bonds	2.75%	2%	1.5%	6.3%	5.0%	0.31%
Treasuries	2.75%	2%	0.0%	4.8%	0.0%	0.00%
Real Estate	2.75%	2%	2.5%	7.3%	10.0%	0.73%
Cash	2.75%	0%	0.0%	2.8%	0.0%	0.00%
Total					105.00%	8.74%

Actuarial Cost Method

To determine the Plan's contribution requirements, the Individual Entry Age Actuarial Cost Method was used. Under this method, the cost of each member's projected retirement benefit is funded through a series of annual payments, determined as a level percentage of each year's earnings from age at hire to assumed exit age. This level percentage, known as normal cost, is thus computed as though the Plan had always been in effect. A yearly normal cost for each member is individually determined by multiplying each member's level percentage by the applicable yearly earnings, then adding together to obtain the normal cost amount for the Plan for that year. The accrued value of normal cost payments due prior to the valuation date is termed the

actuarial accrued liability (AAL). This amount minus the actuarial value of assets is known as the unfunded actuarial accrued liability (UAAL). The annual cost of a plan has two components: normal cost and an amortization payment, which may vary between prescribed limits, toward the UAAL.

It is intended that the UAAL bases established due to increases or decreases in liabilities attributable to changes in plan provisions and/or actuarial assumptions be amortized over 30 years from inception through monthly contributions expressed as a level percentage of each month's payroll, incorporating an assumption that future payroll will grow at the rate of .53% per year. Increases or decreases in liabilities due to experience gains will be amortized over 18 years from inception, and the remaining periods of current bases will be increased by 3 years.

The cost method uses the effective date of the Plan as the entry age for all members who joined as of the effective date. To the extent that past service is purchased, the increase in actuarial present values (APVs) is allocated entirely to the AAL and the entry age projected is unchanged. Future employee entry age will also be set at the date of Plan entry and will not change if past service is purchased. Members who transfer as active members from the general employees' plan will inherit the entry age associated with asset liability transfers to this Plan, if any.

Miscellaneous Valuation Procedures

1. Projected retirement benefits were limited to IRC Section 415 benefit limits applicable to the current plan year (for fiscal year 2019-2020, \$225,000), payable as a life annuity, beginning at or after age 62, reduced as applicable for earlier

benefit commencement with assumed increases equal to the assumed long-term rate of inflation.

2. Projected earnings were limited to IRC Section 401(a)(17) compensation limits applicable to the current plan year (for fiscal year 2019-2020, \$280,000) with assumed increases equal to the assumed long-term rate of inflation.
3. Annual covered payroll is the amount of total pensionable earnings paid during the prior fiscal year for employees who are currently active members in the Plan (that does not include employees still working but retired under the DROP provisions). Valuation payroll is payroll expected to be paid during the current fiscal year, determined using prior-year covered payroll and the salary increase assumption by individual member. Annual valuation payroll for the 2019-20 fiscal year was determined using expected valuation payroll for 2018-19 projected for one year using the Plan's payroll growth assumption.
4. The effect of member contributions on the funding requirements has been recognized through subtracting the expected member contributions from the total Plan contribution requirement to determine the net City portion.
5. Member information is current as of October 1, 2019.
6. No liability was recognized in the valuation for nonvested employees who have terminated, whether or not a break in service has occurred as of the valuation date, since any potential liability for this group is not significant. Note that upon

rehire, any applicable prior employment service credits will be fully recognized in the valuation.

7. Although early retirement benefits are payable on a more favorable basis than actuarial equivalent values, it has been assumed that early retirement elections are infrequent and any additional APV would be small. Therefore no APV was recognized for subsidized early retirement in the valuation.
8. The contribution requirement includes an amount to recognize the Plan's anticipated administrative expenses based on actual prior experience (see assumptions). This amount is reflected in the required normal cost.
9. It was assumed that 100% of future deaths and disablements will not be service-connected.

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

TRUST FUND BALANCE AS OF 10/1/19

	Market Value
Cash and Equivalents	\$ 241,152
Diversified Small Cap Portfolio	6,655,780
Diversified Value Portfolio	19,243,885
International Blend Portfolio	8,536,761
Broad Market High Quality Bond Portfolio	4,630,108
Core Plus Fixed Income	4,533,647
Core Real Estate	4,388,956
Russell 1000 Index Portfolio	-
Reserve - DROP	(1,631,962)
Prepaid City Contribution	-
Receivable from General Plan	-
Total*	<u>\$ 46,598,327</u>

Asset Percentage Weightings

Cash	0.50%
Equity	71.40%
Bond	19.00%
Real Estate	9.10%
Alternative Investments	<u>0.00%</u>
Total	100.00%

* Excludes DROP account balances.

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

ANALYSIS OF CHANGES IN MARKET VALUE OF ASSETS

Market Value of Assets as of 10/1/18	\$ 44,116,424
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Add:

City Contributions	1,954,554
Member Contributions	634,450
Rollover Contributions	454,958
Prior Year Reserve - DROP	754,202
Realized Gains\Losses)*	-
Unrealized Gains\Losses)*	-
Investment Earnings	2,597,496
Net Appreciation (Depreciation)	<u>(0)</u>
Total Additions	<u>\$ 6,395,660</u>

Deduct:

Benefit Payments	2,039,299
DROP Payments	-
Refund of Contributions	120,432
Reserve - DROP	1,631,962
Administrative Expenses	75,266
Investment Expenses	<u>46,798</u>
Total Deductions	<u>\$ 3,913,757</u>

Market Value of Assets as of 10/1/19**	46,598,327
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(includes \$5,794,606 in accumulated member contributions)

* The FMTPF Fund is a Pooled Trust and the ability to distinguish this is not available.

** Excludes DROP account balances.

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

ANALYSIS OF CHANGES IN ACTUARIAL VALUE OF ASSETS

Actuarial Value of Assets as of 10/1/18	\$ 41,983,569
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Add:

City Contributions	1,954,554
Member Contributions	634,450
Rollover Contributions	454,958
Prior Year Reserve - DROP	754,202
Realized Gains\Losses)*	-
Unrealized Gains\Losses)*	-
Investment Earnings	2,597,496
Net Appreciation (Depreciation)	759,341
Total Additions	<hr/> \$ 7,155,001

Deduct:

Benefit Payments	2,039,299
DROP Payments	-
Refund of Contributions	120,432
Reserve - DROP	1,631,962
Administrative Expenses	75,266
Investment Expenses	46,798
Total Deductions	<hr/> \$ 3,913,757

Actuarial Value of Assets as of 10/1/19**	45,224,813
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(includes \$5,794,606 in accumulated member contributions)

* The FMTPF Fund is a Pooled Trust and the ability to distinguish this is not available.

** Excludes DROP account balances.

CITY OF BOCA RATON
 EXECUTIVE EMPLOYEES' RETIREMENT PLAN

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS AS OF
 10/01/19**

1. Market Value of Assets as of 10/1/19*	\$ 46,598,327
2. Expected Value of Assets as of 10/1/19	45,618,843
3. Current Year's Difference	(718,076)
4. 20% of Current Difference [(3)x0.2]	(143,615)
5. Previous Year's Cumulative Adjustments*	(250,415)
6. Preliminary Actuarial Value of Assets [(2)+(4)+(5)]	45,224,813
7. 80% of Market Value [(1)x0.8]	37,278,662
8. 120% of Market Value [(1)x1.2]	55,917,992
9. Actuarial Value of Assets within 20% of Market Value Corridor at 10/1/19	45,224,813

*Excludes DROP account balances.

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS AS OF 10/1/2019

Expected Value	2019
Previous Year's:	
1. Expected Value	\$ 42,646,217
2. Previous Years' Fully Recognized Difference	(112,599)
3. Interest on (1) and (2)	3,083,688
4. Contributions with Interest	3,225,158
5. Benefit Payments with Interest	3,145,674
6. Administrative Expenses with Interest	77,947
7. Expected Value [(1)+(2)+(3)+(4)-(5)-(6)]	\$ 45,618,843
	45,618,843
Cumulative Differences	
1. Market Value (MV)	46,598,327
2. Expected Value (EV)	45,618,843
3. Cumulative Difference [(1)-(2)]	\$ 979,484
4. Original Differences by Year	

	Year	Initial Amount	Interest-Adjusted Amount
(a)	2012	2,342,471	
(b)	2013	1,215,648	
(c)	2014	(84,708)	
(d)	2015	(2,269,739)	\$ (3,010,068)
(e)	2016	430,924	531,610
(f)	2017	2,886,129	3,319,788
(g)	2018	798,349	856,230
(h)	2019	(718,076)	(718,076)

Actuarial Value

1. MV at 10/19	46,598,327
2. EV at 10/19	45,618,843
3. Current Year's Difference	(718,076)
4. 20% of Current Difference [(3)x0.2]	(143,615)
5. Previous Years' Cumulative Adjustments	(250,415) *
6. Preliminary AV [(2)+(4)+(5)]	45,224,813
7. 80% of MV [(1)x0.8]	37,278,662
8. 120% of MV [(1)x1.2]	55,917,992
9. AV within 20% MV Corridor at 10/19	45,224,813

* From "Cumulative Differences" [(0.4 x (4g)) + (0.6 x (4f)) + (0.8 x (4e)) + (1.0 x (4d))]

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

RECONCILIATION OF PLAN MEMBERS 10/01/18 - 10/01/19

	Actives	Retirees, Beneficiaries	DROP Retirees	Disabled Retirees	Vested Terminateds	Pending Refunds
10/01/18 Members	49	28	7	-	11	2
Increase (Decrease) Due to:						
Retirements	(1)	1	-	-	-	-
DROP Retirement	(3)	-	3	-	-	-
Nonvested Terminations	(1)	-	-	-	-	1
Vested Terminations	(1)	-	-	-	1	-
New Entrants	4	-	-	-	-	-
Deaths	-	-	-	-	-	-
Rehires	-	-	-	-	-	-
Disableds	-	-	-	-	-	-
From Gen Plan	1	-	-	-	-	-
Lump-Sum Payment	-	-	-	-	-	(3)
Transfers	-	-	-	-	-	-
10/01/19 Members	48	29	10	-	12	-

ACTIVE MEMBERS 10/01/19

	Number
Vested Active	27
Non-Vested Active	21
Total	48

INACTIVE MEMBERS 10/01/19

	Number	Annual Benefit Amount
Retirees and Beneficiaries		
Currently Receiving Payments	29	\$ 2,135,234
DROP Retirees	10	1,074,837
Disableds Receiving Payments	-	-
Vested Terminated Members		
Entitled to Future Benefits	12	434,763
Pending Refunds	-	*
Total	51	\$ 3,644,834

* Reserve equals \$.

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

RECONCILIATION OF DROP ACCOUNT

Value as of 9/30/18	\$ 754,202.02
Payments Credited to Account	823,914.13
Investment Earnings Credited*	53,846.00
Withdrawals	<hr/>
Value as of 9/30/19	\$ 1,631,962.15

*Includes interest adjustments.

CITY OF BOCA RATON
EXECUTIVE EMPLOYEES' RETIREMENT PLAN

**DISTRIBUTION OF ACTIVE PARTICIPANTS UNDER NORMAL RETIREMENT AGE
BY ATTAINED AGE AND COMPLETED YEARS OF SERVICE AS OF 10/01/19**

Attained Age	Completed Years of Service														Total		
	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		
	#	Avg Comp	#	Avg Comp	#	Avg Comp	#	Avg Comp	#	Avg Comp	#	Avg Comp	#	Avg Comp	#	Avg Comp	Total
Under 25	-	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	\$ - -	
25 to 29	-	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	
30 to 34	1	96,070	4	95,187	1	78,740	-	-	-	-	-	-	-	-	-	6 92,593	
35 to 39	2	74,874	1	93,762	2	106,849	-	-	-	-	-	-	-	-	-	5 91,441	
40 to 44	-	- - -	- - -	- 1	147,411	1	94,688	-	-	-	-	-	-	-	-	2 121,050	
45 to 49	1	75,164	4	133,714	1	120,524	-	-	-	2	93,101	2	112,270	-	-	10 114,129	
50 to 54	-	- - 3	3	98,343	-	-	3	131,610	3	126,870	1	131,404	-	-	-	10 120,187	
55 to 59	-	- - 3	3	116,603	3	122,667	4	133,130	2	104,629	-	-	1	94,959	-	13 119,580	
60 to 64	-	- - -	- - -	- - -	- - -	- - -	- 1	196,305	-	-	-	-	-	-	-	1 196,305	
65 to 69	-	- - -	- - -	- - -	- - -	- - -	- 1	200,207	-	-	-	-	-	-	-	1 200,207	
70 & up	-	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	
Total	4	80,246	15	110,280	8	116,047	8	127,755	7	140,911	3	105,868	3	106,500	-	48 115,606	