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CITY OF POMPANO BEACH
GENERAL EMPLOYEES' RETIREMENT SYSTEM

Actuarial Valuation Report
as of
October 1, 2019



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January 13, 2020

Board of Trustees

City of Pompano Beach General Employees' Retirement System

555 South Andrews Avenue, Suite 106

Pompano Beach, Florida 33069

Dear Members of the Board:

This report presents the results of the actuarial valuation of the City of Pompano Beach General Employees' Retirement System ("Plan") for the plan year. The purpose of this report is to provide a summary of the funded status of the plan as of October 1, 2019 and to determine the minimum required contribution amount for the 2020/2021 fiscal year. In addition, this report provides a record of any plan amendments or other plan changes affecting the financial status of the fund. Our calculations were prepared based on member data and financial information provided by the Retirement System.

Summary of Valuation Results

The Retirement System receives contributions from the City of Pompano Beach, Broward Sheriff's Office (BSO) and from active members. Members hired prior to June 8, 2011 contribute 10.0% of compensation, while members hired on or after June 8, 2011 contribute 7.0% of compensation. In addition, the City contributes the required member contributions on behalf of the elected/appointed members who participate in the System. These contributions are considered member contributions and are not reflected in the required minimum City contribution. In determining the City's and the County's contribution requirement we have included two alternatives. The first includes interest to reflect that the City will make quarterly contributions throughout the fiscal year. The second reflects that the City will contribute a single lump sum payment on December 31, 2020. Both contribution alternatives anticipate that the BSO will make bi-weekly contributions throughout the fiscal year.

Quarterly Contributions

The total required annual contribution for the 2020/2021 fiscal year from all sources payable based on a quarterly payment schedule beginning October 1, 2020 is \$14,046,515. The amount of the City/BSO contributions varies from year to year. Member contributions are equal to 8.68% employees' projected payroll. After taking into account expected member contributions of \$3,074,152, the total required contribution from the City/BSO is \$10,972,363 or 30.98% of projected payroll. Of this amount the City is expected to contribute \$10,793,265 and BSO is expected to contribute \$179,098. In comparison, the required City/BSO contribution for the 2019/2020 fiscal year was \$10,229,918, or 32.04% of projected payroll.

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Single Lump Sum Payment

The total required annual contribution for the 2020/2021 fiscal year from all sources payable as a single lump sum payment on December 31, 2020 is \$13,922,177. The amount of the City/BSO contributions varies from year to year. Member contributions are equal to 8.68% of employees' projected payroll. After taking into account expected member contributions of \$3,074,152, the total required contribution from the City/BSO is \$10,848,025 or 30.63% of projected payroll. Of this amount the City is expected to contribute \$10,669,376 and the BSO is expected to contribute \$178,649.

For members hired before June 8, 2011, the plan provides a 2% COLA each year and an additional 1% COLA if certain conditions are met. They are: if there is a cumulative net experience gain for the year, and the City's cost for the year is \$0 after payment of the additional COLA. In addition, the present value of the additional COLA cannot be more than the cumulative gains that occurred since inception of the COLA. Since there was a cumulative net experience loss for the year and a required City contribution is due, no variable COLA will be paid to these members this year.

For members hired on or after June 8, 2011, a member is eligible for a COLA on their fifth anniversary of retirement. No increase is given for eligible retirees under 55 on October 1st. A 1% increase is given for eligible retirees between 55 and 64. A 2% increase is given for eligible retirees 65 or older. A variable increase (of not more than one percent) will be granted when the plan is sufficiently funded. Since there is no cumulative actuarial gain, no variable increase will be paid to these members this year.

Actuarial gains and losses result when the actual experience of the plan (such as asset return, pay increases, turnover, deaths, etc.) is different from that expected by the actuarial assumptions. The plan's unfunded liability was projected to be \$82,967,310 as of October 1, 2019, taking into account contributions from the City and the County of \$9,330,496. The actual unfunded liability is \$85,731,019. The increase of \$2,763,709 is due to an experience loss for the 2018/2019 plan year and reducing the assumed investment return from 7.65% to 7.55%. This assumption change accounted for \$2,995,400 of the increase. A detailed analysis of the gain and loss is presented in Table II. The total increase in City/County contribution to amortize the unfunded liability is \$307,923 per year. A summary of the amortization payments is presented in Table Va. The unfunded liability is amortized over a level percentage of payroll assuming a payroll growth assumption of 2.40% for amortization bases established prior to October 1, 2017. Amortization bases established on or after October 1, 2017 are amortized on a level dollar basis.

The valuation is based on a series of actuarial assumptions, including an interest rate of 7.55% per year and an annual payroll growth assumption of 2.40%. Total payroll for the ten year period ending with the valuation date averaged 3.50% which is greater than the current payroll growth assumption of 2.40%. Table XI outlines the mortality assumptions used in the report.



A summary of the results of the valuation and the contribution requirements is presented in Table I. The disclosure information required by Chapter 112, Florida Statutes, is presented in Table V. Tables VII and X provide information about the fund's assets and historical contributions. Table VIIb provides an asset reconciliation between October 1, 2018 and October 1, 2019. Table VI provides a breakdown of the fund assets by investment type and the calculation of the actuarial value of assets. Tables VII, VIIa, VIII provide a historical record of the growth, expenses, revenues, annual returns and contributions of the fund. Tables IX and IXa through IXd provide a variety of useful information concerning the participant population. The assumptions used in the valuation are outlined in Table XII. Provisions of the plan are set forth in Table XIII.

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 which may require a material increase in plan costs or required contribution rates have been taken into account in the valuation.

Future actuarial results may differ significantly from the current results 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; 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. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

Respectfully submitted,

A handwritten signature in black ink that reads 'Todd B. Green' followed by a horizontal line.

Todd B. Green, ASA, FCA, MAAA
President

A handwritten signature in black ink that reads 'Micki R. Taylor'.

Micki R. Taylor, ASA, EA, FCA, MAAA
Senior Actuary
Enrolled Actuary No. 17-5975

TBG:jw

**SUMMARY OF VALUATION RESULTS****TABLE I**

	As of October 1, 2018	As of October 1, 2019
1. Number of Participants		
a. Active Participants		
i. City and BSO Employees	462	498
ii. Elected and Appointed Officials	9	8
iii. Senior Management	17	17
iv. Sub-total	<u>488</u>	<u>523</u>
b. Deferred Vested Participants	<u>28</u>	<u>28</u>
c. Retired Participants:		
i. Participants in DROP	51	44
ii. Non-disabled	330	340
iii. Disabled	17	14
iv. Beneficiaries	43	45
v. Sub-total	<u>441</u>	<u>443</u>
d. Total Participants	<u>957</u>	<u>994</u>
2. Total Annual Payroll		
a. Elected Officers	\$879,419	\$889,040
b. Non-elected members (Plan 1)	\$18,575,666	\$18,506,044
c. Non-elected members (Plan 2)	\$11,723,374	\$15,191,345
d. Total	<u>\$31,178,459</u>	<u>\$34,586,429</u>
3. Total Projected Payroll	<u>\$31,926,742</u>	<u>\$35,416,503</u>
4. Total Retired Member Benefits	<u>\$14,241,123</u>	<u>\$13,729,549</u>
5. Derivation of Unfunded Accrued Liability (UAL)		
a. Present Value of Future Benefits	\$306,181,217	\$321,001,264
b. Present Value of Future Normal Cost	(\$37,815,135)	(\$41,910,547)
<i>City Portion</i>	(\$19,058,835)	(\$21,648,137)
<i>Member Portion</i>	(\$18,756,300)	(\$20,262,410)
c. Actuarial Accrued Liability (AAL)	\$268,366,082	\$279,090,717
d. Actuarial Value of Assets	(\$185,134,138)	(\$193,359,698)
e. Unfunded Accrued Liability (c. + d.)	<u>\$83,231,944</u>	<u>\$85,731,019</u>



SUMMARY OF VALUATION RESULTS

TABLE I

	Fiscal Year 2020	Fiscal Year 2021
6. Annual Cost (Payable Quarterly 1st Payment 10/1)		
a. Normal Cost	\$5,162,674	\$5,712,224
b. Payment to Amortize Unfunded Liability	\$6,135,012	\$6,442,935
c. Administrative Expenses	\$507,602	\$556,263
d. Interest Adjustment	\$1,256,532	\$1,335,093
e. Total (a. + b.+ c.+ d.)	\$13,061,820	\$14,046,515
f. Expected Member Contributions	\$2,831,902	\$3,074,152
g. Expected City/County Contribution	\$10,229,918	\$10,972,363
h. Total (f. + g.)	\$13,061,820	\$14,046,515
7. Annual Cost (Payable as a Single Lump Sum on 12/31)		
a. Normal Cost	\$5,162,674	\$5,712,224
b. Payment to Amortize Unfunded Liability	\$6,135,012	\$6,442,935
c. Administrative Expenses	\$507,602	\$556,263
d. Interest Adjustment	\$1,139,476	\$1,210,755
e. Total (a. + b.+ c.+ d.)	\$12,944,764	\$13,922,177
f. Expected Member Contributions	\$2,831,902	\$3,074,152
g. Expected City/County Contribution	\$10,112,862	\$10,848,025
h. Total (f. + g.)	\$12,944,764	\$13,922,177
8. Annual Cost (as a % of projected payroll)		
a. Quarterly Basis		
i. Total Required Contribution	40.91%	39.66%
ii. Expected Member Contributions *	8.87%	8.68%
iii. Expected City/County Contribution	32.04%	30.98%
b. Single Lump Sum Basis		
i. Total Required Contribution	40.55%	39.31%
ii. Expected Member Contributions *	8.87%	8.68%
iii. Expected City/County Contribution	31.68%	30.63%

* Non-Elected members in Plan 1 contribute 10.0% of payroll, and 7.0% of payroll if in Plan 2. The City contributes 10.0% of payroll on behalf of elected/appointed members.

**GAIN AND LOSS ANALYSIS****TABLE II****A. UNFUNDED ACCRUED ACTUARIAL LIABILITY (GAIN) / LOSS ANALYSIS**

1. Actual Unfunded Accrued Actuarial Liability as of October 1, 2018	\$83,231,944
2. Plan Sponsor Normal Cost for this Plan Year (including expenses)	\$2,838,374
3. Interest on items 1 and 2 [(1+2) x 7.65%]	\$6,584,379
4. Plan Sponsor Contribution for this Plan Year:	(\$9,330,496)
5. Interest on item 4 [4 x 7.65% x .5]	(\$356,891)
6. Changes due to:	
a. Assumption changes	\$2,995,400
b. Plan amendments	\$0
c. Funding Method	\$0
d. Actuarial (Gain) / Loss	(\$231,691)
7. Actual Unfunded Accrued Liability as of October 1, 2019: (1. + 2. + 3. + 4. + 5. + 6.)	<u>\$85,731,019</u>
8. Items Affecting Calculation of Unfunded Accrued Actuarial Liability:	
a. Plan provisions reflected in the unfunded accrued liability (see Table XIII)	
b. Plan amendments reflected in item 4.c. above (see Table XIIIa)	
c. Actuarial assumptions and methods used to determine actuarial accrued liability (see Table XII)	

B. ASSET (GAIN) / LOSS ANALYSIS

1. Actuarial Value of Assets as of October 1, 2018	\$185,134,138
2. Interest on item [1a. x 7.65%]	\$14,162,762
3. Contributions for the 2018/2019 Plan Year	\$12,211,294
4. Interest on item [1c. x 7.65% x .5]	\$467,082
5. Benefit Payments for 2018/2019 Plan Year (Including Expenses)	(\$16,942,183)
6. Interest on item [1e. x 7.65% x .5]	(\$648,038)
7. Expected Actuarial Value of Assets as of October 1, 2019	<u>\$194,385,054</u>
8. Actuarial Value of Assets as of October 1, 2019	<u>\$193,359,698</u>
9. (Gain) / Loss	<u>\$1,025,356</u>



GAIN AND LOSS ANALYSIS

TABLE II

UNFUNDED ACCRUED ACTUARIAL LIABILITY CONTRIBUTION CHANGE

1. Unfunded Accrued Liability Contribution as of October 1, 2018:		\$6,135,012
2. Net Actuarial (Gains)/Losses During the 2018/2019 Plan Year:		
a. Due to Salary	(\$9,536)	
b. Due to Investment Performance	\$81,829	
c. Due to Turnover/Mortality	(\$143,038)	
d. Due to New Retirements	\$23,137	
e. Due to Difference and Timing in Contributions	\$70,473	
f. Due to Data/Service Adjustments/Benefit Payments	(\$80,619)	
g. Due to New Members	\$37,067	
h. Total		(\$20,687)
3. Change in Unfunded Accrued Liability Contribution During the 2018/2019 Plan Year:		
a. Assumption changes	\$188,572	
b. Method changes	\$0	
c. Plan changes	\$0	
d. Total change		\$188,572
4. Other Effects		\$140,038
5. Unfunded Accrued Liability Contribution as of October 1, 2019		\$6,442,935
6. Comments on Change in Unfunded Accrued Liability Contribution:		

Salary/Service: Actual average salary increase of 5.8% compared to expected increases of 5.7%.

Investment Performance: 7.09% actual vs. 7.65% expected return on the actuarial value of assets.

Turnover: Net effect on the valuation liabilities of actual deaths, terminations of employment and disabilities different from what was anticipated in the aggregate by the assumptions related to those events.

New retirements: Net effect of differences in expected vs. actual numbers of, and benefits for, new retirements and refund of employee contributions.

Due to Differences and Timing of Contributions: Due to the one year lag of when the required contribution is determined and when it is deposited into the fund.

Data/Service Adjustments: Effect of service adjustments for service purchases.

Assumption Changes: Assumed investment return reduced from 7.65% to 7.55%.

Method Changes: None.

Plan Changes: None.

Other Effects: Assumed growth in the unfunded actuarial accrued liability contribution.



ADDITIONAL DISCLOSURES

TABLE III

A. Schedule of Funding Progress

(\$'s in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (1)	Actuarial Accrued Liability (AAL) (2)	Unfunded AAL (UAAL) (2) - (1)	Funded Ratio (1)/(2)	Covered Payroll (3)	UAAL as % of Covered Payroll [(2) - (1)]/(3)
10/1/2011	\$125,170	\$179,688	\$54,518	69.7%	\$26,238	207.8%
10/1/2012	\$123,425	\$185,014	\$61,589	66.7%	\$25,833	238.4%
10/1/2013	\$132,248	\$191,554	\$59,306	69.0%	\$25,923	228.8%
10/1/2014	\$144,640	\$200,747	\$56,107	72.1%	\$26,048	215.4%
10/1/2015	\$153,292	\$209,453	\$56,162	73.2%	\$27,016	207.9%
10/1/2016	\$163,312	\$231,707	\$68,395	70.5%	\$27,957	244.6%
10/1/2017	\$173,854	\$249,422	\$75,568	69.7%	\$29,507	256.1%
10/1/2018	\$185,134	\$268,366	\$83,232	69.0%	\$31,178	267.0%
10/1/2019	\$193,360	\$279,091	\$85,731	69.3%	\$34,586	247.9%

Additional Information

Valuation date :	October 1, 2018	October 1, 2019
Actuarial cost method:	Entry Age Normal	Entry Age Normal
Amortization method:	Bases prior to 2017 Level Percent Closed	Bases prior to 2017 Level Percent Closed
	Bases on or after 2017 Level Dollar Closed	Bases on or after 2017 Level Dollar Closed
Remaining amortization period:	1 to 30 years	1 to 30 years
Asset valuation method:	5 - Year Smoothed Market	5 - Year Smoothed Market
Actuarial assumptions:		
Investment rate of return	7.65%	7.55%
Projected salary increases	4.25 to 7.50%	4.25 to 7.50%
Includes inflation at	3.50%	3.50%
Cost of living adjustments	2.00%	2.00%



PRESENT VALUE OF ACCRUED BENEFITS

TABLE IV

Shown below is the development of the Total Present Value of Accrued Benefit for the Plan. The calculations were performed using the Plan’s discount rate of 7.55%.

1. Actuarial Present Value of Accrued Benefits

	<u>As of October 1, 2018</u>	<u>As of October 1, 2019</u>
a. Vested Accrued Benefits:		
i. Inactive members and beneficiaries	\$173,361,527	\$176,321,776
ii. Active members	<u>\$67,905,039</u>	<u>\$73,175,097</u>
iii. Sub-total	\$241,266,566	\$249,496,873
b. Non-vested Accrued Benefits	<u>\$293,956</u>	<u>\$1,823,343</u>
c. Total Benefits	\$241,560,522	\$251,320,216
d. Market Value of Assets	\$191,219,657	\$191,862,824
c. Percentage Funded	79.2%	76.3%

2. Statement of Changes in Total Actuarial Present Value of All Accrued Benefits

a. Actuarial Present Value as of October 1, 2018:	\$241,560,522
b. Increase (Decrease) During 2018/2019 Plan Year Attributable to:	
i. Interest	\$17,853,259
ii. Benefits accumulated/experience	\$5,646,128
iii. Benefits paid	(\$16,369,186)
iv. Plan amendments	\$0
v. Changes in actuarial assumptions or methods	<u>\$2,629,493</u>
vi. Net increase (decrease)	\$9,759,694
c. Actuarial Present Value as of October 1, 2019:	\$251,320,216

3. Items Affecting Calculation of Actuarial Present Value of Accrued Benefits

- a. Plan provisions reflected in the accrued benefits (see Table XIII)
- b. Plan amendments reflected in item 2.b.iv. above
- c. Actuarial assumptions and methods used to determine present values (see Table XII)
- d. Changes in actuarial assumptions and methods reflected in item 2.b.v. above



INFORMATION REQUIRED BY FLORIDA STATUTE (CHAP. 112)

TABLE V

	Actuarial valuation prepared as of:		
	October 1, 2018	Prior to Assumption Changes October 1, 2019	October 1, 2019
1. Participant Data:			
a. Active members:			
i. Number	488	523	523
ii. Total annual payroll	\$31,178,459	\$34,586,429	\$34,586,429
iii. Projected annual payroll	\$31,926,742	\$35,416,503	\$35,416,503
b. Retirees and beneficiaries:			
i. Number	373	385	385
ii. Total annualized benefit	\$11,813,789	\$12,409,178	\$12,409,178
c. Disabled members receiving benefits:			
i. Number	17	14	14
ii. Total annualized benefit	\$435,062	\$369,963	\$369,963
d. Members in DROP:			
i. Number	51	44	44
ii. Total annualized benefit	\$1,992,273	\$1,783,906	\$1,783,906
e. Terminated vested members:			
i. Number	28	28	28
ii. Total annualized benefit	\$510,741	\$513,900	\$513,900
2. Assets:			
a. Actuarial value of assets	\$185,134,138	\$193,359,698	\$193,359,698
b. Market value of assets	\$191,219,657	\$191,862,824	\$191,862,824
3. Liabilities:			
a. Present value of all future expected benefit payments:			
i. Active members:			
Retirement benefits	\$123,629,963	\$132,427,450	\$134,816,795
Vesting benefits	\$3,242,855	\$3,307,141	\$3,394,700
Disability benefits	\$3,575,818	\$3,792,826	\$3,848,598
Death benefits	\$1,834,360	\$1,902,891	\$1,923,855
Return of member contributions	\$536,696	\$694,044	\$695,538
Sub-total	\$132,819,692	\$142,124,352	\$144,679,486
ii. Terminated vested members	\$4,988,170	\$4,890,008	\$4,967,124
iii. Retired members and beneficiaries:			
Retirees, members in DROP, and beneficiaries	\$163,995,571	\$166,212,252	\$167,647,740
Disabled members	\$4,377,786	\$3,677,022	\$3,706,912
Sub-total	\$168,373,357	\$169,889,274	\$171,354,652
iv. Total present value of all future expected ben. pmts.	\$306,181,219	\$316,903,634	\$321,001,262



	Actuarial valuation prepared as of:		
	October 1, 2018	Prior to Assumption Changes October 1, 2019	October 1, 2019
b. Liabilities due and unpaid	\$0	\$0	\$0
c. Active actuarial accrued liability	\$95,004,557	\$101,316,036	\$102,768,939
d. Inactive actuarial accrued liability	\$173,361,525	\$174,779,281	\$176,321,778
e. Total actuarial accrued liability	\$268,366,082	\$276,095,317	\$279,090,717
f. Unfunded actuarial accrued liability (please reference Table Va for details concerning the unfunded liability bases and amortization periods)	\$83,231,944	\$82,735,619	\$85,731,019
4. Actuarial Present Value of Accrued Benefits: (please reference Table IV for details concerning the present value of accrued benefits)	\$241,560,522	\$248,690,723	\$251,320,216
5. Pension Cost (as a % of annual payroll):			
a. Normal cost plus projected administrative expenses	17.76%	17.37%	17.70%
Dollar amount	\$5,670,276	\$6,152,254	\$6,268,487
b. Payment to amortize unfunded liability	19.22%	17.66%	18.19%
Dollar amount	\$6,135,012	\$6,254,363	\$6,442,935
c. Interest adjustment	3.93%	3.73%	3.77%
Dollar amount	\$1,256,532	\$1,320,537	\$1,335,093
d. Amount to be contributed by members	8.87%	8.68%	8.68%
Dollar amount	\$2,831,902	\$3,074,152	\$3,074,152
e. City Minimum Contribution	32.04%	30.08%	30.98%
Dollar amount	\$10,229,918	\$10,653,002	\$10,972,363



INFORMATION REQUIRED BY FLORIDA STATUTE (CHAP. 112)

TABLE V

	<u>Fiscal Year 2017/2018</u>	<u>Fiscal Year 2018/2019</u>	<u>Fiscal Year 2018/2019</u>
6. Past Contributions:			
a. Required City & County contribution	\$8,301,969	\$9,330,496	\$9,330,496
b. Actual contribution made by:			
i. City	\$7,953,196	\$9,079,297	\$9,079,297
ii. County	\$348,773	\$251,199	\$251,199
iii. Members	\$2,663,296	\$2,880,798	\$2,880,798
		Actuarial valuation prepared as of:	
		Prior to Assumption Changes	
	<u>October 1, 2018</u>	<u>October 1, 2019</u>	<u>October 1, 2019</u>
7. Net actuarial (gain) / loss:	611,359	(231,691)	(231,691)
8. Other disclosures:			
a. Present value of active members':			
i. Future salaries:			
at attained age	\$219,746,237	\$242,521,864	\$243,962,771
at entry age	N/A	N/A	N/A
ii. Future contributions:			
at attained age	\$18,756,300	\$18,497,101	\$20,262,410
at entry age	N/A	N/A	N/A
b. Present value of future normal contributions from City	\$19,058,835	\$22,311,216	\$21,648,137
c. Present value of future expected benefit payments for active members at entry age	N/A	N/A	N/A
d. Amount of active members' accumulated contributions	\$27,245,015	\$28,958,713	\$28,958,713



UNFUNDED LIABILITY BASES

TABLE Va

Description	Original Amount	Outstanding Balance as of October 1, 2018	BOY	Outstanding Balance as of October 1, 2019	BOY	Years Remaining October 1, 2019
			2018/2019 Amortization Payment		2019/2020 Amortization Payment	
1989 Experience (Gain)/Loss	(\$180,749)	(\$20,800)	(\$20,800)	\$0	\$0	0 years
1990 Experience (Gain)/Loss	(\$376,257)	(\$86,792)	(\$44,481)	(\$45,548)	(\$45,548)	1 years
1991 Experience (Gain)/Loss	\$180,600	\$62,107	\$21,746	\$43,449	\$22,257	2 years
1992 Experience (Gain)/Loss	(\$248,979)	(\$111,319)	(\$29,950)	(\$87,594)	(\$30,642)	3 years
1993 Experience (Gain)/Loss	(\$304,735)	(\$166,330)	(\$36,673)	(\$139,576)	(\$37,503)	4 years
1994 Experience (Gain)/Loss	\$290,132	\$189,643	\$35,685	\$165,736	\$36,477	5 years
1995 Experience (Gain)/Loss	(\$1,175,801)	(\$852,100)	(\$140,723)	(\$765,797)	(\$143,785)	6 years
1996 Experience (Gain)/Loss	(\$1,384,333)	(\$1,134,111)	(\$167,772)	(\$1,040,264)	(\$171,351)	7 years
1997 Experience (Gain)/Loss	(\$4,825,881)	(\$4,744,472)	(\$638,541)	(\$4,420,035)	(\$651,900)	8 years
1998 Experience (Gain)/Loss	(\$3,450,637)	(\$3,303,957)	(\$409,523)	(\$3,115,858)	(\$417,924)	9 years
1999 Experience (Gain)/Loss	(\$4,863,161)	(\$4,652,675)	(\$536,372)	(\$4,431,200)	(\$547,159)	10 years
2000 Experience (Gain)/Loss	(\$1,480,206)	(\$1,419,381)	(\$153,425)	(\$1,362,802)	(\$156,450)	11 years
2001 Experience (Gain)/Loss	\$7,815,513	\$7,715,235	\$787,258	\$7,457,967	\$802,480	12 years
2002 Experience (Gain)/Loss	\$9,987,004	\$10,091,770	\$977,678	\$9,811,320	\$996,212	13 years
2003 Experience (Gain)/Loss	\$4,483,179	\$4,610,333	\$426,142	\$4,504,282	\$434,063	14 years
2004 Experience (Gain)/Loss	\$4,956,483	\$5,176,040	\$458,415	\$5,078,523	\$466,771	15 years
2005 Experience (Gain)/Loss	\$6,499,426	\$6,866,920	\$584,892	\$6,762,603	\$595,345	16 years
2006 Experience (Gain)/Loss	(\$3,577,856)	(\$3,801,277)	(\$312,401)	(\$3,755,775)	(\$317,876)	17 years
2007 Experience (Gain)/Loss	\$343,924	\$365,863	\$29,096	\$362,530	\$29,596	18 years
2008 Experience (Gain)/Loss	\$2,246,447	\$2,384,913	\$184,003	\$2,369,280	\$187,104	19 years
2009 Experience (Gain)/Loss	\$14,709,552	\$15,547,923	\$1,166,460	\$15,481,645	\$1,185,741	20 years
2010 Experience (Gain)/Loss	\$1,517,167	\$1,593,248	\$116,473	\$1,589,748	\$118,361	21 years
2011 Experience (Gain)/Loss	\$10,387,585	\$10,854,555	\$774,663	\$10,851,004	\$786,980	22 years
2012 Experience (Gain)/Loss	\$6,483,132	\$6,758,609	\$471,686	\$6,767,873	\$479,043	23 years
2013 Experience (Gain)/Loss	(\$3,009,142)	(\$3,124,857)	(\$213,595)	(\$3,133,974)	(\$216,863)	24 years
2014 Experience (Gain)/Loss	(\$3,745,256)	(\$3,868,857)	(\$259,370)	(\$3,885,613)	(\$263,264)	25 years
2015 Experience (Gain)/Loss	(\$407,300)	(\$418,004)	(\$27,520)	(\$420,356)	(\$27,926)	26 years
2016 Experience (Gain)/Loss	(\$3,814,042)	(\$3,884,291)	(\$251,441)	(\$3,910,763)	(\$255,074)	27 years
2017 Experience (Gain)/Loss	\$4,344,887	\$4,305,824	\$346,894	\$4,261,788	\$343,996	28 years
2018 Experience (Gain)/Loss	\$851,524	\$851,524	\$67,956	\$843,511	\$67,377	29 years
2019 Experience (Gain)/Loss	(\$259,231)			(\$259,231)	(\$20,508)	30 years



UNFUNDED LIABILITY BASES

TABLE Va

Description	Original Amount	Outstanding Balance as of October 1, 2018	BOY	Outstanding Balance as of October 1, 2019	BOY	Years Remaining October 1, 2019
			2018/2019 Amortization Payment		2019/2020 Amortization Payment	
1990 Plan Amendment 10 Year Svc for Non-Svc Disability	\$62,149	\$14,339	\$7,349	\$7,525	\$7,525	1 years
1992 Plan Amendment Tax Compliance/Pick-Up Plan	(\$132,092)	(\$59,058)	(\$15,890)	(\$46,470)	(\$16,256)	3 years
1994 Plan Amendment Change Pre-Retirement Death Benefits	\$91,138	\$59,572	\$11,210	\$52,062	\$11,458	5 years
2000 Plan Amendment COLA	\$13,628,631	\$13,016,579	\$1,406,999	\$12,497,713	\$1,434,744	11 years
2004 Plan Amendment DROP	\$2,820,380	\$2,945,314	\$260,851	\$2,889,824	\$265,606	15 years
2004 Plan Amendment Elected Officials/Appointees	\$1,220,245	\$1,274,299	\$112,858	\$1,250,291	\$114,915	15 years
2006 Plan Amendment 2.75% Multiplier	\$6,510,457	\$6,917,005	\$568,462	\$6,834,207	\$578,425	17 years
2008 Plan Amendment Senior Managers	\$383,377	\$407,005	\$31,402	\$404,337	\$31,931	19 years
2009 Plan Amendment Senior Managers	\$134,409	\$141,010	\$10,579	\$140,409	\$10,754	20 years
2015 Plan Amendment 7 Year Vesting	\$50,515	\$51,843	\$3,413	\$52,135	\$3,464	26 years
1992 Assumption Change	(\$806,413)	(\$360,547)	(\$97,005)	(\$283,703)	(\$99,244)	3 years
1994 Assumption Change	\$1,260,489	\$823,890	\$155,032	\$720,026	\$158,473	5 years
1995 Assumption Change	\$697,180	\$505,240	\$83,440	\$454,068	\$85,255	6 years
1996 Assumption Change	\$365,331	\$299,293	\$44,275	\$274,527	\$45,220	7 years
1997 Assumption Change	\$73,638	\$72,397	\$9,744	\$67,446	\$9,947	8 years
2000 Assumption Change	(\$10,001,095)	(\$9,551,952)	(\$1,032,497)	(\$9,171,193)	(\$1,052,858)	11 years
2002 Assumption Change	\$1,136,132	\$1,148,047	\$111,221	\$1,116,143	\$113,330	13 years
2008 Assumption Change	(\$117,474)	(\$124,716)	(\$9,622)	(\$123,899)	(\$9,784)	19 years
2016 Assumption Change	\$15,767,946	\$16,058,369	\$1,039,502	\$16,167,810	\$1,054,524	27 years
2017 Assumption Change	\$2,649,056	\$2,625,239	\$211,499	\$2,598,391	\$209,733	28 years
2018 Assumption Change	\$7,032,129	\$7,032,129	\$561,204	\$6,965,951	\$556,415	29 years
2019 Assumption Change	\$2,995,400			\$2,995,400	\$236,969	30 years



UNFUNDED LIABILITY BASES

TABLE Va

<u>Description</u>	<u>Original Amount</u>	<u>Outstanding Balance as of October 1, 2018</u>	<u>BOY 2018/2019 Amortization Payment</u>	<u>Outstanding Balance as of October 1, 2019</u>	<u>BOY 2019/2020 Amortization Payment</u>	<u>Years Remaining October 1, 2019</u>
2002 Method Change	(\$5,539,505)	(\$5,597,612)	(\$542,289)	(\$5,442,055)	(\$552,570)	13 years
2010 Method Change	(\$696,223)	(\$731,135)	(\$53,449)	(\$729,529)	(\$54,316)	21 years
2000 Variable Benefit	\$226,471	\$210,514	\$22,755	\$202,123	\$23,204	11 years
2001 Variable Benefit	\$280,869	\$269,596	\$27,509	\$260,607	\$28,041	12 years
Total		\$83,231,944	\$6,135,012	\$85,731,019	\$6,442,935	

<u>Date</u>	<u>Projected Unfunded Liability</u>
October 1, 2019	\$85,731,019
October 1, 2020	\$85,274,335
October 1, 2021	\$84,610,973
October 1, 2022	\$83,788,172
October 1, 2049	\$0

* The total experience loss/(gain) for the 2018/2019 plan year of (\$259,231) is adjusted by contribution timing differences adjusted with interest equal to (\$27,540).



DEVELOPMENT OF MARKET ASSET (GAIN)/LOSS

TABLE VIa

	As of October 1, 2018	As of October 1, 2019
1. Market Value of Assets		
a. Cash and cash equivalents (2.76%)	\$4,109,578	\$5,298,070
b. U.S. government bonds (5.57%)	\$11,865,270	\$10,687,143
c. Equity securities* (61.56%)	\$123,267,287	\$118,107,051
d. Corporate bonds and notes (7.36%)	\$11,665,257	\$14,113,287
e. Private equity funds (7.35%)	\$14,531,768	\$14,098,949
f. Real estate (15.33%)	\$25,692,099	\$29,409,852
g. Net receivables and other (0.15%)	\$258,728	\$285,113
h. Accrued expenses payable (-0.07%)	(\$170,330)	(\$136,641)
i. Payable for securities purchased (0%)	\$0	\$0
j. Market value of assets (100%)	\$191,219,657	\$191,862,824

*In prior years, "Equity securities" were divided in to "Common stock" and "Equity Funds."

2. Actuarial Value of Assets

a. Market Value of Assets	\$191,219,657	\$191,862,824
b. 5-year phase-in of gain/(losses) on Actuarial Value of Assets:		
i. 2014/2015	(\$12,427,208)	x 20% = (\$2,485,442)
ii. 2015/2016	\$2,433,768	x 40% = \$973,507
iii. 2016/2017	\$8,461,700	x 60% = \$5,077,020
iv. 2017/2018	\$3,150,542	x 80% = \$2,520,434
v. 2018/2019	(\$9,073,291)	x 80% = (\$7,258,633)
vi. Total unrecognized (losses)/gains	\$6,085,519	(\$1,496,874)
c. Preliminary Actuarial Value of Assets (Item a. minus item e.vi.)	\$185,134,138	\$193,359,698
d. Corridor around Actuarial Value of Assets		
i. 80% of Market Value (item a.)	\$152,975,726	\$153,490,259
ii. 120% of Market Value (item a.)	\$229,463,588	\$230,235,389
e. Actuarial Value of Assets (Item c., but within items d.i. and d.ii.)	\$185,134,138	\$193,359,698



DEVELOPMENT OF MARKET ASSET (GAIN)/LOSS

TABLE VIa

	<u>As of October 1, 2018</u>	<u>As of October 1, 2019</u>
1. Beginning of Year Market Value	\$177,325,805	\$191,219,657
2. Expected Interest on Assets	\$14,008,739	\$14,628,304
3. Contributions	\$10,965,265	\$12,211,294
4. Benefit Payments	(\$13,567,082)	(\$16,369,186)
5. Administrative Expenses	(\$539,529)	(\$572,997)
6. Interest on 3, 4, and 5	<u>(\$124,083)</u>	<u>(\$180,957)</u>
7. Expected End of Year Market Value	\$188,069,115	\$200,936,115
8. Actual End of Year Market Value	\$191,219,657	\$191,862,824
9. Gain/(Loss) for Plan Year	\$3,150,542	(\$9,073,291)

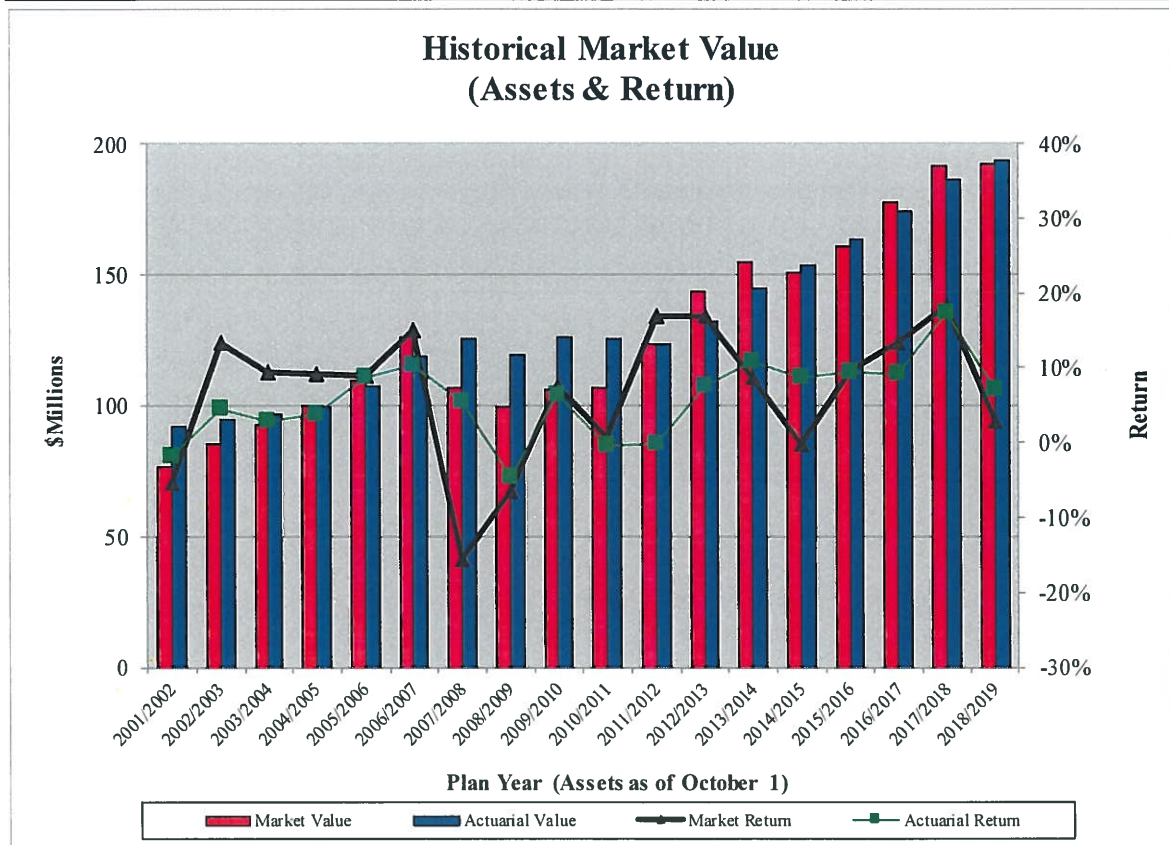
**MARKET ASSET RECONCILIATION****TABLE VIb**

	As of October 1, 2018	As of October 1, 2019
1. Beginning of Year Market Value:	\$177,325,805	\$191,219,657
2. Increases Due to:		
a. Contributions:		
i. City	\$7,953,196	\$9,079,297
ii. County	\$348,773	\$251,199
iii. Employee	\$2,663,296	\$2,880,798
iv. Total	<u>\$10,965,265</u>	<u>\$12,211,294</u>
b. Investment income	\$17,035,198	\$5,374,056
c. Total increases	<u>\$28,000,463</u>	<u>\$17,585,350</u>
3. Decreases Due to:		
a. Benefit payments	\$13,342,113	\$16,084,009
b. Refund of member contributions	\$224,969	\$285,177
c. Administrative expenses	\$539,529	\$572,997
d. Miscellaneous	\$0	\$0
e. Total decreases	<u>\$14,106,611</u>	<u>\$16,942,183</u>
4. End of Year Market Value:	\$191,219,657	\$191,862,824



HISTORICAL ASSET INFORMATION

TABLE VII



Plan Year	Market Value as of October 1	Actuarial Value as of October 1	Benefit Payments	Administrative Expenses	City, County, and Member Contributions	Market Return	Actuarial Return
2001/2002	\$76,424,845	\$91,709,814	\$3,254,038	\$250,351	\$2,140,762	(5.30)%	(1.80)%
2002/2003	\$85,458,520	\$94,741,607	\$3,556,707	\$282,053	\$2,803,247	13.30%	4.50%
2003/2004	\$92,735,898	\$96,735,577	\$3,895,060	\$330,446	\$3,481,462	9.40%	2.90%
2004/2005	\$99,890,915	\$98,980,085	\$4,967,607	\$387,998	\$4,039,559	9.10%	3.70%
2005/2006	\$109,249,514	\$107,334,005	\$4,862,124	\$425,926	\$4,905,164	8.90%	8.80%
2006/2007	\$126,184,449	\$118,772,822	\$5,376,897	\$482,702	\$6,246,138	15.10%	10.30%
2007/2008	\$106,187,212	\$124,869,067	\$6,521,687	\$531,899	\$6,506,416	(15.70)%	5.30%
2008/2009	\$99,128,822	\$118,954,587	\$6,309,625	\$517,272	\$6,584,631	(6.40)%	(4.60)%
2009/2010	\$106,118,339	\$126,102,821	\$7,081,623	\$541,663	\$7,207,441	7.49%	6.37%
2010/2011	\$106,693,934	\$125,170,479	\$7,858,299	\$483,843	\$8,032,038	0.84%	(0.49)%
2011/2012	\$123,122,925	\$123,424,957	\$9,328,455	\$490,142	\$8,374,155	16.87%	(0.24)%
2012/2013	\$143,522,730	\$132,247,827	\$8,781,030	\$479,816	\$8,857,264	16.92%	7.49%
2013/2014	\$154,313,634	\$144,640,159	\$10,409,529	\$491,959	\$9,213,527	8.75%	10.72%
2014/2015	\$150,255,553	\$153,291,563	\$12,524,827	\$530,248	\$9,232,033	(0.15)%	8.74%
2015/2016	\$160,422,298	\$163,311,844	\$12,735,090	\$526,236	\$9,138,762	9.64%	9.35%
2016/2017	\$177,325,805	\$173,854,154	\$13,120,101	\$475,674	\$9,372,720	13.34%	9.16%
2017/2018	\$191,219,657	\$185,134,138	\$13,567,082	\$539,529	\$10,965,265	9.69%	8.37%
2018/2019	\$191,862,824	\$193,359,698	\$16,369,186	\$572,997	\$12,211,294	2.85%	7.09%



REVENUES BY SOURCE AND EXPENSES BY TYPE

TABLE VIIa

REVENUES					
Fiscal Year	City and County Contributions	Member Contributions	Sub-Total	Net Investment Income	Total
2002/2003	\$1,228,956	\$1,574,291	\$2,803,247	\$10,069,188	\$12,872,435
2003/2004	\$1,849,695	\$1,631,767	\$3,481,462	\$8,021,422	\$11,502,884
2004/2005	\$2,341,224	\$1,698,335	\$4,039,559	\$8,471,063	\$12,510,622
2005/2006	\$3,144,061	\$1,761,103	\$4,905,164	\$9,741,485	\$14,646,649
2006/2007	\$4,064,240	\$2,181,898	\$6,246,138	\$16,548,396	\$22,794,534
2007/2008	\$3,416,488	\$3,089,928	\$6,506,416	(\$19,450,067)	(\$12,943,651)
2008/2009	\$3,706,870	\$2,877,761	\$6,584,631	(\$6,816,124)	(\$231,493)
2009/2010	\$4,338,870	\$2,868,571	\$7,207,441	\$7,405,362	\$14,612,803
2010/2011	\$5,351,521	\$2,680,517	\$8,032,038	\$885,699	\$8,917,737
2011/2012	\$5,801,971	\$2,572,184	\$8,374,155	\$17,873,433	\$26,247,588
2012/2013	\$6,332,731	\$2,524,533	\$8,857,264	\$20,803,387	\$29,660,651
2013/2014	\$6,697,862	\$2,515,665	\$9,213,527	\$12,478,865	\$21,692,392
2014/2015	\$6,669,132	\$2,562,901	\$9,232,033	(\$235,039)	\$8,996,994
2015/2016	\$6,545,407	\$2,593,355	\$9,138,762	\$14,289,309	\$23,428,071
2016/2017	\$6,755,068	\$2,617,652	\$9,372,720	\$21,126,562	\$30,499,282
2017/2018	\$8,301,969	\$2,663,296	\$10,965,265	\$17,035,198	\$28,000,463
2018/2019	\$9,330,496	\$2,880,798	\$12,211,294	\$5,374,056	\$17,585,350

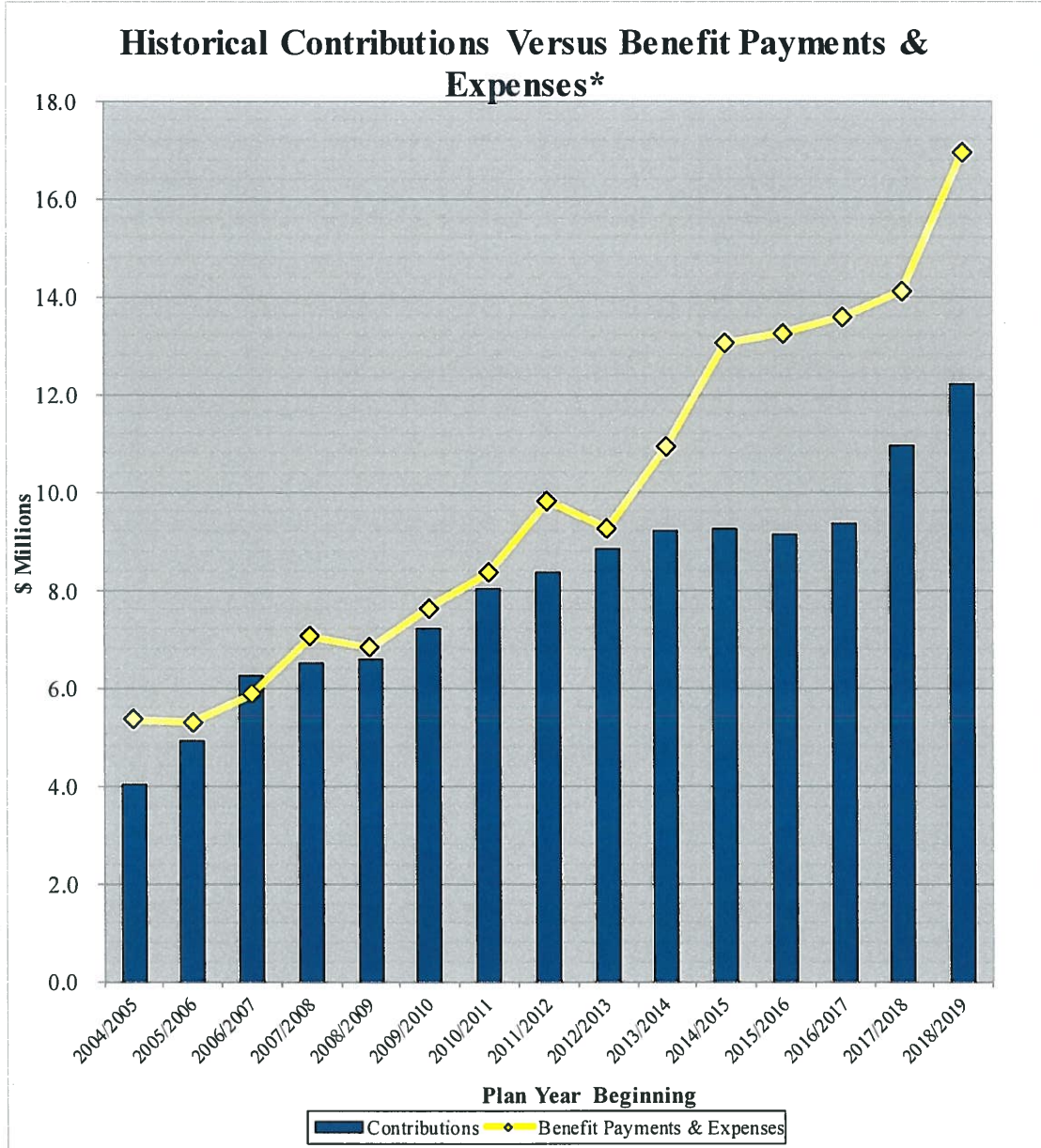
EXPENSES				
Fiscal Year	Benefits Paid	Member Refunds	Administrative Expenses*	Total
2002/2003	\$3,365,295	\$191,412	\$282,053	\$3,838,760
2003/2004	\$3,712,048	\$183,012	\$330,446	\$4,225,506
2004/2005	\$4,695,826	\$271,781	\$387,998	\$5,355,605
2005/2006	\$4,641,050	\$221,074	\$425,926	\$5,288,050
2006/2007	\$5,009,768	\$367,129	\$482,702	\$5,859,599
2007/2008	\$6,333,970	\$187,717	\$531,899	\$7,053,586
2008/2009	\$6,010,437	\$299,188	\$517,272	\$6,826,897
2009/2010	\$6,991,324	\$90,299	\$541,663	\$7,623,286
2010/2011	\$7,580,413	\$277,886	\$483,843	\$8,342,142
2011/2012	\$9,122,607	\$205,848	\$490,142	\$9,818,597
2012/2013	\$8,621,962	\$159,068	\$479,816	\$9,260,846
2013/2014	\$10,047,279	\$362,250	\$491,959	\$10,901,488
2014/2015	\$12,286,072	\$238,755	\$530,248	\$13,055,075
2015/2016	\$12,536,330	\$198,760	\$526,236	\$13,261,326
2016/2017	\$12,997,314	\$122,787	\$475,674	\$13,595,775
2017/2018	\$13,342,113	\$224,969	\$539,529	\$14,106,611
2018/2019	\$16,084,009	\$285,177	\$572,997	\$16,942,183

* Does not include investment expenses



CONTRIBUTIONS VS. FUND PAYOUTS

TABLE VIII



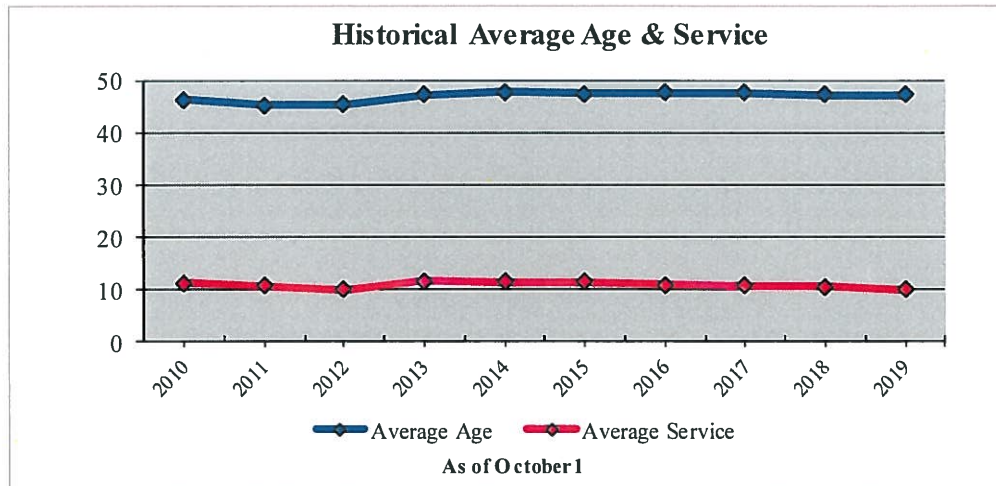
* Please reference Table VIIa for the historical benefit payments, expenses, and contributions.



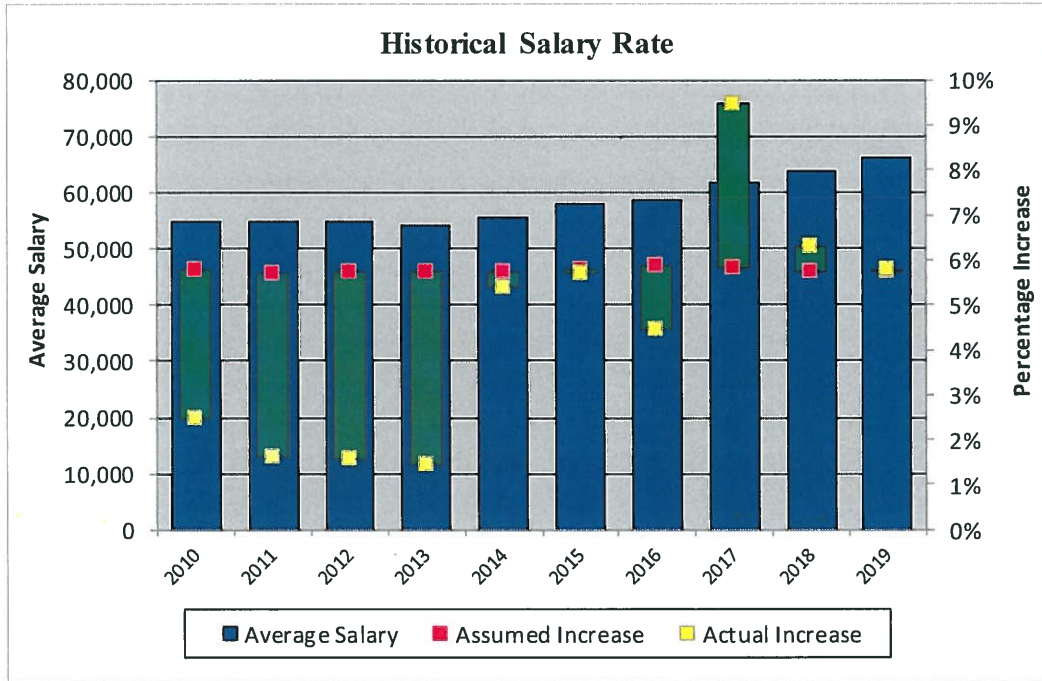
SUMMARY OF MEMBER DATA

TABLE IX

	<u>As of October 1, 2018</u>	<u>As of October 1, 2019</u>
1. Active Members		
a. Vested	280	274
b. Non-vested	208	249
c. Sub-total	<u>488</u>	<u>523</u>
2. Non-active, Non-retired Members		
a. Fully or partially vested	28	28
3. Retired Members		
a. Members in DROP	51	44
b. Retirees	330	340
c. Disabled	17	14
d. Beneficiaries	43	45
e. Sub-total	<u>441</u>	<u>443</u>
4. Total Members	<u>957</u>	<u>994</u>



Date	Average Service Earned	Average Attained Age
October 1, 2010	11.4	46.4
October 1, 2011	10.7	45.2
October 1, 2012	10.1	45.3
October 1, 2013	11.7	47.2
October 1, 2014	11.5	47.8
October 1, 2015	11.4	47.4
October 1, 2016	11.0	47.7
October 1, 2017	10.7	47.6
October 1, 2018	10.5	47.3
October 1, 2019	10.1	47.2



Date	Average Salary	Actual Salary Increase	Assumed Salary Increase
October 1, 2010	54,952	2.50%	5.80%
October 1, 2011	54,777	1.62%	5.72%
October 1, 2012	54,732	1.59%	5.75%
October 1, 2013	54,118	1.44%	5.75%
October 1, 2014	55,659	5.38%	5.75%
October 1, 2015	57,849	5.72%	5.78%
October 1, 2016	58,611	4.45%	5.89%
October 1, 2017	61,859	9.47%	5.82%
October 1, 2018	63,890	6.30%	5.75%
October 1, 2019	66,131	5.80%	5.73%

**ACTIVE DATA****TABLE IXa**

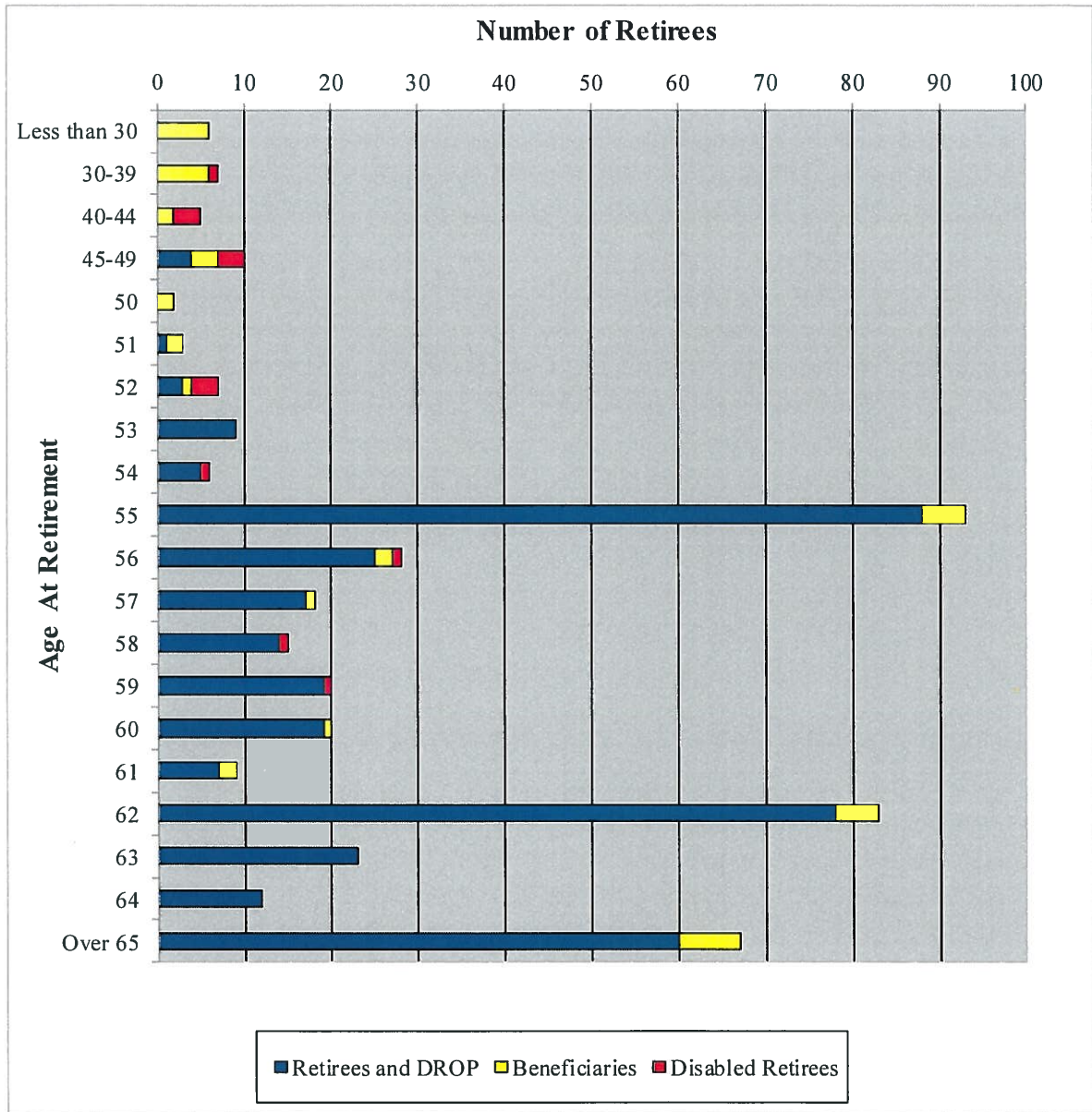
The definition of compensation for benefit determination purposes includes base pay and regular longevity wages, and excludes overtime, bonuses and any other non-regular payments. The table on the following page illustrates the ten year pay history for the System which includes all compensation received by the members of the plan. Total compensation has increased by 3.5% per year for the ten year period ending October 1, 2019.

Valution Date	Total Payroll	Average Annual Increase Ending October 1,
October 1, 2019	\$39,842,790	3.5%
October 1, 2018	36,485,736	2.9%
October 1, 2017	33,853,007	2.3%
October 1, 2016	32,096,866	1.9%
October 1, 2015	30,552,268	1.3%
October 1, 2014	29,419,890	0.8%
October 1, 2013	29,406,608	1.0%
October 1, 2012	29,235,231	1.2%
October 1, 2011	28,312,236	0.2%
October 1, 2010	30,401,074	7.8%
October 1, 2009	28,205,419	



RETIREE DATA

TABLE IXb



Average benefit being paid to non-disabled retirees is \$2,830.63 per month.

Average benefit being paid to disabled retirees is \$2,202.16 per month.

Average benefit being paid to beneficiaries is \$1,592.99 per month.



DATA RECONCILIATION

TABLE IXc

	<u>Active</u>	<u>Non-Active, Non-Retired</u>	<u>Retired</u>	<u>Total</u>
1. Number of members as of October 1, 2018	488	28	441	957
2. Change in Status during the plan year:				
a. Actives who became inactive	(5)	5		
b. Actives who retired	(14)		14	
c. Inactives who became active				
d. Inactives who retired		(3)	3	
e. Retirees who became active				
3. No longer members due to:				
a. Death		(1)	(22)	(23)
b. Permanent break-in-service	(14)	(1)		(15)
c. Forfeiture of benefits				
d. Expiration of certain period				
e. Included in error last year				
4. New members due to:				
a. Initial membership	68			68
b. Death of another member			7	7
c. Omitted in error last year				
d. Correction				
5. Number of members as of October 1, 2019	523	28	443	994

*- Additional records for members who vested benefits under Plan 1 and have returned to service as Plan 2 members. In the previous valuation, each member had only 1 record that reflected all service.



AGE-SERVICE SALARY TABLE

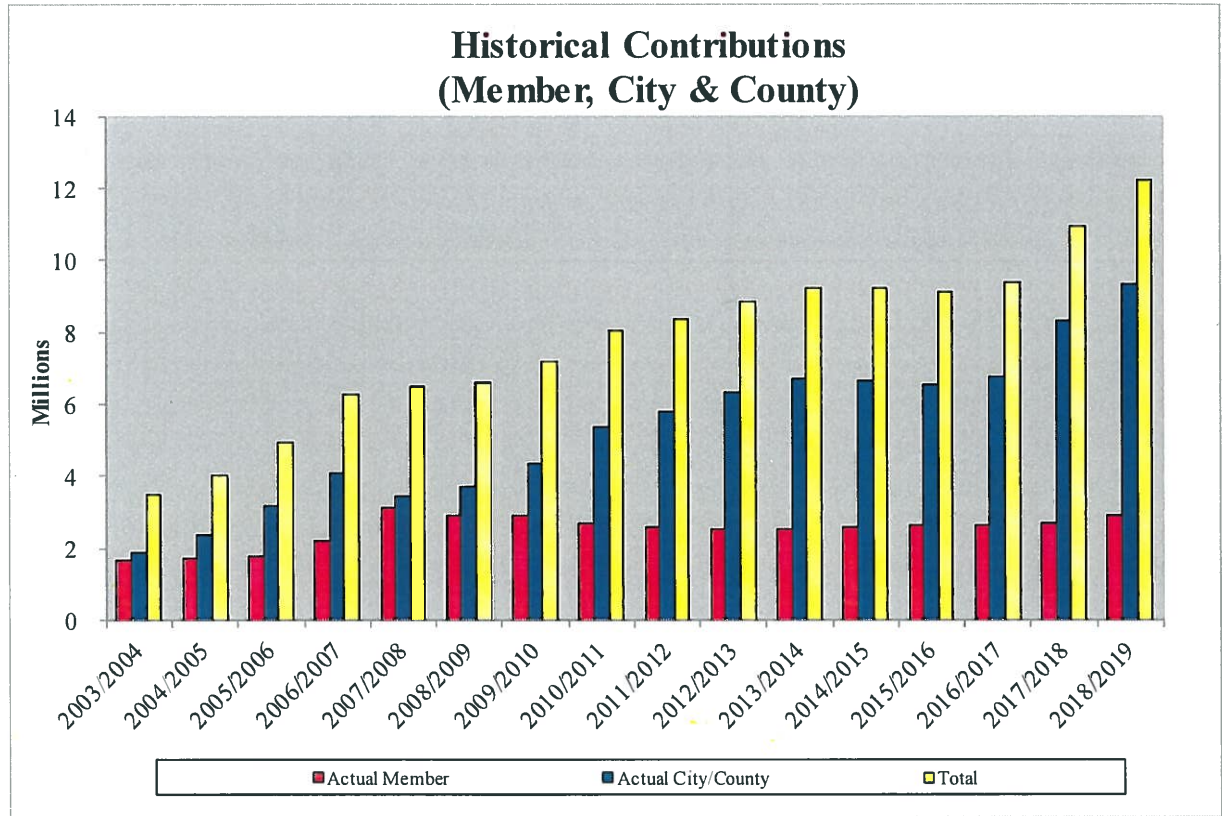
TABLE IXd

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	35 to 39	40 & Up		
Under 25	2	5	0	0	0	0	0	0	0	0	0	7
Avg. Pay	42,265	42,061	0	0	0	0	0	0	0	0	0	42,119
25 to 29	6	27	1	0	0	0	0	0	0	0	0	34
Avg. Pay	42,268	48,062	49,473	0	0	0	0	0	0	0	0	47,081
30 to 34	3	23	20	3	0	0	0	0	0	0	0	49
Avg. Pay	54,554	44,584	56,733	55,555	0	0	0	0	0	0	0	50,825
35 to 39	5	20	10	17	10	0	0	0	0	0	0	62
Avg. Pay	38,308	48,403	53,023	64,710	65,345	0	0	0	0	0	0	55,538
40 to 44	0	12	13	13	15	5	0	0	0	0	0	58
Avg. Pay	0	58,376	71,794	59,612	67,050	72,746	0	0	0	0	0	65,143
45 to 49	2	18	12	13	18	13	7	0	0	0	0	83
Avg. Pay	77,865	63,815	79,489	70,984	73,303	78,350	78,426	0	0	0	0	73,109
50 to 54	5	20	11	17	10	10	6	7	0	0	0	86
Avg. Pay	63,540	76,233	58,414	71,817	73,452	77,383	83,066	74,702	0	0	0	72,505
55 to 59	1	22	10	22	11	6	6	7	1	0	0	86
Avg. Pay	106,043	58,794	70,664	68,347	69,999	68,841	81,125	96,933	55,533	0	0	69,926
60 to 64	2	9	10	3	7	3	2	1	0	0	0	37
Avg. Pay	62,225	74,518	77,691	57,668	82,392	129,849	86,535	141,049	0	0	0	81,768
65 to 79	0	6	2	4	0	1	0	1	0	0	0	14
Avg. Pay	0	57,930	94,849	78,947	0	116,860	0	57,944	0	0	0	73,419
70 & Up	2	1	1	1	2	0	0	0	0	0	0	7
Avg. Pay	64,663	50,687	262,159	53,369	56,405	0	0	0	0	0	0	86,907
Total	28	163	90	93	73	38	21	16	1	0	0	523
Avg. Pay	54,521	56,673	68,661	67,002	70,859	80,936	81,295	87,528	55,533	0	0	66,131



HISTORICAL CONTRIBUTIONS

TABLE X



Plan Year	Actual Member	City/County	Total
2003/2004	\$1,631,767	\$1,849,695	\$3,481,462
2004/2005	\$1,698,335	\$2,341,224	\$4,039,559
2005/2006	\$1,761,103	\$3,144,061	\$4,905,164
2006/2007	\$2,181,898	\$4,064,240	\$6,246,138
2007/2008	\$3,089,928	\$3,416,488	\$6,506,416
2008/2009	\$2,877,761	\$3,706,870	\$6,584,631
2009/2010	\$2,868,571	\$4,338,870	\$7,207,441
2010/2011	\$2,680,517	\$5,351,521	\$8,032,038
2011/2012	\$2,572,184	\$5,801,971	\$8,374,155
2012/2013	\$2,524,533	\$6,332,731	\$8,857,264
2013/2014	\$2,515,665	\$6,697,862	\$9,213,527
2014/2015	\$2,562,901	\$6,669,132	\$9,232,033
2015/2016	\$2,593,355	\$6,545,407	\$9,138,762
2016/2017	\$2,617,652	\$6,755,068	\$9,372,720
2017/2018	\$2,663,296	\$8,301,969	\$10,965,265
2018/2019	\$2,880,798	\$9,330,496	\$12,211,294



Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September 2017, Actuarial Standard of Practice Number 51, Assessment and Disclosure of Risk in Measuring Pension Obligations, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, is first applicable for the October 1, 2019 actuarial valuation for the Plan.

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. If plan assets are depleted, benefits may not be paid which could create legal and litigation risk or the plan could become “pay as you go.” The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor/employer to pay and
- external risks such as the regulatory and political environment.

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. The Plan is primarily funded by member and employer contributions to the trust fund, together with the earnings on these accumulated contributions. These contributions fund benefit accruals for current active members and administrative expenses. The remainder of the contributions amortizes the unfunded actuarial accrued liability. The required contribution rate is the sum of the rates for the normal cost for the plan and the amortization of the unfunded actuarial accrued liability. The required contribution rate is sensitive to increases in the UAAL and periods of lower than expected returns would lead to much higher contribution rates as a percentage of payroll.



The other significant risk factor for the Plan is investment return because of the volatility of returns and the size of plan assets compared to payroll. A perusal of historical returns over 10-20 years reveals that the actual return each year is rarely close to the average return for the same period. This is to be expected, given the underlying capital market assumptions and the Plan's asset allocation. To the extent market rates of interest affect the expected return on assets, there is a risk of change to the discount rate which determines the present value of liabilities and actuarial valuation results.

A key demographic risk for the Plan is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect a margin for improvement in mortality experience these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, which would also be significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.



1. Actuarial Cost Method

- Entry Age Normal Cost Method. Total normal cost is determined as a level percentage of pay which would be required annually from entry age to retirement age to fund the expected retirement benefits assuming the Plan had always been in effect. The Actuarial Accrued Liability is the amount of the Present Value of Benefits that have been accrued under the Entry Age Normal Method to date.

2. Decrements

- **Pre-Retirement Healthy Mortality**

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB
 Male: RP2000 Generational, 50% Combined Healthy White Collar / 50% Combined Healthy Blue Collar, Scale BB

- **Post-Retirement Healthy Mortality**

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB
 Male: RP2000 Generational, 50% Annuitant White Collar / 50% Annuitant Blue Collar, Scale BB

- **Post-Retirement Disabled Mortality**

Female: RP2000, 100% Disabled Female set forward two years, no projection scale
 Male: RP2000, 100% Disabled Male setback four years, no projection scale

- **Disability**

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

Age	Ordinary Disability Rate	Service Disability Rate	Age	Ordinary Disability Rate	Service Disability Rate
20	.000232	.000058	40	.000484	.000121
25	.000232	.000058	45	.000868	.000217
30	.000232	.000058	50	.001716	.000429
35	.000260	.000065	55	.003564	.000891



- **Retirement**

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

Age	Rate
≤54	.0700
55	.5000
56-60	.3000
61-65	.5000
66-69	.3000
≥70	1.000

- **Withdrawal from Active Status**

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

Age	Years of Service				
	0 – 1	1 – 2	2 – 3	3 – 4	4+
20	.1800	.1200	.1000	.0700	.1071
25	.1800	.1200	.1000	.0700	.0756
30	.1800	.1200	.1000	.0700	.0536
35	.1800	.1200	.1000	.0700	.0416
40	.1800	.1200	.1000	.0700	.0321
45	.1800	.1200	.1000	.0700	.0227
50	.1800	.1200	.1000	.0700	.0132
55	.1800	.1200	.1000	.0700	.0038

3. Interest Rates

- Used for calculating all liabilities
 - 7.55% per annum



4. Salary Increase

• Individual Compensation:

Service	Rate
0-10	7.50%
>10	4.25%

• Aggregate Compensation

2.40% per year for unfunded liability bases established prior to October 1, 2017.
0.00% for bases established thereafter.

5. Marriage Assumptions

• Percent Married: 100% of active members assumed married at retirement.

1. **Age Differences between Spouses:** Male spouses are assumed to be three years older than female spouses.

6. Expenses:

Expenses paid out of the fund, other than investment-related expenses, are assumed to be equal to the average of actual expenses over the previous two years.

7. DROP

2. **Entry:** Of those assumed to retire using the Service Retirement rates, the proportion entering DROP is as shown in the following table.

Age at Retirement	Proportion Entering DROP
Under 55	0%
55-62	70%
Over 62	10%

3. **Period:** DROP participants are assumed to remain in the DROP for a total of five years.

8. Assets

The market value of assets is adjusted to recognize, over a five-year period, investment earnings greater (or less than) the assumed investment return. The resulting Actuarial Value of Assets is limited to no more than 120% of the market value of assets and no less than 80% of the market value of assets. Details are shown in the Asset Information Section of the report.



9. Amortization Period

New Unfunded Actuarial Accrued Liability resulting from plan amendments, changes in assumptions or methods, or actuarial gains and loss are amortized over 30 years based on the plan's assumed rate of investment return. Bases established prior to October 1, 2017 are amortized as a level percentage of expected payroll, and bases established thereafter are amortized as a level dollar payment.

10. BSO Required Contribution

The required contribution for the Broward Sheriff's Office (BSO) is determined by multiplying the total required contribution rate as a percentage of payroll by the payroll for BSO employees, projected to the following year.

11. Data Sources

Asset Data:

The asset information is taken from audited statements furnished by the Retirement Office, and adjusted to include DROP Accounts as liabilities of the Plan. The DROP Account balances are added to net asset amount shown in the audited statement. The valuation entry for benefits paid during the last years reflects benefit amounts explicitly paid from the Plan (including the payout of DROP Accounts) and does not reflect those paid into members' DROP accounts.

Member Data:

The member data is supplied by the Retirement Office. It is reviewed for reasonableness and consistency, but no audit was performed. Cavanaugh Macdonald is not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.



PLAN PROVISIONS

TABLE XIII

Effective Date:

Plan 1: December 8, 1972

Plan 2: June 8, 2011

Eligibility:

Regular full-time employment with the City (at least 26 hours per week and 5 months per year), including Elected Officials, Appointees, and Senior Managers.

Earnings:

Basic compensation and regular longevity pay, increased for temporary upgrade pay. Lump sum payment at termination for unused sick leave and vacation time is not included.

Average Monthly Earnings (AME):

Plan 1: Monthly average for the highest completed 78 bi-weekly pay periods during employment times 1.0048.

Plan 2: Monthly average for the highest completed 130 bi-weekly pay periods during employment times 1.0048.

Credited Service:

Total years and completed months of service from the last date of hire to the date of termination, retirement, death, or disability.

Normal Retirement

Eligibility (Normal Retirement Date):

The earlier of attainment of age 55 with 20 years of Continuous Service, or age 62 with 3 years of Credited Service as a “regular employee” with the City.

Benefit:

Plan 1: 2.75% of AME times years of service.

Plan 2: 2.00% of AME times years of service.

Maximum Benefit:

\$90,000 per year (indexed) at age 62, or 100% of AME (such earnings to exclude picked-up employee contributions per Sec. 414(h)(2), deferred compensation per Sec 457, and amounts deferred under Sec 125).



Normal Form of Benefit:

Life annuity to the member.

COLA:

- Plan 1:** Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired for at least one year. Increase is 2%. An additional 1% will be payable if either there is a net experience gain for the year, or the City cost for the year is zero after payment of the variable COLA.

- Plan 2:** Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired at least five years. No increase is given for eligible retirees under 55 on October 1. A 1% increase is given for eligible retirees between 55 and 64. A 2% increase is given for eligible retirees 65 or older. A “variable” increase (of not more than one percent) will be granted when the plan is sufficiently funded.

Early Retirement

Eligibility:

The attainment of 20 years of Credited Service.

Benefit:

- Plan 1:** 2.75% of AME times years of service.

- Plan 2:** 2.00% of AME times years of service.

Normal Form of Benefit:

Life annuity to the member.

COLA:

- Plan 1:** Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired for at least one year. Increase is 2%. An additional 1% will be payable if either there is a net experience gain for the year, or the City cost for the year is zero after payment of the variable COLA.

- Plan 2:** Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired at least five years. No increase is given for eligible retirees under 55 on October 1. A 1% increase is given for eligible retirees between 55 and 64. A 2% increase is given for eligible retirees 65 or older. A “variable” increase (of not more than one percent) will be granted when the plan is sufficiently funded.



Delayed Retirement

Benefit:

Plan 1: 2.75% of AME times years of service.

Plan 2: 2.00% of AME times years of service.

Normal Form of Benefit:

Life annuity to the member.

COLA:

Plan 1: Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired for at least one year. Increase is 2%. An additional 1% will be payable if either there is a net experience gain for the year, or the City cost for the year is zero after payment of the variable COLA.

Plan 2: Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired at least five years. No increase is given for eligible retirees under 55 on October 1. A 1% increase is given for eligible retirees between 55 and 64. A 2% increase is given for eligible retirees 65 or older. A “variable” increase (of not more than one percent) will be granted when the plan is sufficiently funded.

Drop Retirement

Eligibility:

The earlier of attainment of age 55 with 20 years of Continuous Service, or age 62 with 3 years of Credited Service as a “regular employee” with the City.

Benefit:

Plan 1: 2.75% of AME times years of service.

Plan 2: 2.00% of AME times years of service.

Normal Form of Benefit:

Life annuity to the member.



COLA:

Same as Normal Retirement, except that the COLA is first credited and paid on the October 1 the member is eligible to receive a COLA after leaving employment (exits DROP)

DROP Period:

The Member may remain in the DROP for any period up to five years.

Contributions:

Member contributions cease when Member enters DROP.

DROP Interest:

DROP account balances are credited at the beginning of each month with interest at 1/12th of the rate assumed in the actuarial valuation for that year.

Disability Retirement – Service Incurred

Eligibility:

Members are immediately eligible for a Disability Retirement Benefit where the Disability results from an act occurring in the performance of service with the City of Pompano Beach.

Disability Retirement eligibility is forfeited upon entry into the DROP.

Disability Definition:

Total and permanent disablement and unable to earn at least 75% of regular earnings. A member who is eligible for full primary Social Security old age benefits is not eligible.

Benefit:

60% of Earnings.

Normal Form of Benefit:

Life annuity to the member.



COLA:

- Plan 1:** Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired for at least one year. Increase is 2%. An additional 1% will be payable if either there is a net experience gain for the year, or the City cost for the year is zero after payment of the variable COLA.
- Plan 2:** Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired at least five years. No increase is given for eligible retirees under 55 on October 1. A 1% increase is given for eligible retirees between 55 and 64. A 2% increase is given for eligible retirees 65 or older. A “variable” increase (of not more than one percent) will be granted when the plan is sufficiently funded.

Disability Retirement – Non-Service Incurred

Eligibility:

Total and permanent disablement, 7 years of service, and unable to be gainfully employed. A member who is eligible for full primary Social Security old age benefits is not eligible.

Disability Retirement eligibility is forfeited upon entry into the DROP.

Benefit:

Accrued pension, subject to a minimum of 25% of Earnings.

COLA:

- Plan 1:** Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired for at least one year. Increase is 2%. An additional 1% will be payable if either there is a net experience gain for the year, or the City cost for the year is zero after payment of the variable COLA.
- Plan 2:** Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired at least five years. No increase is given for eligible retirees under 55 on October 1. A 1% increase is given for eligible retirees between 55 and 64. A 2% increase is given for eligible retirees 65 or older. A “variable” increase (of not more than one percent) will be granted when the plan is sufficiently funded.



Pre-Retirement Death Benefit – Basic

Benefit:

1 times annual earnings (payable in monthly installments over four years) plus a refund of contributions with interest. Alternatively, for members eligible for Early or Normal Retirement, or who have a vested benefit whether still actively employed by the City or not, the pension is payable to the beneficiary for 10 years as though retirement occurred on the date of death under Option 2, Ten Year Certain and Life (no reduction for early retirement if death occurs prior to normal retirement).

COLA:

Plan 1: Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired for at least one year. Increase is 2%. An additional 1% will be payable if either there is a net experience gain for the year, or the City cost for the year is zero after payment of the variable COLA.

Plan 2: Paid annually, on October 1 for retired members (or their beneficiaries) who have been retired at least five years. No increase is given for eligible retirees under 55 on October 1. A 1% increase is given for eligible retirees between 55 and 64. A 2% increase is given for eligible retirees 65 or older. A “variable” increase (of not more than one percent) will be granted when the plan is sufficiently funded.

Withdrawal – Non Vested

Eligibility:

First day of work, up to the earlier of 7 years of City service or 5 years of Senior Management Service for regular employees only.

Benefit:

Accumulated contributions with 3% interest.

Form of Benefit:

Lump sum.



Withdrawal – Vested

Eligibility:

Regular employees – at least 7 years of service.

Senior Managers – earlier of 7 years of City service and 5 years of Senior Management Service.

Elected Officials and Appointees – at least 5 years of service.

Benefit:

A vested benefit deferred to regular normal retirement date. Alternatively, a regular employee or Senior Management participant may withdraw the accumulated contributions and forfeit the deferred vested benefit.

Member Contributions

Contributions:

Elected Officials and Appointees

No member contributions. However, the City will make contributions at the same rate that applies to Regular Employees on behalf of these participants. These contributions are not eligible for refund upon termination.

Regular Employees and Senior Managers

Plan 1: 10.0% of earnings.

Plan 2: 7.0% of earnings.

Interest Crediting Rate:

3% per year.

Optional Forms of Payment

Option 1:

Joint and last survivor option.

Option 2:

Ten-Year Certain and Life option.



Additional Provisions

Reentry Provision:

Credit for prior service is granted in full upon repayment of all monies refunded to the member with interest at the assumed interest rate for actuarial purposes.

Second Retirement Provision:

Members may retire and return to work as a regular employee. Prior pension payments are continued during the period of reemployment. A second benefit is earned based solely on the second period of employment, provided the employee worked at least three years during the second period of employment.



PLAN AMENDMENTS

TABLE XIIIa

The following Plan Amendments have been adopted within the past few years. Amendment changes that have first been reflected in this valuation are shown in bold print:

1. Effective June 8, 2011

- a) For members hired on or after June 8, 2011, average monthly earnings is the average of the highest 130 bi-weekly pay periods times 1.0048.
- b) For members hired on or after June 8, 2011, the monthly retirement benefit is 2.0% times average monthly earnings.
- c) For members hired on or after June 8, 2011, the contribution rate is 7.0% of earnings.
- d) For members hired on or after June 8, 2011, a member is eligible for a COLA on their fifth anniversary of retirement. No increase is given for eligible retirees under 55 on October 1. A 1% increase is given for eligible retirees between 55 and 64. A 2% increase is given for eligible retirees 65 or older. A “variable” increase (of not more than one percent) will be granted when the plan is sufficiently funded.

2. Effective January 13, 2015

- a. Members are 100% vested upon completion of 7 years of continuous service with the City.