GRS Retirement Consulting

P: 954.527.1616 | F: 954.525.0083 | www.grsconsulting.com

June 25, 2019

Mr. Chris Chiocca
Finance Director
City of Hialeah
501 Palm Avenue
Hialeah, Florida 33010-4719

Re: City of Hialeah Elected Officers Retirement System

Dear Chris:

As requested, we are pleased to enclose ten (10) copies of the October 1, 2018 Chapter 112.664 Compliance Report for the City of Hialeah Elected Officers Retirement System (System).

As required, we will timely upload the required data to the State's online portal prior to the filing deadline.

We understand the following items must be posted on the System's website and must be posted on any website containing budget information relating to the City or actuarial or performance information relating to the System:

- this compliance report
- the most recent financial statement
- the most recent actuarial valuation report
- a link to the Division of Retirement Actuarial Summary Fact Sheet

  http://www.dms.myflorida.com/workforce_operations/retirement/local_retirement_plans/local_retirement_section/actuarial_summary_fact_sheets
- for the previous five years - a side-by-side comparison of the System's assumed rate of return compared to the actual rate of return as well as the percentages of cash, equity, bond and alternative investments in the System portfolio
- the System's funded ratio as determined in the most recent actuarial valuation – 115.3% on a net market value of assets basis as of October 1, 2018

We appreciate the opportunity to work with the City Council on this important assignment.

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

Sincerest regards,

Jennifer Borregard

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

Enclosures

cc: Ms. Ines F. Beecher (w/ enclosure)

One East Broward Boulevard | Suite 505 | Ft. Lauderdale, Florida 33301-1804

CITY OF HIALEAH ELECTED OFFICERS RETIREMENT SYSTEM

CHAPTER 112.664, F.S. COMPLIANCE REPORT

In Connection with the October 1, 2018 Funding Actuarial Valuation Report and the System's Financial Reporting for the Year Ended September 30, 2018

GRS

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June 25, 2019

City Council
c/o Mr. Chris Chiocca
Finance Director
City of Hialeah
501 Palm Avenue
Hialeah, Florida 33010-4719

Re: October 1, 2018 Chapter 112.664 Compliance Report

Dear City Council Members:

Gabriel, Roeder, Smith & Company (GRS) has been engaged by the City Council (Council) of the City of Hialeah Elected Officers Retirement System (System) to prepare a disclosure report to satisfy the requirements set forth in Chapter 112.664, F.S. and as further required pursuant to Chapter 60T-1.0035, F.A.C.

This report was prepared at the request of the Council and is intended for use by the Council and those designated or approved by the Council. This report may be provided to parties other than the Council only in its entirety and only with the permission of the Council.

The purpose of the report is to provide the required information specified in Chapter 112.664, F.S. and to supplement this information with additional exhibits. This report should not be relied on for any purpose other than the purpose described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: System 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 upon the System's funded status); and changes in System provisions or applicable law. The scope of this engagement does not include an analysis of the potential range of such measurements.

This report was based upon information furnished by the Council and City concerning System benefits, System provisions and System members as used in the corresponding Actuarial Valuation Reports for the Valuation Dates indicated. Financial information was provided by the Council and City as of September 30, 2018. We reviewed the information provided for internal and year-to-year consistency, but did not audit the information provided to us. The System is responsible for the accuracy of the information provided to us.

Except where specific assumptions are required by Chapter 112.664, F.S, this report was prepared using actuarial assumptions adopted by the Council as described in Section C. The Council's assumptions are

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based upon past and expected future System experience and represent an estimate of future System experience. The mortality assumptions are prescribed by statute.

If all actuarial assumptions are met and if all current and future minimum required contributions are paid System assets will be sufficient to pay all System benefits. Future contributions are expected to remain relatively stable. System minimum required contributions are determined in compliance with the requirements of the Florida Protection of Public Employee Retirement Benefits Act with normal cost determined as a level percent of covered payroll along with a level dollar amortization payment using an initial amortization period of 15 years.

The System's funded ratio as of October 1, 2018 is 115.3% defined as the ratio of the net market value of System assets to the actuarial accrued liability.

The System's funded ratio and the GASB Net Pension Liability may not be appropriate for assessing the sufficiency of System assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions.

The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the System sponsor.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and presents the actuarial position of the System as of the valuation date as required by statute. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

With respect to the reporting standards for defined benefit retirement systems contained in Section 112.664(1), F.S., the actuarial disclosures required under this section were prepared and completed by us or under our direct supervision and we acknowledge responsibility for the results.

To the best of our knowledge and belief, the results are complete and accurate, and in our opinion, meet the requirement of Section 112.664(1), F.S., and Section 60T-1.0035, F.A.C.

Respectfully submitted,

GABRIEL, ROEDER, SMITH AND COMPANY

By _____ By _____

Lawrence F. Wilson, M.A.A.A
Enrolled Actuary No. 17-02802
Senior Consultant & Actuary

Jennifer M. Borregard, M.A.A.A
Enrolled Actuary No. 17-07624
Consultant & Actuary

Date: June 25, 2019

GRS Retirement Consulting

TABLE OF CONTENTS

Section	Title	Page
A	Chapter 112.664, F.S. Results	
	Net Pension Liability	
	1. Using financial reporting assumptions per GASB Statement No. 67 and No. 68 and using assumptions required under Section 112.664(1)(a), F.S.	1
	2. Using assumptions required under Section 112.664(1)(b), F.S.	2
	Asset and Benefit Payments Projection	
	1. Using financial reporting assumptions per GASB Statement No. 67 and No. 68 and using assumptions required under Section 112.664(1)(a), F.S.	3
	2. Using assumptions required under Section 112.664(1)(b), F.S.	4
	Actuarially Determined Contribution	5
	Unfunded Actuarial Accrued Liabilities Bases and Amortization Payments	6
B	Summary of System Provisions	7
C	Actuarial Assumptions and Cost Methods Used for Funding	9
D	Glossary	13

SECTION A

CHAPTER 112.664, F.S. RESULTS

Net Pension Liability
Using Financial Reporting Assumptions per GASB Statements No. 67 and No. 68 and Using Assumptions Required Under 112.664(1)(a), F.S.

	Measurement Date		September 30, 2018
A.	Total Pension Liability (TPL)		
	Service Cost	$	163,244
	Interest		549,563
	Benefit Changes		0
	Difference Between Actual and Expected Experience		53,554
	Assumption Changes		0
	Benefit Payments		(382,474)
	Other		0
	Net Change in Total Pension Liability	$	383,887
	Total Pension Liability (TPL) - (beginning of year)		9,133,825
	Total Pension Liability (TPL) - (end of year)	$	9,517,712
B.	System Fiduciary Net Position		
	Contributions - Employer	$	164,417
	Contributions - Member		23,118
	Net Investment Income		788,367
	Benefit Payments		(382,474)
	Administrative Expenses		(19,085)
	Other		0
	Net Change in System Fiduciary Net Position	$	574,343
	System Fiduciary Net Position - (beginning of year)		11,651,039
	System Fiduciary Net Position - (end of year)	$	12,225,382
C.	Net Pension Liability (NPL) - (end of year): (A) - (B)	$	(2,707,670)
	Valuation Date		October 1, 2017

Certain Key Assumptions

Investment Return Assumption 6%

Mortality Table:

For healthy male participants during employment, RP2000 Combined Male Healthy Participant Mortality Table, with 50% Blue Collar Adjustment / 50% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP2000 Annuitant Male Mortality Table, with 50% Blue Collar Adjustment / 50% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP2000 Annuitant Female Mortality Tables with White Collar Adjustment and fully generational mortality improvements projected to each future decrment date with Scale BB.

Net Pension Liability
Using Assumptions Required Under 112.664(1)(b), F.S.

	Measurement Date		September 30, 2018
A.	Total Pension Liability (TPL)		
	Service Cost	$	254,436
	Interest		471,908
	Benefit Changes		0
	Difference Between Actual and Expected Experience		82,845
	Assumption Changes		0
	Benefit Payments		(382,474)
	Other		0
	Net Change in Total Pension Liability	$	426,715
	Total Pension Liability (TPL) - (beginning of year)		11,651,644
	Total Pension Liability (TPL) - (end of year)	$	12,078,359
B.	System Fiduciary Net Position		
	Contributions - Employer	$	164,417
	Contributions - Member		23,118
	Net Investment Income		788,367
	Benefit Payments		(382,474)
	Administrative Expenses		(19,085)
	Other		0
	Net Change in System Fiduciary Net Position	$	574,343
	System Fiduciary Net Position - (beginning of year)		11,651,039
	System Fiduciary Net Position - (end of year)	$	12,225,382
C.	Net Pension Liability (NPL) - (end of year): (A) - (B)	$	(147,023)
	Valuation Date		October 1, 2017

Certain Key Assumptions

Investment Return Assumption 4%

Mortality Table:

For healthy male participants during employment, RP2000 Combined Male Healthy Participant Mortality Table, with 50% Blue Collar Adjustment / 50% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP2000 Annuitant Male Mortality Table, with 50% Blue Collar Adjustment / 50% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP2000 Annuitant Female Mortality Tables with White Collar Adjustment and fully generational mortality improvements projected to each future decrment date with Scale BB.

Asset and Benefit Payment Projection
Not Reflecting Any Future Contributions
Using Financial Reporting Assumptions per GASB Statements No. 67 and No. 68
and Using Assumptions Required Under 112.664(1)(a), F.S.

FYE	Market Value of Assets (BOY)	Expected Investment Return	Projected Benefit Payments	Market Value of Assets (EOY)
2019	$ 11,007,048	$ 645,573	$ 461,029	$ 11,191,592
2020	11,191,592	653,580	556,201	11,288,971
2021	11,288,971	657,784	607,083	11,339,672
2022	11,339,672	658,670	674,012	11,324,330
2023	11,324,330	656,836	702,354	11,278,812
2024	11,278,812	654,673	684,737	11,248,748
2025	11,248,748	652,704	689,848	11,211,604
2026	11,211,604	650,129	700,624	11,161,109
2027	11,161,109	647,419	690,687	11,117,841
2028	11,117,841	645,138	680,905	11,082,074
2029	11,082,074	643,475	665,900	11,059,649
2030	11,059,649	642,646	649,883	11,052,412
2031	11,052,412	642,780	632,248	11,062,944
2032	11,062,944	643,891	617,348	11,089,487
2033	11,089,487	646,023	600,616	11,134,894
2034	11,134,894	649,382	580,922	11,203,354
2035	11,203,354	654,132	560,973	11,296,513
2036	11,296,513	660,370	540,823	11,416,060
2037	11,416,060	668,199	520,472	11,563,787
2038	11,563,787	677,723	499,960	11,741,550
2039	11,741,550	688,828	486,344	11,944,034
2040	11,944,034	701,415	472,746	12,172,703
2041	12,172,703	715,792	452,326	12,436,169
2042	12,436,169	732,114	436,374	12,731,909
2043	12,731,909	750,253	424,133	13,058,029
2044	13,058,029	770,330	408,309	13,420,050
2045	13,420,050	792,641	389,986	13,822,705
2046	13,822,705	817,365	372,461	14,267,609
2047	14,267,609	844,603	355,582	14,756,630
2048	14,756,630	874,469	339,306	15,291,793
2049	15,291,793	907,081	323,705	15,875,169
2050	15,875,169	942,569	308,643	16,509,095
2051	16,509,095	981,080	293,866	17,196,309
2052	17,196,309	1,022,785	279,224	17,939,870
2053	17,939,870	1,067,871	264,541	18,743,200
2054	18,743,200	1,116,550	249,662	19,610,088
2055	19,610,088	1,169,052	234,502	20,544,638
2056	20,544,638	1,225,621	219,106	21,551,153
2057	21,551,153	1,286,513	203,548	22,634,118
2058	22,634,118	1,351,994	187,922	23,798,190
2059	23,798,190	1,422,338	172,397	25,048,131
2060	25,048,131	1,497,827	157,116	26,388,842
2061	26,388,842	1,578,751	142,179	27,825,414
2062	27,825,414	1,665,409	127,771	29,363,052
2063	29,363,052	1,758,108	114,107	31,007,053
2064	31,007,053	1,857,158	101,381	32,762,830

Number of years for which current market value of assets are adequate to sustain the payment of expected retirement benefits reflecting no contributions from the City or Members: 99.99

Certain Key Assumptions

Investment return assumption 6%

Mortality Table:

For healthy male participants during employment, RP2000 Combined Male Healthy Participant Mortality Table, with 50% Blue Collar Adjustment / 50% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP2000 Annuitant Male Mortality Table, with 50% Blue Collar Adjustment / 50% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP2000 Annuitant Female Mortality Tables with White Collar Adjustment and fully generational mortality improvements projected to each future decrment date with Scale BB.

Note: As required in Section 112.664(c) of the Florida Statutes, the projection of System assets does not include future contributions from the City or Member. For this reason, this projection should not be viewed as representative of the amount of time the System can sustain benefit payments. Under the Government Accounting Standards Board standards which include City and Member contributions, the System is expected to be able to pay all future benefit payments.

Asset and Benefit Payment Projection
Not Reflecting Any Future Contributions
Using Assumptions Required Under 112.664(1)(b), F.S.

FYE	Market Value of Assets (BOY)	Expected Investment Return	Projected Benefit Payments	Market Value of Assets (EOY)
2019	$ 11,007,048	$ 430,353	$ 461,029	$ 10,976,372
2020	10,976,372	427,076	556,201	10,847,247
2021	10,847,247	420,815	607,083	10,660,979
2022	10,660,979	411,923	674,012	10,398,890
2023	10,398,890	400,829	702,354	10,097,365
2024	10,097,365	389,148	684,737	9,801,776
2025	9,801,776	377,214	689,848	9,489,142
2026	9,489,142	364,476	700,624	9,152,994
2027	9,152,994	351,245	690,687	8,813,552
2028	8,813,552	337,878	680,905	8,470,525
2029	8,470,525	324,480	665,900	8,129,105
2030	8,129,105	311,168	649,883	7,790,390
2031	7,790,390	297,999	632,248	7,456,141
2032	7,456,141	284,950	617,348	7,123,743
2033	7,123,743	272,014	600,616	6,795,141
2034	6,795,141	259,294	580,922	6,473,513
2035	6,473,513	246,859	560,973	6,159,399
2036	6,159,399	234,728	540,823	5,853,304
2037	5,853,304	222,923	520,472	5,555,755
2038	5,555,755	211,463	499,960	5,267,258
2039	5,267,258	200,216	486,344	4,981,130
2040	4,981,130	189,064	472,746	4,697,448
2041	4,697,448	178,156	452,326	4,423,278
2042	4,423,278	167,533	436,374	4,154,437
2043	4,154,437	157,043	424,133	3,887,347
2044	3,887,347	146,700	408,309	3,625,738
2045	3,625,738	136,630	389,986	3,372,382
2046	3,372,382	126,874	372,461	3,126,795
2047	3,126,795	117,414	355,582	2,888,627
2048	2,888,627	108,238	339,306	2,657,559
2049	2,657,559	99,331	323,705	2,433,185
2050	2,433,185	90,680	308,643	2,215,222
2051	2,215,222	82,280	293,866	2,003,636
2052	2,003,636	74,132	279,224	1,798,544
2053	1,798,544	66,244	264,541	1,600,247
2054	1,600,247	58,633	249,662	1,409,218
2055	1,409,218	51,318	234,502	1,226,034
2056	1,226,034	44,323	219,106	1,051,251
2057	1,051,251	37,666	203,548	885,369
2058	885,369	31,368	187,922	728,815
2059	728,815	25,440	172,397	581,858
2060	581,858	19,891	157,116	444,633
2061	444,633	14,723	142,179	317,177
2062	317,177	9,935	127,771	199,341
2063	199,341	5,516	114,107	90,750
2064	90,750	1,479	101,381	0

Number of years for which current market value of assets are adequate to sustain the payment of expected retirement benefits reflecting no contributions from the City or Members: 45.83

Certain Key Assumptions

Investment return assumption 4%

Mortality Table:

For healthy male participants during employment, RP2000 Combined Male Healthy Participant Mortality Table, with 50% Blue Collar Adjustment / 50% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP2000 Annuitant Male Mortality Table, with 50% Blue Collar Adjustment / 50% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP2000 Annuitant Female Mortality Tables with White Collar Adjustment and fully generational mortality improvements projected to each future decrment date with Scale BB.

Note: As required in Section 112.664(c) of the Florida Statutes, the projection of System assets does not include future contributions from the City or Member. For this reason, this projection should not be viewed as representative of the amount of time the System can sustain benefit payments. Under the Government Accounting Standards Board standards which include City and Member contributions, the System is expected to be able to pay all future benefit payments.

ACTUARIALLY DETERMINED CONTRIBUTION

	Valuation Assumptions and 112.664(1)(a), F.S. Assumptions		112.664(1)(b), F.S. Assumptions	
A. Valuation Date	October 1, 2018		October 1, 2018	
B. Actuarial Determined Contribution to Be Paid During Fiscal Year Ending	September 30, 2020		September 30, 2020	
C. Annual Payroll of Active Employees	$ 677,812		$ 677,812	
D. Total Minimum Funding Requirement				
1. Total Normal Cost	$ 175,313		$ 263,581	
2. Annual Payment to Amortize Unfunded Actuarial Liability	(121,854)		113,110	
3. Interest Adjustment	3,426		21,678	
4. Total Minimum Funding Requirement (1. + 2. + 3., not less than 1.)	$ 175,313		$ 398,369	
E. Expected Contribution Sources ($ / % of pay)				
1. City	$ 152,234	22.46%	$ 375,290	55.37%
2. Member	23,079	3.40%	23,079	3.40%
3. State	0	0.00%	0	0.00%
4. Total	$ 175,313	25.86%	$ 398,369	58.77%

Unfunded Actuarial Accrued Liabilities Bases and Amortization Payments

	Amortization Base	Current Unfunded Liabilities	Amortization Payment: Valuation and 112.664(1)(a), F.S. Assumptions	Amortization Payment: 112.664(1)(b), F.S. Assumptions	Remaining Funding Period
10/01/2010	Combined Bases *	$ 66,040	$ 7,431	$ 6,766	12 years
10/01/2011	Actuarial Loss / (Gain)	167,344	25,423	23,899	8 years
10/01/2012	Actuarial Loss / (Gain)	(200,086)	(27,752)	(25,875)	9 years
10/01/2013	Actuarial Loss / (Gain)	(473,271)	(60,663)	(56,106)	10 years
10/01/2014	Actuarial Loss / (Gain)	(855,256)	(102,302)	(93,872)	11 years
10/01/2015	Actuarial Loss / (Gain)	(623,601)	(70,171)	(63,890)	12 years
10/01/2015	Establish Credit Balance	1,595,886	179,578	163,505	12 years
10/01/2016	Actuarial Loss / (Gain)	(324,883)	(34,622)	(31,284)	13 years
10/01/2016	Assumptions Change	87,441	9,318	8,420	13 years
10/01/2017	Actuarial Loss / (Gain)	(239,871)	(24,346)	(21,835)	14 years
10/01/2018	Actuarial Loss / (Gain)	(244,487)	(23,748)	(21,144)	15 years
10/01/2018	Assumption Change - 112.664(1)(b), F.S. Assumptions	2,596,220	N/A	224,526	15 years

** Combined per Internal Revenue Code Regulation 1.412(b)-1*

SECTION B

SUMMARY OF SYSTEM PROVISIONS

Outline of Principal Provisions of the Retirement System
(as of October 1, 2018)

A. Eligibility:

All elected officials, city attorneys and assistant city attorneys are eligible to participate. Effective January 1, 2014, the System is closed to new entrants.

B. Normal Retirement:

1. Eligibility:

   Earlier of:
   (a) Attainment of age 55 with completion of 8 years of credited service.
   (b) Completion of 20 years of credited service.

2. Mandatory Retirement Age:

   None.

3. Amount of Pension:

   Total service not to exceed 25 years, times 3.0% of final average monthly compensation at time of retirement.

4. Normal Form:

   Normal form of benefit is payable for life with 60 months guaranteed.

5. Type of Final Average Salary:

   Highest annual W-2 pay prior to termination or retirement divided by 12.

C. Deferred Retirement:

1. Eligibility:

   100% vesting upon the completion of 8 years of credited service - pension begins at age 55. Employees who have not completed 8 years of credited service at date of termination of employment shall be entitled to the return of their member contributions with 3% compound interest.

2. Benefit:

   Computed as a regular retirement but based upon service and compensation at time of termination.

D. Duty Disability Retirement:

None.

E. Non-Duty Disability Retirement:

None.

F. Pre-Retirement Death:

1. Eligibility:

   Immediate.

2. Benefit:

   Computed as for normal retirement and payable immediately, but terminates after 60 payments of monthly amount or 120 payments of one-half monthly amount.

G. City Contributions:

Actuarially determined amounts sufficient to cover the funding requirements.

H. Member Contributions:

7% of compensation for members who are not vested as of January 1, 2014. None for members who are vested as of January 1, 2014.

I. Changes Since Previous Actuarial Valuation:

None.

SECTION C

ACTUARIAL ASSUMPTIONS AND COST METHODS USED FOR FUNDING

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation (as of October 1, 2018)

A. Mortality:

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

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

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

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

B. Interest to be Earned by Fund:

6.0%, compounded annually, net of investment expenses - includes inflation of 2.75%.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation (as of October 1, 2018)

C. Allowances for Expenses or Contingencies:

Estimated expenses are based on actual expenses paid in previous year.

D. Employee Withdrawal Rates:

The rates do not apply to members eligible to retire and do not include separation on account of death or disability. This estimate measures the probabilities of members remaining in employment. These rates were first used for the September 30, 1995 valuation for Elected Officers and September 30, 2004 for Attorneys.

Sample Ages	Years of Service	Withdrawal Rates Per 100 Employees Elected Officers	Attorneys
ALL	Less than 5	10	20
25	5 & Over	10	10
30		10	10
35		10	10
40		10	10
45		10	10
50		10	10
55		10	10
55		10	10

E. Disability Rates:

None.

F. Salary Increase Factors:

Employee salaries are estimated to increase between the date of hire and date of retirement. The following assumed rates of increase in individual salaries were first used for the September 30, 2000 valuation.

Sample Ages	Salary Increase
20	8.00%
30	8.00%
40	8.00%
50	8.00%
60	8.00%

General increase in wage level due to wage inflation is 3.75%.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation (as of October 1, 2018)

G. Payroll Growth Assumption:

None.

H. Retirement Rates:

A member is assumed to retire upon becoming eligible for retirement after 20 or more years of service regardless of age or after attaining age 55 with 8 or more years of service. This rate was first used for the September 30, 1998 valuation.

I. Technical Assumptions:

1. Pay Increase Timing:
   Beginning of year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the date preceding the valuation date.

2. Decrement Timing:
   Decrements of all types are assumed to occur mid-year.

3. Eligibility Testing:
   Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

4. Benefit Service:
   Exact fractional service is used to determine the amount of benefit payable.

5. Decrement Relativity:
   Decrement rates are used directly from tabular rates, without adjustment for multiple decrement table effects.

6. Decrement Operation:
   Mortality decrement does not operate during the first 5 years of service. Withdrawal does not operate during retirement eligibility.

7. Incidence of Contributions:
   Contributions are assumed to be received midway through the fiscal year.

8. Marriage Assumption:
   100% of members are assumed to be married for purposes of death-in-service benefits.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation (as of October 1, 2018)

J. Asset Valuation Method:

The method used for determining the smoothed actuarial value of assets phases in the deviation between the expected and actual return on assets at the rate of 20% per year. The smoothed actuarial value of assets will be further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the fair market value of System assets and whose upper limit is 120% of the fair market value of System assets.

K. Cost Method:

Entry-Age-Normal Cost Method

Under this method the normal cost for each active employee is the amount which is calculated to be a level percentage of pay that would be required annually from his entry age to his assumed retirement age to fund his estimated benefits, assuming the System had always been in effect. The normal cost for the System is the sum of such amounts for all employees. The actuarial accrued liability as of any valuation date for each active employee or inactive employee who is eligible to receive benefits under the System is the excess of the actuarial present value of estimated future benefits over the actuarial present value of current and future normal costs. The unfunded actuarial accrued liability as of any valuation date is the excess of the actuarial accrued liability over the assets of the System.

L. Changes Since Previous Actuarial Valuation:

None.

SECTION D

GLOSSARY

GLOSSARY

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

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

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

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

Actuarial Present Value — The amount of funds required to provide a payment or series of payments in the future. It is determined by discounting the future payments with an assumed interest rate and with the assumed probability each payment will be made.

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

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

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

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

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

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

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

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

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

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

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

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

GASB	Governmental Accounting Standards Board.
GASB No. 67 and GASB No. 68	These are the governmental accounting standards that set the accounting rules for public retirement plans and the employers that sponsor or contribute to them. Statement No. 67 sets the accounting rules for the plans themselves, while Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement plans.
Normal Cost	The annual cost assigned, under the Actuarial Cost Method, to the current plan year.
Open Amortization Period	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.
Unfunded Actuarial Accrued Liability	The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.
Valuation Date	The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date.