



City of Ocala Firefighters' Retirement Plan

October 1, 2019 | Actuarial Valuation Report

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At the request of the plan sponsor, this report summarizes the Firefighters' Retirement Plan for the City of Ocala as of October 1, 2019. The purpose of this report is to communicate the following results of the valuation:

- Determine Funded Status; and
- Determine Actuarial Contribution for the fiscal year October 1, 2020 through September 30, 2021

This report has been prepared in accordance with the laws and accounting standards indicated above and their applicable regulations. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census information has been provided to us by the employer. Asset information has been provided to us by the trustee. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the Board. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- plan experience differing from that anticipated by the economic or demographic assumptions;
- changes in economic or demographic assumptions;
- increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
- changes in plan provisions or applicable law. We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account 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.

With respect to reporting standards for defined benefit retirement plans or systems contained in Section 112.664(1), F.S., the actuarial disclosures required under this section were prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, meet the requirements of Section 112.664 (1), Florida Statutes, and Rule 60T-1.0035, Florida Administrative Code.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart



Lawrence Watts, Jr., FSA, CFA, EA, MAAA

Enrolled Actuary No. 17-8496

March 16, 2020

Date



Heath W. Merlak, FSA, EA, MAAA

Enrolled Actuary No. 17-5967

Copies of this Report are to be furnished to the Division of Retirement within 60 days of receipt from the actuary at the following addresses:

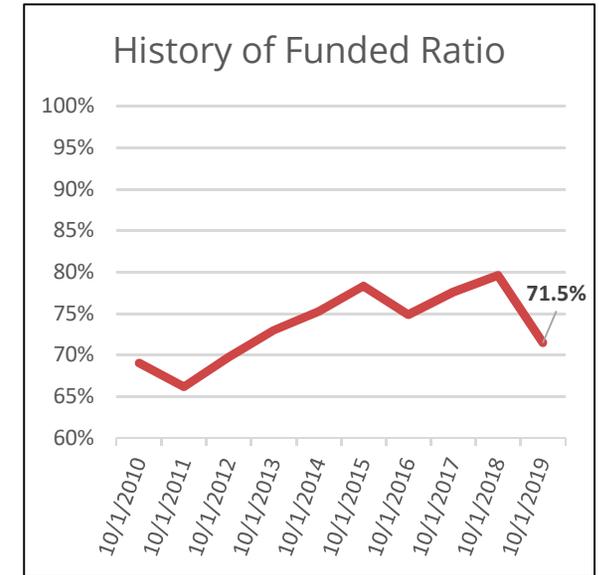
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Summary Results

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	October 1, 2018	October 1, 2019
Funded Status Measures		
Accrued Liability	\$67,325,431	\$77,263,779
Actuarial Value of Assets	53,597,970	55,227,847
Unfunded Accrued Liability	\$13,727,461	\$22,035,932
Funded Percentage (AVA)	79.6%	71.5%
Funded percentage (MVA)	81.1%	71.5%
Cost Measures		
Recommended Contribution	\$2,627,755	\$2,960,648
Recommended Contribution (as a percentage of payroll)	32.4%	36.2%
Asset Performance		
Market Value of Assets	\$54,586,682	\$55,227,847
Actuarial Value of Assets	\$53,597,970	\$55,227,847
Actuarial Value/Market Value	98.20%	100.00%
Market Value Rate of Return	8.93%	3.42%
Member Information		
Active Members	124	123
Terminated Vested Members	3	3
Retirees, Beneficiaries, and Disabled Members	76	85
DROP Participants	10	10
Total	213	221
Expected Payroll	\$8,116,983	\$8,167,559



Changes Since Prior Valuation and Key Notes

Assumed rates of mortality have been updated to match the Florida Retirement System (FRS) mortality assumptions for Special Risk Members. This adjustment was made after new mortality tables were adopted for the FRS Actuarial Valuation as of July 1, 2019.

Since the last valuation, an experience study was completed, reviewing the plan's experience over the period 2012 to 2018. After presenting the results to the Board, changes to the discount rate, asset method, inflation rate, salary scale, retirement rates, and withdrawal rates were adopted. Please refer to the actuarial experience study report dated September 10, 2019 for more details. The Board intends to recognize these changes immediately, while phasing in the contribution impact over three years via direct rate smoothing.

Additional risk disclosures have been integrated into this report in accordance with the new Actuarial Standard of Practice No. 51. Please read the pages immediately following to familiarize yourself with the information and let us know if you have any questions or concerns.

Identification of Risks

The results presented in this report are shown as single point values. However, these values are derived using assumptions about future markets and demographic behavior. If actual experience deviates from our assumptions, the actual results for the plan will consequently deviate from those presented in this report. Therefore, it is critical to understand the risks facing this pension plan. The following table shows the risks we believe are most relevant to the City of Ocala Firefighters' Retirement Plan. The risks are generally ordered with those we believe to have the most significance at the top. Also shown are possible methods by which a more detailed assessment of the risk can be performed.

Type of Risk	Additional Information
Investment Return	Portfolio risk and substantial equity position leave the plan open to adverse market results, which could increase costs in the future.
Participant Longevity	The plan has adopted FRS' most recent mortality tables for valuation purposes. These tables are modified from the standard tables, and, compared to the previous tables used by FRS, project a slightly shorter participant longevity overall. There is no guarantee FRS' anticipated mortality experience will mirror your plan's future experience. Deviation from expected mortality rates could impact long-term liabilities and plan cost.
Early Retirement	If more employees than expected avail themselves of the early retirement option, then this could impact estimated plan liabilities.

Type of Risk	Method to Assess Risk
Investment Return	Scenario testing; asset/liability study
Participant Longevity	Benefit projections and contribution strategy
Early Retirement	Scenario testing; review population and retirement rates

Plan Maturity Measures - October 1, 2019

Each pension plan has a distinct life-cycle. New plans promise future benefits to active employees and then accumulate assets to pre-fund those benefits. As the plan matures, benefits are paid and the pre-funded assets begin to decumulate until ultimately, the plan pays out all benefits. A plan's maturity has a dramatic influence on how risks should be viewed. The following maturity measures illustrate where the City of Ocala Firefighters' Retirement Plan falls in its life-cycle.

Duration of Liabilities: 11.3

Duration is the most common measure of plan maturity. It is defined as the sensitivity of the liabilities to a change in the interest rate assumption. The metric also approximates the weighted average length of time, in years, until benefits are expected to be paid. A plan with high duration is, by definition, more sensitive to changes in interest rates. A plan with low duration is more susceptible to risk if asset performance deviates from expectations as there would be less time to make up for market losses in adverse market environments while more favorable environments could result in trapped surplus from gains. Conversely, high duration plans can often take on more risk when investing, and low duration plans are less sensitive to interest rate fluctuations.

Demographic Distribution - Ratio of Actively Accruing Participants to All Participants: 55.7%

A plan with a high ratio is more sensitive to fluctuations in salary (if a salary-based plan) and statutory changes. A plan with a low ratio is at higher risk from demographic experience. Such a plan should pay close attention to valuation assumptions as there will be less opportunity to realize future offsetting gains or losses when current experience deviates from assumptions. Plans with a low ratio also have limited opportunities to make alterations to plan design to affect future funded status.

Asset Leverage - Ratio of Payroll for Plan Participants to Market Value of Assets: 13.0%

Younger plans typically have a large payroll base from which to draw in order to fund the plan while mature plans often have a large pool of assets dedicated to providing benefits to a population primarily consisting of members no longer on payroll. Plans with low asset leverage will find it more difficult to address underfunding, as the contributions needed to make up the deficit will represent a higher percentage of payroll than for a plan with high asset leverage.

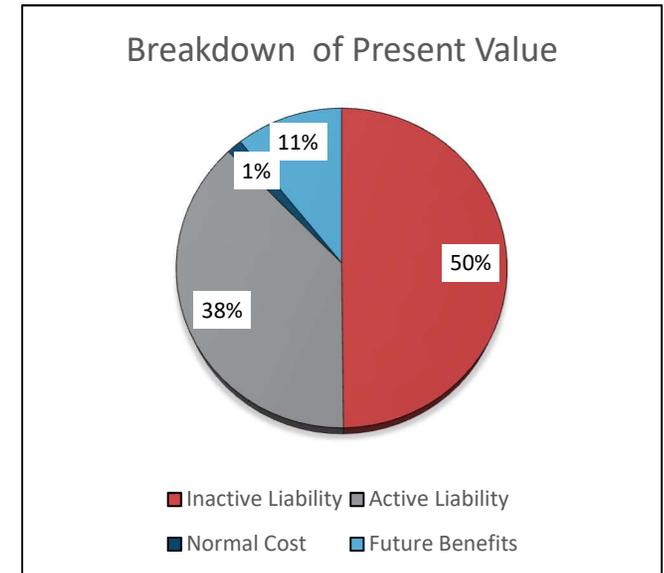
Benefit Payment Percentage - Ratio of Annual Benefit Payments to Market Value of Assets: 5.3%

As a plan enters its decumulation phase, a larger percentage of the pre-funded assets are paid out each year to retirees. A high percentage is not cause for alarm as long as the plan is nearly fully funded. However, such a plan is more sensitive to negative asset performance, especially if cash contributions are not an option to make up for losses.

Present Value of Future Benefits

The Present Value of Future Benefits represents the current future benefits payable to the participant.

	October 1, 2019
Present Value of Future Benefits	
Active members	
Retirement	\$40,389,620
Disability	1,907,891
Death	263,549
Termination	1,427,842
Refund of contributions	240,590
Total active	\$44,229,492
Inactive members	
Retired members	\$39,658,691
Beneficiaries	589,276
Disabled members	2,923,472
Terminated vested members	761,459
Total inactive	\$43,932,898
Total	\$88,162,390
 Present value of future payrolls	 \$60,244,740

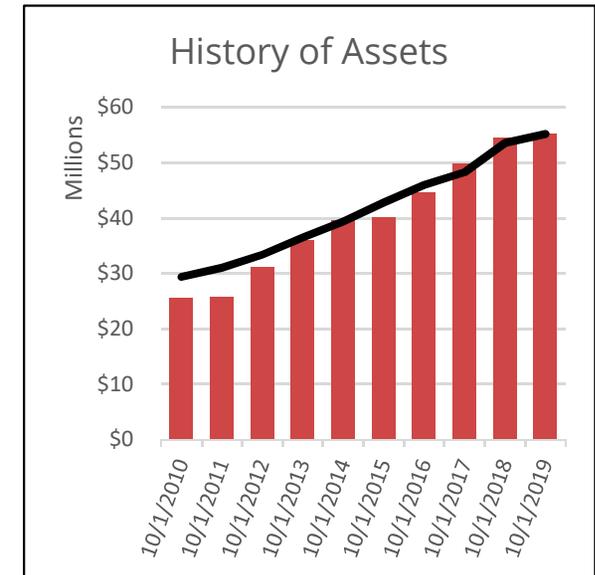


The Accrued Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions. It is not a long-term snapshot of the liabilities.

	October 1, 2019
Accrued Liability	
Active members	
Retirement	\$31,308,751
Disability	1,037,517
Death	156,530
Termination	754,507
Refund of contributions	73,576
Total Active	\$33,330,881
Inactive members	
Retired members	\$39,658,691
Beneficiaries	589,276
Disableds	2,923,472
Terminated vested members	761,459
Total Inactive	\$43,932,898
Total	\$77,263,779
Normal Cost	\$1,364,394

The amount of assets backing the pension promise is typically the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	October 1, 2019
Market Value Reconciliation	
Market value of assets, beginning of prior year	\$63,211,016
Contributions	
Employer	\$2,299,394
Employee	638,372
Non-Member	488,640
Total	\$3,426,406
Investment income	2,221,488
Investment Expenses	(208,534)
Benefit payments	(2,981,313)
Administrative expenses	(84,759)
Other Expenses	157,698
Market value of asset, beginning of current year	\$65,742,002
Return on Market Value	3.42%
Reserved Assets	(\$6,385,595)
DROP Account	(\$4,128,560)
Market value of assets available for pension benefits	\$55,227,847
Actuarial value of assets	
Value at beginning of current year	\$55,227,847



Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements

October 1, 2019

Pre-2019 Actuarial Asset Valuation Method:

1.	Expected Actuarial Value of Assets		
	(a) Actuarial Value of Assets, beginning of prior year		\$53,597,970
	(b) Contributions		3,416,323
	(c) Benefit Payments and Refunds		(3,313,112)
	(d) Expenses		(84,759)
	(e) Expected Return		4,020,527
	(f) Expected Actuarial Value of Assets, beginning of current year:		\$57,636,949
2.	Market Value of Assets, Beginning of Current Year:		\$55,227,847
3.	Amount Subject to Phase In [(2)-(1f)]		(\$2,409,102)
4.	Phase in of Asset Gain/(Loss) 20% x (\$2,409,102)]		(\$481,820)
5.	Preliminary Actuarial Value of Assets, Beginning of Current Year [(1f)+(4)]		\$57,155,129
6.	80% Market Value of Assets		\$44,182,278
7.	120% Market Value of Assets		\$66,273,416
8.	Final Actuarial Value of Assets under Prior Year Actuarial Valuation Method:		\$57,155,129

Current Actuarial Asset Valuation Method:

The City of Ocala Firefighters recently performed an experience study analysis reviewing the 2011 to 2018 valuations.

In that report, Nyhart recommended and the Board adopted a "20% Phase-In Method", where market value gains and losses are fully recognized in the actuarial value of assets over five years. The recommended method also included a 80% - 120% market value corridor.

In order to effectively implement the transition between the prior year and current year actuarial valuation methods, in the first year of the transition the actuarial value of assets is set equal to the market value of assets.

In the second year of the transition, the actuarial value of assets will be calculated by offsetting the end of year expected actuarial value of assets by 20% of the difference between the actual and expected market value of assets.

In summary:

1. Final Actuarial Value of Assets under Current Year Actuarial Valuation Method:	\$55,227,847
2. Return on Actuarial Value of Assets	6.60%

Reconciliation of Gain/Loss

October 1, 2019

Liability (gain)/loss

Actuarial Liability, beginning of Prior Year	\$67,325,431
Normal Cost	1,362,153
Benefit Payments	(3,313,112)
Interest	5,029,573
Assumption Change	6,042,962
1-Year Lag Adjustment	116,231
Expected Actuarial Liability, beginning of Current Year	\$76,563,238
Actual Actuarial Liability	77,263,779
Liability (gain)/loss	\$700,541

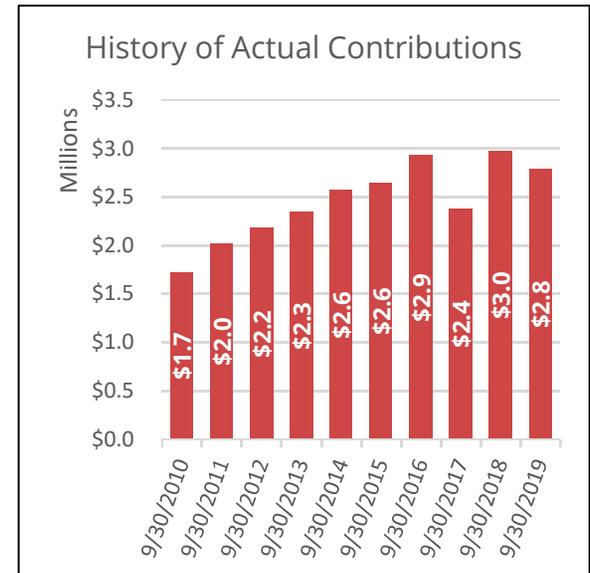
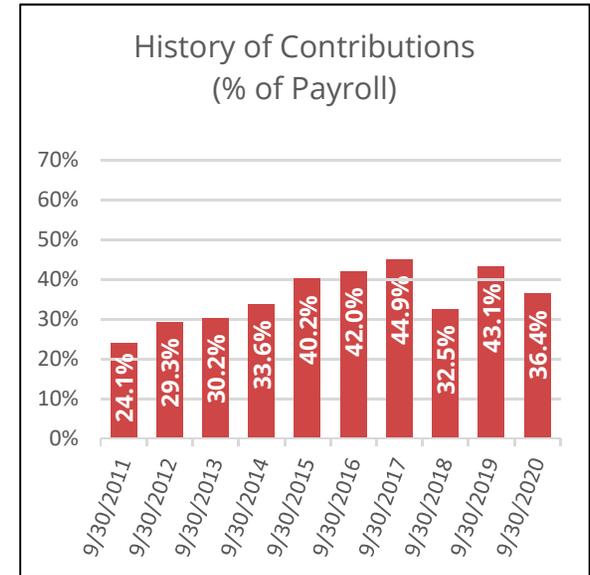
Asset (gain)/loss

Actuarial value of assets, beginning of prior year	\$53,597,970
Contributions	3,416,323
Benefit payments and expenses	(3,397,871)
Change In Asset Method	(1,927,282)
Investment Return	4,020,527
Expected Actuarial Value of Assets, beginning of current year	\$55,709,667
Actual actuarial value of assets, beginning of current year	55,227,847
Asset (gain)/loss, from Asset Experience	\$481,820
Total (gain)/loss	\$1,182,361

Development of Recommended Contribution

The actuarial determined contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws.

	October 1, 2019
Pre-2019 Interest Rate (7.5%) and AVA Method (20% Write-Up):	
1. Total Recommended Contribution:	\$2,706,156
Current Interest Rate (7.0%) and AVA Method (20% Phase In):	
Funded Position	
1. Entry Age Accrued Liability	\$77,263,779
2. Actuarial value of assets	(55,227,847)
3. Unfunded Actuarial Accrued Liability	\$22,035,932
Employer Contributions	
4. Normal Cost	
(a) Total Normal Cost	\$1,364,394
(b) Expected Participant Contributions	(565,080)
(c) Net Normal Cost	\$799,314
5. Administrative Expenses	84,759
6. Amortization of UAAL	2,534,250
7. Applicable Interest	251,310
8. Total recommended contribution as of end of year [(4)+(5)+(6)+(7)]	\$3,669,633
9. Expected Non-Employer Contributions	(200,000)
10. Total Recommended Contribution	\$3,469,633
Direct Rate Smoothing:	
1. Total Recommended Contribution:	\$2,960,648
2. As a Percentage of Expected Payroll	36.2%



Demographic Information

The foundation of a reliable actuarial report is the member information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

October 1, 2019

Member Counts

Active Members	123
Retired Members	61
Beneficiaries	11
Disabled Members	10
Terminated Vested Members, due a Monthly Benefit	3
DROP Members	13
Total	221

Active Participant Demographics

Average Age	36.94
Average Service	11.62
Average Compensation for Prior Year	\$59,892
Covered Payroll	\$7,367,409



Demographic Information (continued)

October 1, 2019

Retired Member Statistics

Average Age	65.5
Average Monthly Benefit	\$3,495

Beneficiary Statistics

Average Age	71.0
Average Monthly Benefit	\$617

Disabled Member Statistics

Average Age	64.4
Average Monthly Benefit	\$2,484

Terminated Member Statistics

Average Age	48.8
Average Monthly Benefit for Participants due Monthly Benefit	\$2,898

DROP Member Statistics

Average Age	53.4
Average Monthly Benefit	\$5,206

Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	DROP	Totals
Prior Year	124	3	10	55	11	10	213
To Retired	(3)			6		(3)	0
To Terminated Non-Vested	(3)						(3)
To Return of Contributions	(2)						(2)
To DROP	(6)					6	0
To Death			(1)				(1)
To Beneficiary							0
To Disabled							0
Additions	13		1				14
Departures							0
Current Year	123	3	10	61	11	13	221

Active Participant Schedule

Active participant information grouped based on age and service.

Age Group	Years of Service										Total	Average Pay
	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	7	8									15	\$36,925
25 to 29	5	12	5								22	\$43,031
30 to 34		6	2	5							13	\$55,037
35 to 39		2	1	17	5						25	\$63,980
40 to 44		1	2	3	7	2					15	\$76,763
45 to 49				4	5	10	4				23	\$81,077
50 to 54						7	1	1	1		10	\$87,349
55 to 59											0	\$0
60 to 64											0	\$0
65 to 69											0	\$0
70 & up											0	\$0
Total	12	29	10	29	17	19	5	1	1	0	123	\$62,644

The 'Average Pay' displayed is projected pay for the current year based on prior year compensation and assumed salary increases.

Plan Status

Established October 1, 1999 under the Code of Ordinances for the City of Ocala, Florida, Chapter 43 Article II Sections 43-21 through 43-45 and was most recently amended by Ordinance No. 2019-14 on January 9, 2019. The Plan is also governed by certain provisions of Chapters 175 and 185, Florida Statutes, Part VII, Chapter 112, Florida Statutes (F.S.) and the Internal Revenue Code.

Eligibility for Participation

Employees in the Fire Department, certified as firefighters.

Accrual of Benefits

The accrued benefit is determined as 3% of Average Final Compensation multiplied by Credited Service as of date of determination; maximum of 93% of Average Monthly Earnings.

Vesting

100% after 10 years

Benefits

Normal Retirement

Eligibility	Age 55 and 10 years of credited service, Rule of 70, or 25 years of credited service.
Benefit	Accrued Benefit

Early Retirement

Eligibility	Age 50 and 10 years of credited service
Benefit	Accrued Benefit reduced by 2% for each year prior to normal retirement date.

Termination Benefit

Eligibility	Fully vested after 10 years of credited service
Benefit	Accrued retirement benefit payable at participant's normal retirement date. If the participant terminates prior to 10 years of service a refund of the accumulated contributions without interest will be issued.

Disability Benefit In Line of Duty

Eligibility	Immediately upon permanent disability
Benefit	Accrued benefit, but not less than 42% of AME.

Disability Benefit Not In Line of Duty

Eligibility	Participant without vested benefit
Benefit	Refund of Contributions
Eligibility	Participant with vested benefit
Benefit	If vested, accrued benefit, but not less than 30% of AME.

Death Benefit

Eligibility	Participant without vested benefit
Benefit	Refund of Contributions
Eligibility	Service Incurred; Participant with vested benefit
Benefit	Choice of (i) Accrued benefit payable for 120 months; or (ii) 50% of AME to spouse until death.
Eligibility	Non-Service Incurred; Participant with vested benefit
Benefit	If not eligible for either early or normal retirement, same as for Service-Incurred Death Benefits. If eligible for either early or normal retirement, choice of (i) accrued benefit payable for 120 months; or (ii) 50% of accrued benefit to spouse until death.

Credited Service

For Vesting and Benefit Accruals, Service is defined as years and completed months.

Compensation

Average Monthly Earnings

Within 5 years of normal retirement as of November 1, 2015: Average during highest 3 consecutive of last 5 years of total earnings, including base salary, pick-up contributions, overtime pay, assignment pay, and educational incentive.

Others: Average during highest 5 of last 10 years of earnings, including base salary, state education incentive pay, and up to 300 hours of overtime pay per year, excluding all other compensation

Employee Contributions

7.67% to Regular Fund Retirement Plan and 0.50% to COLA Fund (8.17% total).

Payment Forms

Normal Form

50% joint & contingent survivor, with 10 years' certain, payable for life (married); 10 years' certain and life (single).

Optional Forms

50%, 66 2/3%, 75%, and 100% Joint and Survivor Annuity (last survivor basis) and Life Annuity.

DROP

Up to 5 years; actuarially equivalent BAC-DROP

COLA

Benefit payment schedule to be designed by Board. Funding is from .50% member contributions, market return, and 50% of State Premium Tax Revenues in excess of \$200,000 (percentage increased to 100% once the Plan becomes 90% funded). A portion of excess returns on COLA assets will be transferred to the plan until the plan becomes 90% funded.

Changes Since Last Valuation

There have been no changes to plan provisions since the last valuation.

Valuation Date	October 1, 2019														
Participant and Asset Information Collected as of	October 1, 2019														
Cost Method	Entry Age Normal Cost Method, with three year direct rate smoothing for assumption transition														
Amortization Method	<p>The following amortization periods will apply for any unfunded actuarial accrued liabilities, all on an increasing payroll basis of 0.49% (as limited by 10-year average payroll growth):</p> <ul style="list-style-type: none"> - Unfunded liability as of October 1, 2001: 25 years - Benefit improvements for actives: 25 years - Benefit improvements for inactives: 15 years - Actuarial gains/losses: 20 years - Changes in actuarial assumptions: 20 years 														
Asset Valuation Method	20% Phase-In Method with a fresh start methodology as of October 1, 2019														
Interest Rates	<p>7.0% net of investment expenses</p> <p>Support for the interest rate assumption has been provided in the experience study report dated September 2019.</p>														
Annual Pay Increases	<p>2.5% inflation plus the below merit increases</p> <table border="0" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;"><u>Age</u></th> <th style="text-align: left;"><u>General</u></th> </tr> </thead> <tbody> <tr> <td><=25</td> <td>5.5%</td> </tr> <tr> <td><=30</td> <td>4.1%</td> </tr> <tr> <td><=35</td> <td>3.1%</td> </tr> <tr> <td><=40</td> <td>2.1%</td> </tr> <tr> <td><=45</td> <td>1.1%</td> </tr> <tr> <td>50</td> <td>0.0%</td> </tr> </tbody> </table> <p>The annual pay increases are based on a study of actual experience for the plan during 2011-2018. See the experience study report dated September 2019.</p>	<u>Age</u>	<u>General</u>	<=25	5.5%	<=30	4.1%	<=35	3.1%	<=40	2.1%	<=45	1.1%	50	0.0%
<u>Age</u>	<u>General</u>														
<=25	5.5%														
<=30	4.1%														
<=35	3.1%														
<=40	2.1%														
<=45	1.1%														
50	0.0%														
Expense and/or Contingency Loading	Non-investment expenses in previous year														

Mortality Rates

Pre-Retirement: Pub-2010 Generational using scale MP-2018; Females, Headcount Weighted Safety Employee Female Table, set forward 1 year; Males, Headcount Weighted Safety Below Median Employee Male Table, set forward 1 year.

Post-Retirement: Pub-2010 Generational using scale MP-2018; Females, Headcount Weighted Safety Healthy Retiree Female Table, set forward 1 year; Males, Headcount Weighted Safety Below Median Healthy Retiree Male Table, set forward 1 year

Disabled: Pub-2010; Females, 80% Headcount Weighted General Disabled Retiree Female Table / 20% Headcount Weighted Safety Disabled Retiree Female Table; Males, 80% Headcount Weighted General Disabled Retiree Male Table / 20% Headcount Weighted Safety Disabled Retiree Male Table.

10% of Active deaths are assumed to be in the line of duty

These are the same mortality rates used by the Florida Retirement System in their July 1, 2019 Actuarial Valuation Report.

Retirement Rates

<u>Age + Service</u>	<u>Rate</u>
<70	0%
70-71	25%
72-74	15%
75-79	25%
>=80	100%

The assumed retirement rates are based on a study of actuarial experience for the plan during 2011-2018. See the Experience study report dated 2019.

Disability Rates

<u>Age</u>	<u>Rate</u>
20	0.10%
30	0.14%
40	0.29%
50	0.92%

80% of disabilities are assumed to be in the line of duty.

The disability rates are based on a study of actual experience for the plan during 2011-2018. See the experience study report dated September 2019.

Withdrawal Rates

<u>Age</u>	<u>Rate</u>
<30	8.0%
<35	5.5%
<40	2.7%
<45	1.9%
<50	1.2%
<55	0.5%
>=55	0.0%

The withdrawal rates are based on a study of actual experience for the plan during 2011-2018. See the experience study report dated September 2019.

Marital Status and Ages

80% of Participants assumed to be married with wives assumed to be 3 years younger than husbands.

Contribution timing

City contribution is assumed to occur at the beginning of the fiscal year.

Changes Since Prior Valuation

The mortality rates have been updated to match the Florida Retirement System's Special Risk mortality tables defined in their actuarial valuation as of July 1, 2019.

The inflation rate, salary scale, retirement rates and withdrawal rates were adopted in accordance with the recent actuarial experience study dated September 10, 2019.

The interest rate and actuarial valuation methods were also adopted in accordance with the recent actuarial experience study dated September 10, 2019. The effect of these adoptions will be reflected over 3-years of direct rate smoothing for funding purposes.

The payroll growth assumption used to amortize the unfunded liability was decreased to 0.49% from 0.91% to comply with State Law limiting such rate to the 10-year average payroll growth.

The actuarial report also shows the necessary items required for plan reporting and any state requirements.

- Reconciliation of unfunded actuarial liability
- Statement of changes on value of assets
- Distribution of Assets
- Schedule of amortizations
- Florida State requirements
 - Comparative Summary of Principal Valuation Results
 - Comparison of Payroll Growth, salary increases and investment results
 - Requirements under Florida Statute 112.664 and F.A.C. 60T - 1.0035
 - Reserve account for benefit improvements under F.L. 99-1 and SB 172
- Accrued (Prepaid) Position
- Determination of COLA Fund Assets

Reconciliation of Unfunded Actuarial Liability

	October 1, 2019
1. Unfunded Actuarial Accrued Liability, beginning of Prior Year	\$13,727,461
2. Normal Cost	1,362,153
3. Expenses	84,759
4. Employer Contributions	(2,471,848)
5. Employee Contributions	(600,155)
6. Non-Employer Contributions	(344,320)
7. Interest	1,009,046
8. 1-year lag adjustment	116,231
9. Expected Unfunded Actuarial Accrued Liability, beginning of current Year	\$12,883,327
10. Accumulated Reserve Adjustment	\$0
11. Liability changes due to:	
(a) Amendments	\$0
(b) Assumptions	6,042,962
(c) Asset Funding Methods	1,927,282
(d) Actuarial Experience (Gain)/Loss	1,182,361
(e) Total	\$9,152,605
12. Unfunded Actuarial Accrued Liability, beginning of Current Year	\$22,035,932

Statement of Changes on Value of Assets

Additions

Contributions:

Employer

\$2,495,113

\$2,299,394

Member

736,600

638,372

Nonemployer contributing entity

472,989

488,640

Total contributions

\$3,704,702

\$3,426,406

Investment income

Net increase in fair value of investments

\$4,219,402

\$957,965

Interest and dividends

1,094,620

1,263,523

Less investment expense, other than from securities lending

(226,259)

(208,534)

Net income other than from securities lending

\$5,087,763

\$2,012,954

Securities lending income

0

0

Less securities lending expense

0

0

Net income from securities lending

0

0

Net investment income

\$5,087,763

\$2,012,954

Other

0

157,698

Total additions

\$8,792,465

\$5,597,058

Deductions

Benefit payments, including refunds of member contributions

\$3,449,899

\$2,981,313

Administrative expense

85,835

84,759

Other

0

0

Total deductions

\$3,535,734

\$3,066,072

Net increase in market value

\$5,256,731

\$2,530,986

Market Value as of

Beginning of year

57,954,285

63,211,016

End of year

\$63,211,016

\$65,742,002

City of Ocala Firefighters' Retirement Plan
Actuarial Valuation as of October 1, 2019
Other Measurements

	September 30, 2018	September 30, 2019
Distribution of Assets		
Cash and deposits	\$1,145,673	\$1,294,427
Securities lending cash collateral	0	0
Total cash	\$1,145,673	\$1,294,427
Receivables:		
Investment income	\$115,078	\$70,604
Other	0	93,782
Total receivables	\$115,078	\$164,386
Investments:		
Mutual Funds	\$33,413,870	\$34,497,680
Common Stock	0	0
Fixed Income	11,150,967	12,017,881
Domestic Equities	0	0
International Equities	9,275,285	9,381,433
Real Estate Fund	8,151,040	8,450,170
Total investments	\$61,991,162	\$64,347,164
Total assets	\$63,251,913	\$65,805,977
Liabilities		
Payables		
Investment management fees	\$40,897	\$44,615
Due to broker for investments purchased	0	0
Collateral payable for securities lending	0	0
Other	0	19,360
Total liabilities	\$40,897	\$63,975
Total	\$63,211,016	\$65,742,002
Reserved Assets		
COLA Fund	(\$5,357,701)	(\$5,637,749)
DROP Account	(2,497,664)	(4,128,560)
State Reserve Account	0	0
Accrued (Prepaid) Position	(768,968)	(747,846)
Assets available for benefits	\$54,586,684	\$55,227,847

Information to Comply with Florida 60T-1.003(4)(i)

Comparative Summary of Principal Valuation Results

	10/1/2019 7.00% (assumption & plan changes)	10/1/2019 7.50% (prior methods & assumptions)	10/1/2018 7.50%
Participant Data			
Active members	123	123	124
Total annual payroll	\$7,705,244	\$7,366,658	\$7,657,531
Members in DROP	13	13	10
Total Annualized Benefit	\$812,211	\$812,211	\$553,235
Retired members and beneficiaries	72	72	66
Total annualized benefit	\$2,637,428	\$2,637,428	\$2,278,545
Disabled members receiving benefits	10	10	10
Total annualized benefit	\$287,165	\$287,165	\$286,532
Terminated vested members	3	3	3
Total annualized benefit	\$104,324	\$104,324	\$104,324
Assets			
Actuarial value of assets	\$55,227,847	\$55,227,847	\$53,597,970
Market value of assets	\$55,227,847	\$55,227,847	\$54,586,682

Information to Comply with Florida 60T-1.003(4)(i)

Comparative Summary of Principal Valuation Results (continued)

	10/1/2019 7.00% (assumption & plan changes)	10/1/2019 7.50% (prior methods & assumptions)	10/1/2018 7.50%
Liabilities, present value of all future expected benefit payments			
Active members			
Retirement benefits	\$40,389,620	\$36,649,599	\$39,854,401
Vesting benefits	1,427,842	1,386,144	1,375,924
Disability benefits	1,907,891	2,304,094	2,382,064
Death benefits	263,549	440,803	452,766
Return of contribution	240,590	174,168	152,864
Total	<u>\$44,229,492</u>	<u>\$40,954,808</u>	<u>\$44,218,019</u>
Terminated vested members	761,459	713,040	661,783
Retired members and beneficiaries	40,247,967	39,431,557	32,191,708
Disabled members	<u>2,923,472</u>	<u>2,806,141</u>	<u>2,849,804</u>
Total	\$88,162,390	\$83,905,546	\$79,921,314
Liabilities due and unpaid	\$0	\$0	\$0
Actuarial accrued liability	\$77,263,779	\$71,220,817	\$67,325,431
Unfunded actuarial accrued liability	\$22,035,932	\$15,992,970	\$13,727,461

Information to Comply with Florida 60T-1.003(4)(i)

Comparative Summary of Principal Valuation Results (continued)

	10/1/2019 7.00% (assumption & plan changes)	10/1/2019 7.50% (prior methods & assumptions)	10/1/2018 7.50%
Actuarial present value of accrued benefits			
Statement of actuarial present value of all accrued benefits			
Vested accrued benefits			
Inactive members and beneficiaries	\$43,932,898	\$42,950,738	\$35,703,295
Active members	21,995,075	18,435,339	20,892,911
Total value of all vested accrued benefits	\$65,927,973	\$61,386,077	\$56,596,206
Non-vested accrued benefits	3,631,875	946,250	1,334,333
Total actuarial present value of all accrued benefits	\$69,559,848	\$62,332,327	\$57,930,539
Statement of changes in total actuarial present value of all accrued benefits (ASC 960)			
Actuarial present value of accrued benefits, beginning of year	\$57,930,539	\$57,930,539	\$55,162,403
Increase (decrease) during year			
Benefits accumulated	\$3,148,089	\$3,148,089	\$2,225,224
Plan amendment	0	0	0
Changes in actuarial assumptions	7,227,521	0	(17,337)
Interest	4,235,012	4,235,012	4,010,148
Benefits paid	(2,981,313)	(2,981,313)	(3,449,899)
Other changes	0	0	0
Net increase (decrease)	\$11,629,309	\$4,401,788	\$2,768,136
Actuarial present value of accrued benefits, end of year	\$69,559,848	\$62,332,327	\$57,930,539

Information to Comply with Florida 60T-1.003(4)(i)

Comparative Summary of Principal Valuation Results (continued)

	10/1/2019 7.00% (assumption & plan changes)	10/1/2019 7.50% (prior methods & assumptions)	10/1/2018 7.50%
Pension cost			
Normal Cost	\$1,364,394	\$1,294,815	\$1,362,153
Member contributions	\$565,080	\$547,911	\$572,422
Expected plan sponsor contribution	\$3,469,633	\$2,706,156	\$2,627,755
As % of payroll	42.48%	33.13%	32.37%
Member Contributions as % of payroll	6.92%	6.71%	7.48%
Past contributions			
Required plan sponsor contribution	9/30/2019 \$2,471,848		9/30/2018 \$2,545,029
Required member contribution	\$600,155		\$698,443
Actual contributions made by:			
Plan's sponsor	\$2,299,394		\$2,495,113
Members	\$600,155		\$698,443
Other	\$344,320		\$336,494
Net actuarial gain (loss) (if applicable)	(\$1,182,361)	(\$1,182,361)	(\$35,698)
Other disclosures (where applicable)			
Present value of active member			
Future salaries at attained age	\$60,244,740	\$72,264,725	\$71,610,000
Future contributions at attained age	\$4,261,058	\$5,209,701	\$5,161,770
Accumulated Member Contributions	\$5,897,929	\$5,897,929	\$6,398,915

Information to Comply with Florida 60T-1.003(4) (i)

Historical Salary Increases and Asset Performance

September 30, 2019

Year Ending	Payroll Growth	Salary Growth	Expected Salary Growth	Asset Return (Market)	Asset Return (Actuarial)	Asset Return (Expected)
9/30/2019	(3.80%)	4.73%	5.48%	3.42%	6.60%	7.00%
9/30/2018	11.20%	9.88%	5.27%	8.93%	8.17%	7.50%
9/30/2017	(6.10%)	0.64%	5.23%	11.05%	7.86%	7.50%
9/30/2016	12.70%	13.97%	5.25%	10.33%	7.02%	7.75%
9/30/2015	3.10%	5.59%	5.31%	0.05%	6.07%	7.75%
9/30/2014	(1.30%)	1.10%	5.40%	9.50%	7.86%	7.75%
9/30/2013	(8.20%)	(1.00%)	5.50%	13.20%	7.42%	7.75%
9/30/2012	(3.40%)	0.30%	5.40%	17.90%	6.00%	7.75%
9/30/2011	4.80%	3.10%	5.40%	(0.10%)	3.70%	7.75%
9/30/2010	(4.10%)	1.50%	5.80%	9.10%	4.60%	8.00%
Averages						
3-year				7.75%	7.54%	
5-year				6.67%	7.14%	
10-year	0.49%			8.20%	6.52%	
20-year				5.50%	5.34%	

Amortization of Unfunded Actuarial Accrued Liability

	UAAL	Amortization
10/1/2019	\$22,035,932	\$2,534,250
10/1/2020	\$20,866,802	\$2,546,664
10/1/2021	\$19,602,548	\$2,559,144
10/1/2022	\$18,236,444	\$2,461,515
10/1/2038	\$854,565	\$854,565

Other Measurements

**City of Ocala Firefighters' Retirement Plan
Actuarial Valuation as of October 1, 2019**

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

	GASB 67/68	- 200 bp ²	Funding Rate ²	October 1, 2019 + 200 bp ²
	7.50%	5.00%	7.00%	9.00%
Total pension liability				
Service Cost	\$1,455,310	\$1,455,310	\$1,455,310	\$1,455,310
Interest	5,479,962	3,700,023	5,180,032	6,660,042
Benefit changes	0	0	0	0
Difference between expected and actual experience	1,406,892	9,182,777	9,182,777	9,182,777
Changes in assumptions	165,836	25,031,720	165,836	(17,302,781)
Benefit payments	(2,981,313)	(2,981,313)	(2,981,313)	(2,981,313)
Contribution refunds	0	0	0	0
Net change in pension liability	\$5,526,687	\$36,388,517	\$13,002,642	(\$2,985,965)
Total pension liability, beginning of year	\$73,101,503	\$74,035,810	\$74,035,810	\$74,035,810
Total pension liability, end of year	\$78,628,190	\$110,424,327	\$87,038,452	\$71,049,845
Plan fiduciary net position				
Contributions - Employer	\$2,299,394	\$2,299,394	\$2,299,394	\$2,299,394
Contributions - State	488,640	488,640	488,640	488,640
Contributions - Member	638,372	638,372	638,372	638,372
Net investment income	2,012,954	2,012,954	2,012,954	2,012,954
Benefit payments	(2,981,313)	(2,981,313)	(2,981,313)	(2,981,313)
Contribution refunds	0	0	0	0
Administrative expense	(84,759)	(84,759)	(84,759)	(84,759)
Other	157,698	157,698	157,698	157,698
Net change in plan fiduciary net position	\$2,530,986	\$2,530,986	\$2,530,986	\$2,530,986
Plan fiduciary net position, beginning of year	\$63,211,016	\$63,211,016	\$63,211,016	\$63,211,016
Plan fiduciary net position, end of year	\$65,742,002	\$65,742,002	\$65,742,002	\$65,742,002
Net pension liability/(asset)	\$12,886,188	\$44,682,325	\$21,296,450	\$5,307,843
Funded ratio	83.61%	59.54%	75.53%	92.53%
Years that Assets support expected benefit payments	18	14	17	22
Estimated city contribution				
Annual dollar value	\$3,469,633	\$5,705,684	\$3,469,633	\$1,706,258
Percentage of payroll	42.48%	69.86%	42.48%	20.89%

¹ Does not include DROP assets and liabilities

² Based on valuation assumption with the following changes

- interest rate (as noted)
- update to FRS Mortality
- adjustments as recommended in 2019 experience study

Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

October 1, 2019

Sustainment of Expected Benefit Payments

Mortality Interest FRS Special Risk Generational 5.00%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$65,742,002	\$3,077,961	\$8,468,855
2	60,351,108	2,903,835	4,604,996
3	58,649,947	2,812,932	4,841,647
4	56,621,232	2,702,918	5,189,024
5	54,135,126	2,571,334	5,483,764
6	51,222,696	2,419,275	5,744,474
7	47,897,497	2,245,447	6,050,918
8	44,092,026	2,050,303	6,248,152
9	39,894,177	1,834,900	6,471,278
10	35,257,799	1,598,240	6,667,319
11	30,188,720	1,340,225	6,852,013
12	24,676,932	1,058,432	7,103,241
13	18,632,123	748,975	7,395,445
14	11,985,653	411,455	7,605,880
15	4,791,228		7,814,281

Accrued/(Prepaid) Position

1. <u>Accrued/(Prepaid) Position 10/01/2018</u>		(\$768,968)
2. <u>Costs</u>		
Minimum Required City Contribution (2018/2019 Plan Year)	\$2,471,848	
State Contribution	\$200,000	
Interest to September 30, 2019	\$0	
Total Costs with Interest		\$2,671,848
3. <u>Contributions</u>		
City Biweekly Contributions	(\$2,299,394)	
State Contribution September 24, 2019	(\$200,000)	
Interest to September 30, 2019	(\$93,660)	
Total Contributions with Interest		(\$2,593,054)
4. <u>Interest on Beginning of Year Amount</u>		(\$57,673)
5. <u>Accrued/(Prepaid) Position 10/01/2019</u>		(\$747,846)

Determination of COLA Fund Assets

	<u>September 30, 2019</u>
COLA Fund Assets, beginning of Prior Year	\$5,357,701
Distributions	(\$97,362)
Investment Return	\$194,873
Asset Transfers	\$0
Member Contributions	\$38,217
State Contribution Allocation	<u>\$144,320</u>
COLA Fund Assets, beginning of current year	\$5,637,749