

City of Jacksonville Public Safety
Defined Contribution Plan
Disability and Survivorship Benefits

Actuarial Valuation and Review as of October 1, 2022



This report has been prepared at the request of the Defined Contribution Plan Advisory Committee and Defined Contribution Disability and Survivorship Panel to assist in administering the Plan. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Committee and Panel and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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December 18, 2023

Defined Contribution Plan Advisory Committee
Defined Contribution Disability and Survivorship Panel
City of Jacksonville Public Safety Defined Contribution Plan Disability and Survivorship Benefits
117 West Duval Street, Suite 330
Jacksonville, FL 32202

Dear Committee and Panel Members:

We are pleased to submit this Actuarial Valuation and Review as of October 1, 2022. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for fiscal 2024.

Statement by Enrolled Actuary: This actuarial valuation and 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.

The actuarial calculations were directed under the supervision of Jeffrey S. Williams. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal

A handwritten signature in black ink, appearing to read "Jeff S. Williams", written over a horizontal line.

Jeffrey S. Williams, FCA, ASA, MAAA
Vice President and Consulting Actuary
Enrolled Actuary No. 23-07009

Table of Contents

Section 1: Actuarial Valuation Summary.....	5
Purpose and basis.....	5
Valuation highlights	6
Summary of key valuation results.....	7
Important information about actuarial valuations.....	8
Section 2: Actuarial Valuation Results	10
Actuarial experience	10
Actuarially determined contribution	12
Risk.....	14
GFOA funded liability by type	15
Section 3: Supplemental Information	16
Exhibit A: Table of Plan Demographics	16
Exhibit B: Summary Statement of Income and Expenses on a Market Value Basis	17
Exhibit C: Table of Amortization Bases	18
Exhibit D: Supplementary State of Florida Information Summary of Salary Changes.....	19
Exhibit E: Supplementary State of Florida Information Comparative Summary of Principal Valuation Results	20
Section 4: Actuarial Valuation Basis	22
Exhibit I: Actuarial Assumptions, Methods and Models.....	22
Exhibit II: Summary of Plan Provisions.....	28
Section 5: GASB Information	29
General information about the pension plan.....	29
Net pension liability.....	29
Determination of discount rate.....	31

Table of Contents

Discount rate sensitivity.....	31
Schedule of changes in Net Pension Liability – Last two fiscal years	32
Pension expense	35
Schedule of employer contributions	36
Appendix A: Definition of Pension Terms	37

Section 1: Actuarial Valuation Summary

Purpose and basis

This report was prepared by Segal to present a valuation of the Plan as of October 1, 2022. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to provide information for required disclosures under Governmental Accounting Standards Board (GASB) Statements No. 67 and 68. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the Plan's benefit obligations. 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; and changes in plan provisions or applicable law.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Plan, as administered by the Committee and Panel;
- The characteristics of covered active participants and retired participants and beneficiaries as of September 30, 2022, provided by the Retirement Administrative Office;
- The assets of the Plan as of September 30, 2022, provided by the City's Finance Department;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. and
- Subject to the requirements of Part VII, Chapter 112, Florida Statutes.

Section 1: Actuarial Valuation Summary

Valuation highlights

1. The City established Disability and Survivor Benefits under the City of Jacksonville Public Safety Employees Defined Contribution Plan effective October 1, 2017. It is our understanding that the inclusion of disability and survivor benefits subjects the Plan to the State of Florida's minimum funding requirements for retirement plans and that this Plan is a defined benefit plan subject to the applicable laws of the State of Florida. This October 1, 2022 valuation is the third actuarial valuation for the updated plan.
2. The actuarial determined contribution (ADC) calculated as of October 1, 2022 is adjusted for timing and projected to the next fiscal year; the ADC for the fiscal year beginning October 1, 2023 is \$1,010,178, or 1.47% of projected payroll.
3. Actuarial assumptions used are those from the experience study for the period October 1, 2012 – September 30, 2017 for the City of Jacksonville Corrections Officers' Retirement Plan (CORP) and from the October 1, 2022 actuarial valuation of the City of Jacksonville Police and Fire Pension Fund.
4. The following actuarial assumptions were approved by the Board and changed with this valuation:
 - The net investment return assumption was changed from 6.625% to 6.50%
 - The return assumption change increased the actuarial accrued liability by 2.21% and increased the total normal cost by 2.48%. The actuarial determined contribution increased by \$29,396 as a result of this change.
5. The discount rate was set equal to the CORP discount rate in the 2021 valuation with the understanding that the Plan's assets will be invested along with the City's other pension plan assets. If the assets are not going to be invested a return to the previously used 20-year municipal bond rate will need to be considered.
6. The amortization period used for the amortization of unfunded actuarial accrued liability is 25 years; this is the period for new bases established in the CORP valuation as of October 1, 2022. Amortization was calculated on a level percent of pay basis assuming an average payroll growth of 1.25%, the same assumption as used for CORP.
7. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. The current contribution rates need to be enhanced to meet this standard. However, currently, the total unfunded liability of the plan is small relative to plan payroll.
8. It is important to note that this actuarial valuation is based on plan assets as of September 30, 2022. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after September 30, 2022 due to COVID-19. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

		2023	2022	2021
Contributions for fiscal year beginning October 1:	- Actuarially determined contribution (ADC) - ADC as a percent of payroll - Actual employer contributions	\$1,010,178 1.47% - -	\$695,686 1.26% - -	\$1,614,696 3.87% 216,000
Actuarial accrued liability for plan year beginning October 1:	- Retired participants and beneficiaries - Active participants - Total actuarial accrued liability - Normal cost, including administrative expenses		\$452,062 2,005,283 2,457,345 1,097,057	\$421,671 1,062,028 1,483,699 796,764
Assets for plan year beginning October 1:	- Market value of assets (MVA) - Actuarial value of assets (AVA) - Actuarial value of assets as a percentage of market value of assets		\$1,425,000 1,425,000 100.00%	\$1,026,000 1,026,000 100.00%
Funded status for plan year beginning October 1:	- Unfunded actuarial accrued liability on market value of assets - Funded percentage on AVA basis - Amortization period on an AVA basis		\$1,032,345 57.99% 25	\$457,699 69.15% 26
Key assumptions	- Net investment return - Payroll growth for amortization purposes		6.50% 1.25%	6.625% 1.25%
Demographic data for plan year beginning October 1:	- Number of retired participants and beneficiaries - Number of active participants - Covered payroll - Average payroll - Projected payroll for next fiscal year		3 1,344 \$67,861,643 50,492 68,709,914	3 1,180 \$54,740,577 46,390 55,424,834

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal relies on a number of input items. These include:

Plan provisions	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant information	An actuarial valuation for a plan is based on data provided to the actuary by the City. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Financial information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the City. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The actuarial valuation is prepared at the request of the Committee and Panel. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.

If the Committee or Panel is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan provisions, but they may be subject to alternative interpretations. The Committee and Panel should look to their other advisors for expertise in these areas.

While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.

Segal's report shall be deemed to be final and accepted by the Committee and Panel upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

As Segal has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

Section 2: Actuarial Valuation Results

Actuarial experience

Assumptions should consider experience and should be based on reasonable expectations for the future.

Each year actual experience is compared to that projected by the assumptions. Differences are reflected in the actuarial valuation.

Assumptions are not changed if experience is believed to be a short-term development that will not continue over the long term. On the other hand, if experience is expected to continue, assumptions are changed.

Actuarial Experience for Year Ended September 30, 2022

1	Net loss from investments	-\$80,156
2	Net loss from employer contributions	-485,236
3	Net gain from other experience	<u>40,922</u>
4	Net experience loss: 1 + 2 + 3	-\$524,470

Sources of experience variation

Experience variation is the difference between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- Mortality experience (more or fewer than expected deaths)
- The extent of turnover among participants
- The number of disability retirements (more or fewer than projected)
- Salary increases (greater or smaller than projected)

Section 2: Actuarial Valuation Results

Unfunded Actuarial Accrued Liability

Development of Unfunded Actuarial Accrued Liability for Year Ended September 30, 2022

1	Unfunded actuarial accrued liability at beginning of year		\$457,699
2	Employer normal cost at beginning of year		632,542
3	Actuarially determined contribution at beginning of year		-663,746
4	Interest on 1, 2 & 3		<u>28,256</u>
5	Expected unfunded actuarial accrued liability		\$454,751
6	Changes due to:		
	(a) Net experience loss	\$524,470 ¹	
	(b) Assumptions	<u>53,124</u>	
	Total changes		<u>577,594</u>
7	Unfunded actuarial accrued liability at end of year		\$1,032,345

¹ Consisting of a \$485,236 loss on contributions less than the actuarially determined contribution and a \$39,234 loss on other experience

Section 2: Actuarial Valuation Results

Actuarially determined contribution

The actuarially determined contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. As of October 1, 2022, the actuarially determined contribution payable for the fiscal year beginning October 1, 2023 is \$1,010,178, or 1.47% of projected payroll.

The contribution requirement as of October 1, 2022 are based on the data described in Exhibit A, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

Actuarially Determined Contribution

		2022		2021	
		Amount	% of Projected Payroll	Amount	% of Projected Payroll
1	Total normal cost	\$1,066,057	1.55%	\$765,764	1.38%
2	Administrative expenses	31,000	0.05%	31,000	0.06%
3	Expected employee contributions	<u>-203,585</u>	<u>-0.30%</u>	<u>-164,222</u>	<u>-0.30%</u>
4	Employer normal cost: (1) + (2) + (3)	\$893,472	1.30%	\$632,542	1.14%
5	Actuarial accrued liability	\$2,457,345		\$1,483,699	
6	Actuarial value of assets	<u>1,425,000</u>		<u>1,026,000</u>	
7	Unfunded actuarial accrued liability: (5) - (6)	\$1,032,345		\$457,699	
8	Payment on projected unfunded actuarial accrued liability	70,934	0.10%	31,204	0.06%
9	Adjustment for timing ¹	45,772	0.07%	31,940	0.06%
10	Actuarially determined contribution: (4) + (8) + (9)	<u>\$1,010,178</u>	<u>1.47%</u>	<u>\$695,686</u>	<u>1.26%</u>
11	Projected payroll	\$68,709,914		\$55,424,834	

¹ Adjusted for timing and projected to next fiscal year; actuarially determined contributions are assumed to be paid at the end of every month.

Section 2: Actuarial Valuation Results

Reconciliation of actuarially determined contribution

Reconciliation of Actuarially Determined Contribution
from October 1, 2022 to October 1, 2023

	Amount
1 Actuarially determined contribution as of October 1, 2022	\$695,686
2 Effect of expected change in amortization payment due to payroll growth	409
3 Effect of change in other actuarial assumptions	29,396
4 Effect of investment loss	5,837
5 Effect of other gains and losses on accrued liability	-2,980
6 Net effect of other changes, including composition and number of participants	<u>281,830</u>
7 Total change	\$314,492
8 Actuarially determined contribution as of October 1, 2023	\$1,010,178

Section 2: Actuarial Valuation Results

Risk

Since the actuarial valuation results are dependent on a given set of assumptions and data as of a specific date, there is a risk that emerging results may differ significantly as actual experience differs from the assumptions.

This report does not contain a detailed analysis of the potential range of future measurements but does include a brief discussion of some risks that may affect the Plan. A more detailed assessment would provide the Trustees with a better understanding of the risks inherent in the Plan. This assessment may include scenario testing, sensitivity testing, stress testing and stochastic modeling.

- Investment Risk (the risk that returns will be different than expected)

The Plan's assets are currently not invested but will ultimately be invested along with the GERP and CORP assets. Therefore, the Plan does not currently bear any investment risk.

- Longevity Risk (the risk that mortality experience will be different than expected)

The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the actuarially determined contribution. It is not yet known what long-term impact the COVID-19 pandemic may have on the Plan's mortality experience.

- Contribution Risk (the risk that actual contributions will be different from actuarially determined contribution)

Plan contributions are set by statute. The Plan's funding policy requires payment of 0.30% of payroll. As shown in this report, this is not enough to cover the City's contribution requirement. As such, we strongly urge the City to begin contributing the actuarial determined contribution.

- Demographic Risk (the risk that participant experience will be different than assumed)

Examples of this risk include:

- More or less active participant turnover than assumed.
- More or less disabilities than assumed.
- More or less deaths than assumed.

Section 2: Actuarial Valuation Results

GFOA funded liability by type

The Actuarial Accrued Liability represents the present value of benefits earned, calculated using the Plan's actuarial cost method. The Actuarial Value of Assets reflects the financial resources available to liquidate the liability. The portion of the liability covered by assets reflects the extent to which accumulated plan assets are sufficient to pay future benefits, and is shown for liabilities associated with employee contributions, pensioner liabilities, and other liabilities. The Government Finance Officers Association (GFOA) recommends that the funding policy aim to achieve a funded ratio of 100 percent.

GFOA Funded Liability by Type as of September 30

	2022	2021
Actuarial accrued liability (AAL)		
Retirees and beneficiaries	\$452,062	\$421,671
Active members	<u>2,005,283</u>	<u>1,062,028</u>
Total	\$2,457,345	\$1,483,699
Actuarial value of assets	1,425,000	1,026,000
Cumulative portion of AAL covered		
Retirees and beneficiaries	100.00%	100.00%
Active members	48.52%	56.90%

Section 3: Supplemental Information

Exhibit A: Table of Plan Demographics

	Year Ended September 30		Change From Prior Year
Category	2022	2021	
Active participants in valuation:			
Number	1,344	1,180	13.9%
Average age	30.2	29.6	0.6
Average years of service	2.6	2.1	0.5
Covered payroll	\$67,861,643	\$54,740,577	24.0%
Average payroll	\$50,492	\$46,390	8.8%
Disabled participants:			
Number in pay status	0	0	N/A
Beneficiaries:			
Number in pay status	3	3	0.0%
Average age	45.0	44.0	1.0
Average monthly benefit	\$688	\$688	0.0%

Section 3: Supplemental Information

Exhibit B: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended September 30, 2022	Year Ended September 30, 2021
Net assets at market value at the beginning of the year	\$1,026,000	\$725,144
Contribution and other income:		
Employer contributions	\$216,000	\$160,000
Employee contributions	214,000	165,000
Less administrative expenses	<u>0</u>	<u>0</u>
<i>Net contribution income</i>	<i>\$430,000</i>	<i>\$325,000</i>
Investment income:		
• Asset adjustment	\$1,000	-\$1,144
Less investment fees	<u>0</u>	<u>0</u>
<i>Net investment income</i>	<i><u>\$1,000</u></i>	<i><u>-\$1,144</u></i>
Total income available for benefits	\$431,000	\$323,856
Less benefit payments:	-\$32,000	-\$23,000
Change in market value of assets	\$399,000	\$300,856
Net assets at market value at the end of the year	\$1,425,000	\$1,026,000

Section 3: Supplemental Information

Exhibit C: Table of Amortization Bases

Type	Date Established	Initial Period	Initial Amount	Annual Payment	Years Remaining	Outstanding Balance
Initial liability	10/01/2020	27	\$1,744,501	\$116,645	25	\$1,697,592
Change in assumptions	10/01/2021	26	-2,131,340	-145,506	25	-2,117,611
Experience loss	10/01/2021	26	880,441	60,107	25	874,770
Change in assumptions	10/01/2022	25	53,124	3,650	25	53,124
Experience loss	10/01/2022	25	524,470	36,038	25	524,470
Total				\$70,934		\$1,032,345

Section 3: Supplemental Information

Exhibit D: Supplementary State of Florida Information Summary of Salary Changes

Year Ended September 30	Total Salary	Percent Change in Total Salary	Percent Change in Salary of Employees Remaining Active	Expected Percent Change in Salary of Employees Remaining Active
2020	\$41,183,386	N/A	N/A	N/A
2021	54,740,577	32.92%	7.73%	10.76%
2022	67,861,643	23.97%	12.01%	8.67%

Section 3: Supplemental Information

Exhibit E: Supplementary State of Florida Information Comparative Summary of Principal Valuation Results

	<u>Year Ended September 30, 2022</u>		<u>Year Ended September 30, 2021</u>
	<u>New Assumptions</u>	<u>Old Assumptions</u>	
Participant data			
• Active members	1,344	1,344	1,180
• Total annual payroll	\$67,861,643	\$67,861,643	\$54,740,577
• Retired members and beneficiaries	3	3	3
• Total annualized benefit	\$24,780	\$24,780	\$24,780
Actuarial value of assets	\$1,425,000	\$1,425,000	\$1,026,000
Present value of all future expected benefit payments:			
• Active members:			
• Disability benefits	\$11,262,845	\$10,898,578	\$8,644,266
• Death benefits	<u>5,501,005</u>	<u>5,322,711</u>	<u>4,568,197</u>
• Total	\$16,763,850	\$16,221,289	\$13,212,463
• Retired members and beneficiaries	<u>452,062</u>	<u>443,480</u>	<u>421,671</u>
Total	\$17,215,912	\$16,664,769	\$13,634,134

Section 3: Supplemental Information

Exhibit E: Supplementary State of Florida Information Comparative Summary of Principal Valuation Results

	Year Ended September 30, 2022	Year Ended September 30, 2021
Unfunded actuarial accrued liability	\$1,032,345	\$457,699
Actuarial present value of accrued benefits		
Vested accrued benefits		
Active members	\$184,489	\$74,515
Retirees and beneficiaries	452,062	421,671
Nonvested active members	<u>\$9,090,626</u>	<u>\$6,887,568</u>
Total	\$9,727,176	\$7,383,754
Pension cost		
Normal cost	\$1,097,057	\$796,764
Expected employee contributions	-203,585	-164,222
Level % of payroll payment to amortize unfunded actuarial accrued liability	70,934	31,204
Total minimum annual cost payable monthly at valuation date	964,406	663,746
Total employer cost projected to budget year	1,010,178	695,686
Projected payroll	68,709,914	55,424,834
As % of projected payroll	1.47%	1.26%
Present value of active members' future salaries at attained age	\$972,540,484	\$894,526,354
Present value of active members' future contributions at attained age	2,917,621	2,683,579

Section 4: Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions, Methods and Models

Rationale for Assumptions	The information and analysis used in selecting each demographic assumption for Corrections participants that has a significant effect on this actuarial valuation is shown in the Corrections Officers' Retirement Plan Experience Study Report for the five-year period ended September 30, 2017. For Police and Fire participants, all demographic assumptions are the same as those used in the Police and Fire Pension Fund Actuarial Valuation as of October 1, 2021. These assumptions were developed by another actuary on behalf of the Board of the Police and Fire Pension Fund.	
Net Investment Return:	6.50% The net investment return assumption was chosen by the Retirement System's Board of Trustees with input from the actuary. The assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment.	
Salary Increases (including inflation) for Police and Fire:	Service	Rate (%)
	0-3	11.50
	4	9.75
	5	6.50
	6-7	5.00
	8 - 10	4.25
	11 - 14	3.65
	15 - 18	3.35
	19+	2.75

Section 4: Actuarial Valuation Basis

Salary Increases (including inflation) for Corrections:	Service	Rate (%)
	0	7.50
	1	6.50
	2	6.00
	3	5.50
	4	5.25
	5	5.00
	6	4.50
	7 – 10	4.00
	11 – 14	3.75
	15+	2.80
Payroll Growth:	1.25% used for amortization of unfunded liability amounts, based on the requirement in the Florida Statutes that the assumption for this purpose may not exceed the average annual growth for the preceding ten years. Negotiated pay level increases and pay of DC Plan participants were taken into consideration in setting a payroll growth that is expected to be achieved and maintained on a ten-year average basis. The Fund's long-term payroll growth assumption is equal to the inflation assumption of 2.50%.	
Mortality Rates for Police and Fire:	<i>Healthy pre-retirement:</i>	FRS pre-retirement mortality tables for special risk personnel, with no set forward, projected generationally from 2010 with Scale MP2018
	<i>Healthy post-retirement:</i>	FRS healthy post-retirement mortality tables for special risk personnel, with no set forward, projected generationally from 2010 with Scale MP2018
	<i>Disabled:</i>	FRS disabled mortality tables for personnel other than special risk, with no set forward, projected generationally from 2010 with Scale MP2018 The FRS tables for special risk personnel, reasonably reflect the healthy annuitant mortality experience of the Police and Fire Pension Fund as of the measurement date. The FRS disabled mortality tables for special risk personnel reasonably reflect the disabled annuitant mortality experience as of the measurement date. No significant experience exists for the Public Safety Defined Contribution Plan and the experience of the legacy plan has been used as a proxy.

Section 4: Actuarial Valuation Basis

Mortality Rates for Corrections:	Healthy pre-retirement:	FRS pre-retirement mortality tables for special risk personnel, set forward 2 years, projected generationally from 2010 with Scale MP2018	
	Healthy post-retirement:	FRS healthy post-retirement mortality tables for special risk personnel, set forward 2 years, projected generationally from 2010 with Scale MP2018	
	Disabled:	FRS disabled mortality tables for personnel other than special risk, with no set forward, projected generationally from 2010 with Scale MP2018 The FRS tables for special risk personnel, set forward 2 years, reasonably reflect the healthy annuitant mortality experience of the Corrections Officers' Retirement Plan as of the measurement date. The FRS disabled mortality tables for special risk personnel reasonably reflect the disabled annuitant mortality experience as of the measurement date. No significant experience exists for the Public Safety Defined Contribution Plan and the experience of the legacy plan has been used as a proxy.	
Disability Rates for Police and Fire:		Age	Rate (%)
		20	0.03
		25	0.03
		30	0.03
		35	0.03
		40	0.04
		45	0.08
		50	0.19
		55	0.38
		60	0.76
	65	0.00	
100% of disabilities are assumed to be non-service incurred.			

Section 4: Actuarial Valuation Basis

Disability Rates for Corrections:

Age	Rate (%)
20	0.02
25	0.02
30	0.03
35	0.04
40	0.06
45	0.09
50	0.15
55	0.24
60	0.38
65	0.00

100% of disabilities are assumed to be non-service incurred.

Turnover Rates for Police and Fire:

Age	Rate (%)
20	1.60
25	1.60
30	1.60
35	1.20
40	0.90
45	0.90
50	0.90
55	0.50
60	0.50
65	0.50

Turnover Rates for Corrections:

Service	Rate (%)
0-4	12.00
4-7	7.00
8	4.00
9	3.00
10	2.00
11+	1.00

Section 4: Actuarial Valuation Basis

Retirement Rates for Police and Fire:	100% retirement assumed at age 65 with 5 years of service; for ages less than 65, retirement rate assumptions are based on service as follows:						
	Service						
	Age	20	21	22-23	24-28	29	30+
	Under 50	45%	25%	15%	25%	50%	100%
	50 - 54	55%	30%	30%	25%	50%	100%
	55 - 59	60%	30%	30%	25%	50%	100%
	60 & Over	100%	50%	50%	50%	50%	100%
	Note: For the purposes of applying retirement rates, participants are treated as being eligible for retirement based on the eligibility provisions from the Police and Fire Pension Fund and Correction Officers Retirement Plan. Rates first apply at 20 years of Credited Service						
Retirement Rates for Corrections:	100% retirement assumed at age 65 with 5 years of service; for ages less than 65, retirement rate assumptions are based on service as follows:						
	ServiceRate (%)						
	Under 200%						
	2050						
	21 – 2440						
	25 – 2750						
	28 & Over100						
	Note: For the purposes of applying retirement rates, participants are treated as being eligible for retirement based on the eligibility provisions from the Police and Fire Pension Fund and Correction Officers Retirement Plan. Rates first apply at the earliest of age 65 with five years of Credited Service or any age with 20 years of Credited Service						
Unknown Data for Participants:	Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.						
Administrative Expenses:	\$31,000 for plan year beginning October 1, 2022						
Family Composition:	60% of participants are assumed to be married. None are assumed to have dependent children. Females are assumed to be three years younger than their spouses.						
Actuarial Value of Assets:	Market value of assets						

Section 4: Actuarial Valuation Basis

Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis based on each member's benefit accrual rate and are allocated by compensation. Normal Cost is not included for participants who are assumed to retire with 100% certainty in the upcoming plan year based on the retirement assumptions.
Change in Actuarial Assumptions:	The following changes in actuarial assumptions occurred with this valuation: • The discount rate was lowered from 6.625% to 6.50%

Section 4: Actuarial Valuation Basis

Exhibit II: Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year:	October 1 through September 30	
2012	\$0	
Disability:	• Age Requirement • Service Requirement • Amount	- None - None 60% of final compensation
Spouse's Pre-Retirement Death Benefit:	• Age Requirement • Service Requirement • Amount	- None - Two years of Credited Service 45% of final compensation plus 1.5% per year of service in excess of 20
Cost of Living Adjustment:	On the January 1 st following the initial benefit commencement date, and on each January 1 st thereafter, the regular benefit is increased by 3%.	
Member Contributions:	0.3% of Earnable Compensation	

Section 5: GASB Information

General information about the pension plan

Plan Description

Plan membership. At October 1, 2022, plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	3
Vested terminated members entitled to but not yet receiving benefits	0
Active members	1,344
Total	1,347

Net pension liability

Reporting date for employer under GASB 68	September 30, 2023	September 30, 2022
Measurement date	September 30, 2022	September 30, 2021
Components of the Net Pension Liability		
Total Pension Liability	\$2,457,345	\$1,483,699
Plan Fiduciary Net Position	1,425,000	1,026,000
Net Pension Liability	1,032,345	457,699
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	57.99%	69.15%

The Net Pension Liability (NPL) for the plan was measured as of September 30, 2022. Plan Fiduciary Net Position (plan assets) was valued as of the measurement dates and the Total Pension Liability (TPL) was determined from an actuarial valuation as of October 1, 2022.

Plan provisions. The plan provisions used in the measurement of the NPL are the same as those used in the actuarial valuation as of October 1, 2022.

Section 5: GASB Information

Actuarial assumptions. The TPL as of September 30, 2022, that was measured by an actuarial valuation as of October 1, 2022, used the following actuarial assumptions, applied to all periods included in the measurement:

Salary increases	3.00% - 7.50%, of which 2.50% is the Plan's long-term payroll inflation
Investment rate of return	6.50%
Other assumptions	See Section 4 of this report for a complete description of all actuarial assumptions. These assumptions were developed in the analysis of actuarial experience study for the Corrections Officers' Retirement Plan for the period October 1, 2012 through September 30, 2017 for Corrections Officers and by the assumptions in use by the Police and Fire Retirement Plan.

Section 5: GASB Information

Determination of discount rate

The discount rate used to measure the Total Pension Liability (TPL) was 6.50% as of September 30, 2022. The Plan's assets are not currently invested but planning to be invested under the same investment policy as that employed by the Corrections Officers' Retirement Plan, and thus the same investment return assumption as that used for the valuation of the Retirement Plan is used to measure TPL.

Discount rate sensitivity

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the Net Pension Liability (NPL) of the Plan as of September 30, 2022, which is allocated to all employers, calculated using the discount rate of 6.50%, as well as what the Plan's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (5.50%) or 1-percentage-point higher (7.50%) than the current rate.

	1% Decrease (5.50%)	Current Discount Rate (6.50%)	1% Increase (7.50%)
Net Pension Liability	\$1,524,589	\$1,032,345	\$649,951

Section 5: GASB Information

Schedule of changes in Net Pension Liability – Last two fiscal years

Reporting date for employer under GASB 68	September 30, 2023	September 30, 2022
Measurement date	September 30, 2022	September 30, 2021
Total Pension Liability		
Service cost	\$765,764	\$1,626,724
Interest	147,967	90,276
Change of benefit terms	0	0
Differences between expected and actual experience	38,791	-548,606
Changes of assumptions	53,124	-2,131,340
Benefit payments, including refunds of member contributions	<u>-32,000</u>	<u>-23,000</u>
Net change in Total Pension Liability	\$973,646	-\$985,946
Total Pension Liability – beginning	<u>1,483,699</u>	<u>2,469,645</u>
Total Pension Liability – ending	\$2,457,345	\$1,483,699
Plan Fiduciary Net Position		
Contributions – employer	\$216,000	\$160,000
Contributions – employee	214,000	165,000
Net investment income	1,000	-1,144
Benefit payments, including refunds of member contributions	-32,000	-23,000
Administrative expense	0	0
Other	<u>0</u>	<u>0</u>
Net change in Plan Fiduciary Net Position	\$399,000	\$300,856
Plan Fiduciary Net Position – beginning	<u>1,026,000</u>	<u>725,144</u>
Plan Fiduciary Net Position – ending	\$1,489,000	\$1,026,000
Net Pension Liability – ending	\$1,032,345	\$457,699
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	57.99%	69.15%
Covered payroll ¹	\$55,424,834	\$41,698,178
Plan Net Pension Liability as percentage of covered payroll	1.86%	1.10%

¹ Pensionable payroll as of the measurement date

Section 5: GASB Information

Notes to Schedule:

<i>Benefit changes:</i>	Initial liability for the creation of the plan was first recognized for the fiscal year ending September 30, 2021 based on a September 30, 2020 measurement.
<i>Assumption changes:</i>	The discount rate was lowered from 6.625% to 6.50% based on a September 30, 2022 measurement.

Section 5: GASB Information

Deferred outflows of resources and deferred inflows of resources

Reporting date for employer under GASB 68	September 30, 2023	September 30, 2022
Measurement date	September 30, 2022	September 30, 2021
Deferred outflows of resources		
Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$0	\$0
Changes of assumptions	50,000	0
Net difference between projected and actual earnings on pension plan investments	76,427	16,404
Difference between expected and actual experience in the Total Pension Liability	<u>36,512</u>	<u>0</u>
Total deferred outflows of resources	\$162,939	\$16,404
Deferred inflows of resources		
Changes in proportion and differences between employer's contributions and proportionate share of contributions ¹	\$0	\$0
Changes of assumptions	1,880,595	2,005,968
Net difference between projected and actual earnings on pension plan investments	0	0
Difference between expected and actual experience in the Total Pension Liability	<u>484,065</u>	<u>516,336</u>
Total deferred inflows of resources	\$2,364,660	\$2,522,304
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Reporting date for employer under GASB 68 year ended October 1:		
2023	N/A	-\$153,543
2024	-\$132,105	-153,543
2025	-132,105	-153,543
2026	-132,105	-153,543
2027	-136,206	-157,644
2028	-152,237	-157,644
Thereafter	-1,516,963	-1,576,440

Note: Average expected remaining service is 17.00 years as of September 30, 2022 and September 30, 2021.

¹ Calculated in accordance with Paragraphs 54 and 55 of GASB 68

Section 5: GASB Information

Pension expense

Reporting date for employer under GASB 68	September 30, 2023	September 30, 2022
Measurement date	September 30, 2022	September 30, 2021
Components of pension expense		
Service cost	\$765,764	\$1,626,724
Interest	147,967	90,276
Current-period benefit changes	0	0
Expensed portion of current-period difference between expected and actual experience in the Total Pension Liability	2,279	-32,270
Expensed portion of current-period changes of assumptions	3,124	-125,372
Member contributions	-214,000	-165,000
Projected earnings on pension plan investments	-81,156	-19,363
Expensed portion of current-period differences between actual and projected earnings on pension plan investments	16,032	4,103
Administrative expense	0	0
Other	0	0
Recognition of beginning of year deferred outflows of resources as pension expense	4,101	0
Recognition of beginning of year deferred inflows of resources as pension expense	-157,644	0
Pension expense	\$486,467	\$1,379,098

Section 5: GASB Information

Schedule of employer contributions

Year Ended September 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2020	N/A	\$109,237	N/A	\$36,412,333	0.30%
2021	N/A	160,000	N/A	41,698,178	0.38%
2022	N/A	216,000	N/A	55,424,834	0.39%

Appendix A: Definition of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Retirees and Beneficiaries:	Actuarial Present Value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or 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 Valuation dates. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected.
Actuarially Equivalent:	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Appendix A: Definition of Pension Terms

Actuarial Present Value of Future Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions 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, as well as Actuarially Determined Contributions.
Actuarial Value of Assets (AVA):	The value of the Plan's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Contribution.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the Plan.
Actuarially Determined Contribution (ADC):	The employer's contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
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 Unfunded Actuarial Accrued Liability. 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 Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is intended to pay off the Unfunded Actuarial Accrued Liability.

Appendix A: Definition of Pension Terms

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Plan is calculated, including: <u>Investment return</u> - the rate of investment yield that the Plan will earn over the long-term future; <u>Mortality rates</u> - the rate or probability of death at a given age for employees and retirees; <u>Retirement rates</u> - the rate or probability of retirement at a given age or service; <u>Disability rates</u> - the rate or probability of disability retirement at a given age; <u>Withdrawal rates</u> - the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; <u>Salary increase rates</u> - the rates of salary increase due to inflation, real wage growth and merit and promotion increases.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula based on the member's compensation, age and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
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.
Experience Study:	A periodic review and analysis of the actual experience of the Plan that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified based on recommendations from the Actuary.
Funded Ratio:	The ratio of the Actuarial Value of Assets (AVA) to the Actuarial Accrued Liability (AAL). Plans sometimes also calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the AVA.
GASB 67 and GASB 68:	Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.

Appendix A: Definition of Pension Terms

Investment Return:	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost:	The portion of the Actuarial Present Value of Future Benefits and expenses, if applicable, allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of the Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of member contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the Amortization Period.
Plan Fiduciary Net Position:	Market value of assets.
Service Costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Total Pension Liability (TPL):	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus or an Overfunded Actuarial Accrued Liability.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Benefits is determined. The expected benefits to be paid in the future are discounted to this date.